



**DEPARTMENT
of HEALTH
and HUMAN
SERVICES**

**Fiscal Year
2022**

Centers for Disease Control
and Prevention

*Justification of
Estimates for
Appropriation Committees*

MESSAGE FROM THE DIRECTOR

For 75 years, the Centers for Disease Control and Prevention (CDC) has been trusted to carry out its mission to protect America's safety, health, and security. Even during the unprecedented circumstances of the past year, CDC's scientific expertise, determination, selflessness, and innovation have helped the agency continue to advance its mission.

The President's Fiscal Year (FY) 2022 Discretionary Budget Request highlighted four interlocking crises that America faces: a historic global pandemic, an economy battered by recession, the generational crisis of climate change, and persistent inequities in the economy and the nation. CDC's FY 2022 Budget Request will address these issues by investing in core foundations of public health.

During my short time as CDC Director, it is clear to me that we must address long-standing vulnerabilities through sustainable investments in our public health infrastructure. To avoid the substantial economic costs associated with both large-scale emergencies and ongoing public health concerns, we must be willing to make long-term investments in our public health system.

CDC's FY 2022 Budget Request builds on the investments in the American Rescue Plan Act of 2021 and:

- **Improves readiness for future public health crises:** builds on initial investments and lessons learned from the Coronavirus Disease 2019 by investing in public health infrastructure through public health data modernization, the public health workforce, and global health security.
- **Addresses racial disparities in public health:** includes increases to key programs to improve health equity and health disparities in racial and ethnic minority communities and other disproportionately affected communities around the country.
- **Builds public health approaches to reduce violence:** includes increases in injury and violence prevention programs that will address the growing issues around domestic, sexual, and gun violence.
- **Defeats diseases and epidemics:** includes major investments to end the opioid epidemic, tackle the climate crisis, and enhance our immunization infrastructure.

On behalf of our agency, I extend our appreciation for your contribution to CDC's work as a science-based, data-driven, service organization and look forward to working with you to protect the health, safety, and security of future generations.

Sincerely,



Rochelle P. Walensky, MD, MPH
Director, CDC

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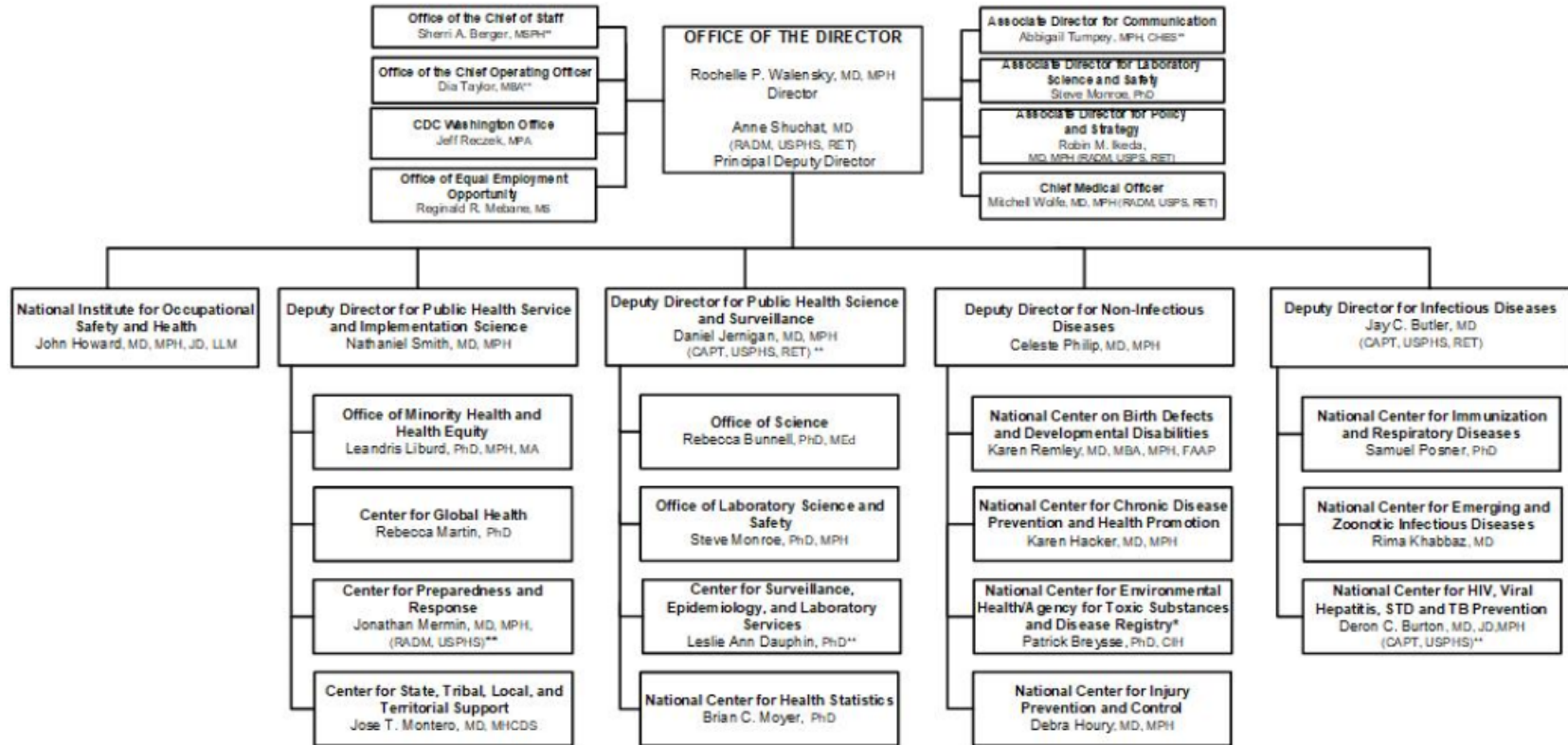
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CDC ORGANIZATIONAL CHART

DEPARTMENT OF HEALTH AND HUMAN SERVICES CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)



Listed personnel are Director of the entity unless otherwise noted.

*ATSDR is an OPDIV within DHHS but is managed by a common director's office. See additional

** Serving as an acting official

APPROVED 8/17/2018
EFFECTIVE 9/25/2018

Names Updated 4/13/2021

INTRODUCTION AND MISSION

The Centers for Disease Control and Prevention (CDC) is part of the Department of Health and Human Services. CDC is the nation's public health protection agency. CDC saves lives and protects people from health threats. CDC staff work at home and abroad to protect America from health, safety, and security threats, both domestic and foreign. CDC increases the health security of our nation.

CDC is working to keep Americans safe from public health threats, including COVID-19. Every single American is affected by this pandemic, and CDC is employing every applicable public health asset to mitigate, isolate, and eliminate the disease. CDC is responding to this pandemic by preparing healthcare workers, learning more about how the disease spreads, and supporting state, local, tribal and territorial health departments in controlling the outbreak.

CDC commits its world-class scientific expertise in bringing an end to the devastation of epidemics, finally eliminating certain diseases, providing a new level of domestic preparedness and global health security to current and emerging threats. Protecting America's health requires continuous improvement for our most vital assets, which are fundamental to meet our agency's priorities.

www.cdc.gov/budget

www.cdc.gov/cj

EXECUTIVE SUMMARY

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OVERVIEW OF BUDGET REQUEST

The Fiscal Year (FY) 2022 budget request for CDC and ATSDR includes a total funding level of \$9,578,911,000 in discretionary budget authority, Public Health Service (PHS) Evaluation funds, and the Affordable Care Act Prevention and Public Health Fund (PPHF). This request is \$1,681,465,000 above the FY 2021 Enacted. The FY 2022 request includes the largest budget authority increase for CDC in nearly two decades and contains a number of priority initiatives that address critical public health needs and opportunities.

The funding request invests in the core foundations of our country's public health system and advances key HHS priorities:

- Building public health infrastructure
- Reducing health disparities
- Public health approaches to reducing violence
- Defeating other diseases and epidemics

In addition to CDC's discretionary funding request for FY 2022, the budget includes the following mandatory funding level estimates:

Vaccines for Children = \$5.140 billion, a decrease of \$328.107 million below the FY 2021 Enacted.¹

World Trade Center Health Program = \$641.485 million, + \$91 million above the FY 2021 Enacted.

The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) = \$50.763 million, level with FY 2021 Enacted.²

¹ Current estimates are based on the FY 2022 VFC PB 10 Year Table, as of December 2020.

² EEOICPA level reflects post-sequestered amounts.

The funding amounts and programmatic approaches described in this document are changes compared to the FY 2021 Enacted.

Initiatives

Building Public Health Infrastructure

Over the last 12 years, the United States has faced four significant emerging infectious disease threats – the H1N1 influenza pandemic, Ebola, Zika, and COVID-19. These experiences have proven that public health emergencies and, specifically, infectious disease threats, are here to stay. The ability to respond to a public health emergency requires a strong day-to-day public health system, supported by infrastructure that is not highly segmented by disease, condition, or activity. In addition to the COVID-19 pandemic, over the past 24 months, CDC has also responded to diverse public health threats from E-cigarette or Vaping Product Use-Associated Lung Injuries (EVALI), Ebola, complex multi-state food-borne disease outbreaks, wildfires, and hurricanes. Responding to the unique characteristics of each of these public health emergencies has required deep scientific expertise to deploy a specialized approach and called for a robust public health system with world-class infrastructure nationwide to stop disease at its source. Unfortunately, this recent history has revealed the effects of inadequate public health infrastructure. Ongoing health disparities made us as a nation more vulnerable to pandemics and large-scale public health emergencies, as well as burdening large segments of our population with chronic public health concerns. This highlights the need to invest in both domestic and global public health infrastructure.

CDC’s FY 2022 budget request includes funding to address deficits in the core components of public health infrastructure in States and Territories, modernize public health data collection nationwide and train a cadre of epidemiologists and other public health experts who can deploy and support public health efforts at the state, territorial, or international level; and build capacity to detect and respond to emerging global biological threats.

Public Health Infrastructure and Capacity (\$400.0 million)

CDC requests \$400.0 million to invest in core public health infrastructure and capacity nationwide. This funding supports the agency’s investment in all components essential to its mission: addressing the deficit in public health infrastructure nationwide through support to state, territorial, and local health departments, attracting and retaining diverse leadership and expertise in public health, and improving the ability to respond rapidly to new and emerging infections.

While this level of investment in FY 2022, CDC will begin to address mission-critical gaps in public health infrastructure and capacity nationwide. Transitioning from sporadic influxes of supplemental funding tied to a specific emergency to flexible funding that can prevent another crisis will strengthen the current public health system. Flexible, sustainable investments in infrastructure and capacity are critical for saving lives and averting economic losses caused by public health emergencies and chronic public health problems. In FY 2022, CDC will prioritize funding to rebuild the most critical public health infrastructure needed to safeguard the nation’s health and economic security.

Public Health Data Modernization (+\$100.0 million)

CDC’s FY 2022 request of \$150.0 million for Public Health Data Modernization is \$100.0 million above FY 2021 Enacted. The Public Health Data Modernization Initiative (DMI) is a multi-year strategy transforming how CDC collects and uses data to drive action in real time—efficiently, flexibly, rapidly, and with enhanced impact. The events of the past year have underscored that public health data is behind when we need to get ahead—and stay ahead—of disease. Staying ahead will require support to bring all core data together, continually improve systems at a pace that can match both technological advancements and shifting public health priorities, and fully harness the power of forecasting and predictive analytics to prevent future crises.

Data modernization will require commitment and partnership across the public health sector—and especially with state, tribal, local, and territorial partners—to create and sustain modern, secure, real-time data systems that will protect the American public from health threats while safeguarding individual privacy. CDC has developed a DMI Roadmap of Activities and Expected Outcomes that guides all current and future investments in data modernization. The roadmap lays out the plan for how CDC will coordinate people and systems, accelerate data for action, and support strategic innovation to reach the agency’s long-term goals. With increased data modernization resources, CDC will expand targeted investments across the roadmap’s three priority areas: Coordinating People and Systems, Accelerating Data for Action, and Supporting Strategic Innovation.

Public Health Workforce (+\$50.0 million)

The U.S. public health workforce is on the frontlines of the COVID-19 pandemic, laboring through more than a year of long days, nights, and weekends to protect the public from a fast moving and devastating emergency. While the pandemic has demonstrated the resilience and commitment of the public health workforce, it has also laid bare the gaps resulting from a decades-long erosion of workforce support. The COVID-19 response shone a stark light on deficiencies in the nation’s investment in its public health workforce, which did not have the people or resources to surge to meet the demands of a pandemic emergency response. Strategic investments in a diverse, robust, well-trained public health workforce are needed to ensure America never finds itself in that situation again. Actions taken now to invest in developing the next generation of essential public health workers will better position our communities and the nation to respond to the current pandemic and to build back a better workforce to safeguard Americans’ health.

CDC’s FY 2022 request of \$106.0 million for Public Health Workforce and Career Development is \$50.0 million above the FY 2021 Enacted. With this investment in CDC’s fellowship and training programs, CDC will rebuild the workforce of epidemiologists, contact tracers, lab scientists, community health workers, data analysts, behavioral scientists, and communicators who can help protect every American community. The country’s health workforce needs to be nimble, responsive, fueled by drive to protect all Americans, and empowered by science.

Global Public Health Protection (+\$100.0 million)

In FY 2022, CDC’s request of \$303.2 million for Global Public Health Protection is an increase of \$100.0 million above the FY 2021 Enacted. CDC will continue to build on its foundation of technical expertise to assist countries to expand and improve their own disease surveillance, laboratory systems, workforce development, and emergency management and response capacities. This sustainable investment also leverages decades of global cooperation and support to control HIV and malaria, end TB, eradicate polio, and prepare for and detect influenza and other pandemic diseases, including the current partnerships to respond to the COVID-19 pandemic. CDC will also strengthen and expand collaboration with and support both regional and country-led responses confronting the most challenging health epidemics, often in complex geopolitical settings.

CDC recognizes that achieving global health security requires a coordinated, multisectoral approach and stands ready to continue leading global efforts to strengthen public health capacities and shield Americans from outbreaks that put each of us at risk. CDC remains committed to working side-by-side with countries and partners to develop strong surveillance systems that enable disease tracking and reporting, as well as helping to build better laboratory systems. By modernizing and expanding frontline disease detective training and continually enhancing emergency response capabilities, CDC demonstrates its commitment to strengthening global health security and protecting the health and livelihoods of the American people.

Reducing Disparities

COVID-19 has highlighted long-standing systemic health and social inequities. The disparities seen over the past year among communities of color were not a result of COVID-19, but the structural barriers that impact racial and ethnic groups differently to influence where a person lives, where they work, where their children play, and where they worship and gather in community. Over generations, these social determinants of health (SDOH) have [had life-long negative effects](#)³ on the mental and physical health of individuals in communities of color. Health equity must be the cornerstone of our public health work and of our pandemic response. CDC's FY 2022 budget request includes increases to key programs that work to improve health equity and health disparities in racial and ethnic minority communities and other disproportionately affected communities around the country.

Social Determinants of Health (+\$150.0 million)

CDC's FY 2022 request includes \$153.0 million, an increase of \$150.0 million above the FY 2021 Enacted, for investments in social determinants of health (SDOH) to improve health equity. CDC will expand activities to address SDOH in all States and Territories, including but not limited to expanding and implementing accelerator plans, initiating a SDOH implementation program, providing technical assistance to communities and continuing to build the evidence base and improve data collection to better understand health disparities. CDC will support interventions promoting better public health, with culturally tailored interventions in communities at highest risk to reduce health disparities; establish best practices to reduce health disparities and achieve health equity; implement and evaluate programs that promote health equity; and support communication efforts aimed at addressing health disparities.

Ending the HIV Epidemic in the United States (+\$100.0 million)

In FY 2022, CDC requests an increase of \$100.0 million above FY 2021 Enacted for the third year of the Ending the HIV Epidemic (EHE) initiative. Advances in medications for the treatment and prevention of HIV, improved diagnostic tests, and new outbreak detection technology provide a unique opportunity to alter the trajectory of HIV infection rates in the U.S. with a goal of eliminating new HIV infections. The EHE initiative is a multi-year program focused on four key strategies: diagnose, treat, prevent, and respond. The launch of the initiative, in collaboration with other HHS agencies, began a new era, moving us from HIV prevention to HIV epidemic control. Achieving health equity is central to addressing the HIV epidemic. The multi-year program will provide additional expertise, technology, and resources needed to end the HIV epidemic in the United States. CDC is embracing innovative strategies to increase access to HIV prevention services, enhance community engagement, and combat stigma.

In FY 2022, an increased investment of \$100.0 million will enable CDC to advance the four key strategies needed to end the epidemic. CDC will provide increased funding to the 57 EHE focus jurisdictions to implement approaches designed to end the HIV epidemic. In addition, CDC will improve health equity across the entire HIV prevention portfolio, test innovative service delivery models which are designed to increase access to prevention services, use syndemic approaches to broaden reach to key populations and create efficiencies, and strengthen engagement of grassroots community based organizations in implementing EHE.

Maternal Mortality (+\$26.0 million)

The U.S. has the highest maternal mortality rate among developed nations, with a particularly high mortality rate for Black and American Indian/Alaska Native women. To help eliminate race-based disparities in outcomes among birthing people and drive down the rate of maternal mortality, the CDC's FY 2022 request includes an increase of \$26.0 million over the FY 2021 Enacted for Maternal Mortality Review Committees (MMRCs).

³ <https://www.cdc.gov/healthequity/racism-disparities/impact-of-racism.html>.

CDC will expand its support for MMRCs to implement data collection and data-driven action to prevent maternal deaths and illness. This funding level would expand support to all states and territories, working toward better understanding the causes of pregnancy related death and prevention opportunities. CDC is also conducting [Hear Her](#),⁴ a national campaign to raise awareness of critical warning signs during and after pregnancy, and to improve communication between patients and their health care providers.

Public Health Approaches to Reducing Violence

Violence not only harms individuals, but also can harm communities by affecting local economies, increasing demand on law enforcement, and straining social services. The COVID-19 pandemic has created the need to remain vigilant in providing violence prevention services while individuals are isolating at home. Public health measures necessary to contain the COVID-19 outbreak, such as extended shelter-in-place orders, may have unintended effects on the potential for interpersonal and self-directed violence in the home—exacerbating a problem that already was far too prevalent. CDC’s FY 2022 budget request includes increases to programs that will help address this public health concern through evidence-based approaches.

Firearm Injury and Mortality Prevention Research (+\$12.5 million)

In FY 2022, CDC requests \$25.0 million for firearm injury and mortality prevention research, a \$12.5 million increase over FY 2021 Enacted. These funds will be used to support research to identify the most effective ways to prevent firearm related injuries and deaths and to expand the number of states participating in the FASTER initiative, which will broaden firearm injury data collection.

Community Violence Intervention initiative (\$100.0 million)

In FY 2022, CDC is requesting \$100 million for a new evidence-based community violence intervention initiative, which aims to prevent intentional violence, such as mass casualty violence or gang violence. CDC will support implementation of evidence-based violence prevention strategies with the greatest potential in the 25 cities with the highest overall number of homicides and the 25 cities with the highest number of homicides per capita. In addition, CDC will support modernizing data systems to monitor youth and community violence in real time. These efforts will address the causes of violence in communities and help reduce the health inequities that characterize such violence across the United States.

Rape Prevention (+\$50.0 million)

In FY 2022 CDC requests an additional \$50.0 million for rape prevention and education, to enhance support to state and territorial health departments to initiate, expand or enhance approved prevention activities. In addition, CDC will support state, territorial, and tribal sexual assault coalitions to coordinate and provide prevention activities and to collaborate with entities engaged in sexual violence prevention.

Domestic and Sexual Violence (+\$5.0 million)

With the requested additional \$5.0 million for intimate partner violence (IPV) prevention activities, CDC will develop and implement an appropriate surveillance strategy to estimate the burden of IPV among older adults. This estimate will also help inform updates to CDC’s technical package on preventing IPV. CDC will also work to prevent dating violence among youth with disabilities by developing targeted recommendations, messaging, and resources based on the successful frameworks used in CDC’s other teen dating violence prevention initiatives.

Domestic Violence Community Projects (+\$5.0 million)

⁴ <https://www.cdc.gov/hearher/index.html>.

The FY 2022 request includes an additional \$5,000,000 for domestic violence community projects. CDC will expand the reach of the Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) program by funding up to 20 additional recipients to build capacity to implement and evaluate proven IPV prevention strategies in their states.

National Violent Death Reporting System (+\$10.0 million)

CDC’s FY 2022 request of \$34,500,000 for the National Violent Death Reporting System (NVDRS) is \$10,000,000 above FY 2021 Enacted. In FY 2022, CDC will support 52 recipients to collect NVDRS data. CDC will use the additional funding requested for NVDRS to collect data on gender identity and sexual orientation. These data will increase our understanding of violent deaths among disproportionately affected groups and inform efforts towards decreasing the number of deaths across groups.

Defeating Other Diseases and Epidemics

Opioid Overdose Prevention and Surveillance (+\$237.8 million)

The opioid epidemic has shattered families, claimed lives, and ravaged communities across the Nation—and the COVID-19 pandemic has only deepened this crisis. Addressing the current overdose epidemic remains a priority for CDC. The Administration’s strategy brings together surveillance, prevention, treatment, recovery, law enforcement, interdiction, and source-country efforts to address the continuum of challenges facing this country due to drug use. CDC’s role is to prevent drug-related harms and overdose deaths.

The FY 2022 request for opioid overdose prevention and surveillance is \$713.4 million, an increase of \$237.8 million above the FY 2021 Enacted. With the additional resources requested, CDC will increase local investments and innovation to reach approximately 25 of the nation’s largest cities/counties and 40 smaller communities heavily impacted by the overdose crisis, while continuing to support all 50 states, territories, and local jurisdictions to track and prevent overdose deaths. CDC will prioritize support to collect and report real-time, robust overdose mortality data and to move from data to action, building upon the work of the Overdose Data to Action (OD2A) program. To do so, CDC will partner with funded jurisdictions to implement surveillance strategies that include contextual information alongside data, as well as increase surveillance capabilities for polysubstance use and emerging substance threats such as stimulants. The additional resources requested will enable CDC to support investments in prevention efforts for people put at highest risk, for example, supporting risk reduction and access to medications for opioid use disorder for people transitioning from alternate residence (jail/prison, treatment facility, homeless shelter).

Infectious Diseases and the Opioid Epidemic (+\$6.5 million)

CDC requests an increase of \$6.5 million above the FY 2021 Enacted level for Infectious Diseases and the Opioid Epidemic. This increase will expand activities to target the infectious disease consequences of the public health crisis involving injection drug use, including viral hepatitis, HIV, and bacterial and fungal infections. In FY 2022, with an increased investment of \$6.5 million, CDC will maintain support for jurisdictions to address infectious disease vulnerabilities related to injection drug use. In addition, CDC will expand support for syringe services programs and strengthen national communication capacity on the effectiveness and safety of syringe services programs. Funded activities will improve the implementation of and access to high quality syringe services programs nationwide; strengthen state and local capacity to detect and respond to infectious disease clusters and prevent further transmission, improve testing and linkage to care for infectious diseases related to injection drug use, and increase linkage to substance use disorder treatment at healthcare encounters for drug use related infections.

Climate and Health (+\$100.0 million)

Climate change is already adversely impacting health and well-being in the United States, and these health impacts are projected to increase in the future. Climate-related events such as heat waves, floods, droughts, and extreme storms affect everyone, but not everyone is affected equally. Factors such as age, location, race, and occupation all affect an individual's resilience to climate-related health risks. CDC's Climate and Health Program (CHP) directly addresses these issues by supporting state, tribal, local, and territorial public health agencies to prepare for specific health impacts of a changing climate. The CHP focuses on the public health-related aspects of climate extremes, including ways to reduce health risks by seeking to establish and use evidence-based interventions targeting the most vulnerable populations. As the only U.S. Government investment dedicated to preparing our nation to anticipate and adapt to the health effects linked to climate change, CDC's climate and health program is uniquely positioned to provide resources and assistance to some of the most at-risk communities around the country through its core program of data, science, and action.

The FY 2022 request includes a \$100.0 million increase for the Climate and Health program to expand the program to all states and territories to identify potential health effects associated with climate change and implement health adaptation plans. An expansion of existing strategies and development and implementation of new strategies will further expand the reach and public health impact of the Climate and Health Program.

Immunization and Respiratory Diseases (+\$99.9 million)

CDC's national immunization recommendations currently provide guidance for the prevention of 17 vaccine-preventable diseases (VPDs) across the lifespan. The discretionary Immunization Program plays a fundamental role in achieving national immunization goals and sustaining high vaccination coverage rates to prevent death and disability from VPDs. The COVID-19 pandemic's impact on the U.S.'s health and economy are unprecedented and includes disruption of the health system's administration of routine childhood and adult immunization. Maintaining continued vaccination coverage is critical to preventing outbreaks that can overwhelm already-overburdened health care systems.

The FY 2022 budget request for Immunization and Respiratory Diseases includes nearly a \$100 million increase over the FY 2021 Enacted level. With this budget increase, CDC will expand existing efforts to enhance the adult immunization infrastructure to increase routine vaccination rates, detect and respond to outbreaks of VPDs, and address vaccine hesitancy.

Influenza (+\$25.0 million)

Influenza is a public health and national security priority. In addition to the annual burden caused by seasonal influenza epidemics, a serious influenza pandemic can cause devastating disease and economic burden. While imperfect, currently available influenza vaccines are still the most important and effective tool available to prevent influenza. Influenza vaccines have many benefits including reducing the risk of influenza illnesses, hospitalizations, and the risk of influenza-related death in children.

CDC's FY 2022 request for Influenza Planning and Response is \$25.0 million above the FY 2021 Enacted level. This funding will support expanding vaccine effectiveness monitoring and evaluation, enhancing virus characterization and expanding vaccine virus development for use by industry, increasing genomic testing of influenza viruses, and increasing influenza vaccine use.

Parasitic Diseases and Malaria (+\$5.0 million)

The FY 2022 request includes an increase of \$5.0 million for Parasitic Diseases and Malaria. With an increase of \$5.0 million in FY 2022, CDC will be better able to respond to emergent needs, enhance the activities of its parasitic disease laboratories, and strengthen prevention, diagnosis, and treatment of parasitic diseases in the U.S. and globally.

Other Critical Investments

Infectious Disease Rapid Response Reserve Fund (+\$25.0 million)

CDC's FY 2022 request of \$35.0 million for the Infectious Disease Rapid Response Reserve Fund (IDRRRF) is \$25.0 million above the FY 2021 Enacted level. As evident with Ebola and COVID-19, rapid response is essential to emerging public health threats, and timely action for detection, investigation, and assistance that saves lives. Additional resources for deposit in the IDRRRF ensure that funds will be available when an emerging public health crisis is detected.

Quarantine and Migration (+\$30.0 million)

The COVID-19 pandemic demonstrated the need to rapidly respond to the spread of communicable diseases by travelers. The FY 2022 request includes an increase of \$30.0 million above the FY 2021 Enacted level for CDC's quarantine program. With this increase, CDC will modernize public health programs that protect U.S. communities from infectious diseases and scale-up migration systems that will protect the United States during future international outbreaks and pandemics, including but not limited to, an expanded quarantine network with 24/7 coverage at the most heavily trafficked airports and land border crossings, a modernized and flexible traveler management program, increased capacity for health screening and traveler education at U.S. airports during emergencies, and an enhanced CDC maritime public health surveillance system that would allow CDC to rapidly identify and respond to maritime public health risks.

Surveillance for Emerging Threats to Mothers and Babies (+\$5.0 million)

CDC's FY 2022 request includes a \$5.0 million increase for improved surveillance for Emerging Threats to Mothers and Babies. Prior investments have begun to address the serious gap in the nation's ability to detect and respond to emerging threats to moms and babies, and additional investment will help sustain and recruit laboratory expertise and modernize and expand surveillance.

Buildings and Facilities (+\$25.0 million)

CDC's FY 2022 request of \$55.0 million for Buildings and Facilities is \$25.0 million above the FY 2021 Enacted level. This funding supports major renovations to existing buildings, as well as repair and improvements (e.g., laboratory ventilation upgrades, structural repairs, roof replacements, and electrical and mechanical repairs) necessary to restore, maintain, and improve CDC's assets. The critical program support projects and facilities maintenance planned include: replacing components of CDC's High Containment Laboratory Building Automation System; examining the water leak detection and bulk gas detection systems and repairing exterior and roofing of laboratory buildings; renovating outdated animal research facilities; repairing security perimeter hydraulic bollards and barrier systems; remediating the NIOSH Pittsburgh Campus landfill for mining and construction waste; abating asbestos in the NIOSH Spokane Research Laboratory; repairing the electrical infrastructure on the NIOSH Morgantown, West Virginia campus; renovating the Security Operations Center on CDC's Fort Collins campus; and other projects. The increased investment will allow CDC to make significant progress toward reducing its backlog of maintenance and repairs. The current backlog of maintenance and repair is \$156.2 million.

Vessel Sanitation Program (+\$3.0 million)

CDC's Vessel Sanitation Program (VSP) has a long history of working with the cruise ship industry to prevent and control the introduction, transmission, and spread of gastrointestinal (GI) illnesses on cruise ships. In previous years, funding to support the work of the Vessel Sanitation Program (VSP) was obtained through the collection of user fees for cruise ship inspections. During the COVID-19 response, these inspections and the collection of fees have been suspended. In FY 2022, CDC is requesting \$3.0 million, available until expended, to support operations of the Vessel Sanitation Program in the case that user fees cannot be collected or are insufficient

Childhood Lead Poisoning Prevention Program (+\$7.0 million)

CDC's FY 2022 request for the Childhood Lead Poisoning Prevention includes a \$7.0 million increase in PHS Evaluation transfers. CDC will continue to support childhood lead poisoning prevention activities in 53 State and local jurisdictions. Increased funding will be used to improve health equity by building capacity in up to 61 jurisdictions, to evaluate key components of the program to identify best practices, screening methods, and lead exposure research needs to better prevent and mitigate childhood lead exposure, and to expand the data capabilities of the program, in alignment with CDC's data modernization initiative, to rapidly identify and mitigate emerging threats and ensure the public and decision makers are aware of communities with elevated risk of exposure to lead.

Agency for Toxic Substances and Disease Registry (+\$3.8 million)

ATSDR's FY 2022 request of \$81.75 million is \$3.75 million above the FY 2021 Enacted level. New resources in FY 2022 will enable continued and expanded geospatial public health analyses, including COVID-19 variants, clusters, and outbreak analysis, and apply the same approaches to other emerging health concerns.

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OVERVIEW OF PERFORMANCE

As the nation's prevention agency and a leader in improving health around the world, CDC is committed to reducing the leading causes of death, disability and injury. CDC staff work 24/7 around the world to save lives, protect people, and save money through prevention. To achieve maximum public health impact, CDC conducts research; implements strategic, evidence-based programs; and monitors results through ongoing data collection.

CDC's priorities form the core of its public health programs. These programs require the scientific excellence and leadership of our highly trained staff, who are dedicated to high standards of quality and ethical practice. The agency's priorities include:

- Securing global health and America's preparedness.
- Eliminating disease.
- Ending epidemics.

Performance in each of these areas and in all of CDC's work is strengthened through the use of rigorous and ongoing performance metrics and program evaluation data to monitor program effectiveness and compare performance to established targets. The accomplishments described below highlight the importance of investing in high quality public health programs, preventing disease, and protecting health.

Securing Global Health and America's Preparedness

- In response to the COVID-19 pandemic, CDC adapted the National Healthcare Safety Network (NHSN) – its flagship quality healthcare improvement system – to provide urgently needed information on COVID-19 from both hospitals and nursing homes in January 2020.
 - From March through July 2020, approximately 60% of all hospitals in the country voluntarily reported key indicators of hospital capacity, including available hospital beds, ICU beds, and ventilators—and the percentage of COVID-19 patients using these resources.
 - Beginning in April 2020, CDC again adapted NHSN so that nursing homes could report cases and deaths among residents and staff, and shortages of healthcare personnel and personal protective equipment. CDC worked closely with the Centers for Medicare and Medicaid Services (CMS) to make this reporting mandatory for all ~15,400 nursing homes certified by CMS. CDC worked with CMS to publish these data on CMS' website to provide the first national lens into the burden of COVID-19 in nursing homes, and worked with CMS, state and local health departments, and nursing homes to take action based upon the data.
- CDC's Public Health Emergency Preparedness (PHEP) recipients were able to use FY 2019 PHEP funds to support critical COVID-19 response activities before receiving supplemental funding. Funding supported items such as personal protective equipment purchases and fit testing, and quarantine and housing needs of persons under investigation for COVID-19. Specific examples of how recipients planned to use funds include laboratory equipment, reagents and other specialized materials and supplies needed for lab processing and testing of COVID-19 samples; electronic staffing systems; communications and call center equipment; and contact tracing.
- Throughout the COVID-19 response, state health officials have used syndromic surveillance data to understand and monitor the spread of the outbreak throughout the general population, as well as targeted populations in high risk environments such as long term care facilities. In 2020, 59 sites, representing 5,041 facilities, including 3,310 emergency departments, contributed data to CDC's National Syndromic Surveillance Program BioSense Platform. This surveillance platform can be used to share information and investigate disease threats that cross jurisdictions. In addition to COVID-19, this platform's syndromic data can serve as an early warning system for public health concerns such as flu

outbreaks and have been used in responses for opioid overdoses, vaping-associated lung disease, Zika virus infection, and natural disasters.

- CDC investments in global influenza surveillance and pandemic preparedness were critical in the response to the COVID-19 pandemic. Partner countries leveraged the infrastructure and systems developed with that support to use existing polymerase chain reaction (PCR) testing capacity and skills at national influenza centers in implementing and using influenza diagnostic platforms for the SARS CoV-2 virus.
- CDC developed a new laboratory test that simultaneously identifies two types of influenza viruses (influenza A and influenza B) and SARS-CoV-2, the virus that causes COVID-19. The Food and Drug Administration (FDA) issued an Emergency Use Authorization for the test on July 2, 2020. This was increasingly useful during the flu season.
- CDC has worked to provide timely data on COVID-19 mortality including provisional COVID-19 death data which includes detailed data on race and ethnicity. CDC also worked with the U.S. Census Bureau on the development of the COVID Household Pulse Survey and rolled out a web-based panel survey to better understand the impact of COVID-19 on mental health, health care access, and mortality.
- CDC launched a COVID-19 module on its Environmental and Public Health Tracking Network. New COVID-19 data (e.g., number of new cases by day) can be visualized with existing data on environmental exposure, hazard, health, and location (e.g., hospitals, nursing homes) data, to provide the user with additional contextual information.
- Between February 2-November 20, 2020 MMWR published 155 COVID-19 response reports that received a tremendous amount of attention, as highlighted by their high Altmetric scores – which conveys the reach and attention of the reports. Of these reports, 58% (90/155 reports) received notable Altmetric scores of >500. Any report scoring >222 falls into the top 1%.
- In May 2020, CDC published an MMWR article highlighting an observed reduction in ordering for routine pediatric vaccines after the COVID-19 national emergency was declared. CDC developed a new vaccine ordering analysis tool that monitor routine immunization ordering data. The tool compares current ordering data to the previous three years to help awardees understand the impact of COVID-19 on routine pediatric vaccine ordering. CDC has also helped to develop county level vaccine ordering maps and analyses for each awardee to support state programs working to address decreased pediatric immunization in the setting of the pandemic.
- To address increases in malaria cases in the U.S., CDC issued new guidance to clinicians for treatment of severe malaria cases, switching to IV artesunate as the first line drug when the previous treatment was discontinued. CDC also provided support to U.S. clinicians through CDC's malaria hotline and scaled up treatment distribution through CDC quarantine stations. In 2019, CDC distributed otherwise unavailable life-saving medications for 242 ill patients with parasitic infections in the United States, most of whom (221) were suffering from severe malaria.

Eliminating Disease

- In 2020, CDC released four new recommendations to improve the prevention and control for viral hepatitis. CDC expects these recommendations to lead to expanded hepatitis C testing for all adults and particularly those front-line healthcare personnel who directly provide care, to increased hepatitis A vaccination among adults who may be at high-risk, and to reduced rates of HIV, hepatitis B, and hepatitis C infections for organ transplant recipients.
- CDC led an investigation into nearly 33,500 hepatitis A cases that were part of widespread outbreaks affecting 33 states, as of July 31, 2020. Infections are primarily occurring among people who use drugs, people who are homeless or have unstable housing, men who have sex with men, and people who are currently or were recently incarcerated. Sixty-one percent of cases have resulted in hospitalization, and 332 people have died. CDC has helped every affected state in their outbreak response efforts.

- CDC used a new metagenomic technique for the detection and discovery of tickborne pathogens and identified two bacterial species that were identified in humans for the first time. Working with partners, CDC conducted this research using advanced molecular detection (AMD) technology to sequence samples of more than 13,000 patients who were suspected of having tickborne illnesses. This success highlights the value of AMD methods to discover new bacteria associated with human illness, enhance detection and discovery of tickborne pathogens, and simplify diagnostic testing for tickborne diseases.
- CDC is providing more efficient National Immunization Survey (NIS) data collection and a means to evaluate the quality of immunization information systems (IIS) data. Over 30 jurisdictions participated in the first of a four phase plan for IIS to become the primary source of national, state, and local vaccination coverage assessment. Other achievements include funding of a pilot to transition the NIS from a cell telephone to address-based sample design with multiple response modes (phone, internet, mail), establishing annual assessments of bias in estimates from NIS, and blending medical claims data with survey data to provide weekly estimates of national and state influenza vaccination coverage to allow real-time assessment and improvement to influenza vaccination for the 2020-21 influenza season.
- With the possibility of COVID-19 and influenza circulating at the same time in the fall and winter, CDC has emphasized the importance of getting a flu vaccination during the 2020-21 flu season. In preparation, CDC has been closely monitoring anticipated flu supply with the U.S.-licensed manufacturers, acquired additional flu vaccine doses for the Vaccines for Children (VFC) program, and procured 9.35M doses of adult flu vaccine for the public sector to supplement doses awardees requested in early 2020, before the COVID-19 pandemic.
- CDC led an investigation into the nationwide outbreak of e-cigarette or vaping-associated lung injury (EVALI). CDC worked to identify the cause of EVALI and rapidly decreased the life-threatening hospitalizations among young people. CDC's laboratory developed multiple new assays applied to lung fluid from case biopsies, and in November CDC demonstrated the cause was vitamin E contaminated THC-containing vaping cartridges. As of February 2020, there were 2,807 cases or deaths reported in the U.S.
- In January 2020, in coordination with the Office of the Surgeon General, CDC released Smoking Cessation: A Report of the Surgeon General – the 34th tobacco-related Surgeon General's report published since 1964. The 2020 report is the first Surgeon General's Report to focus on cessation in over 30 years. The report summarizes the latest science on individual, health system, and population-based interventions proven to help people quit smoking. CDC developed a variety of communication products to promote the findings of the report to a variety of stakeholders and coordinated social media activities. During the month after release, the hashtag #CessationSGR was used in 206 tweets leading to over 1,300 retweets, 2,000 mentions, and 41 million impressions.
- The 2020 Tips from Former Smokers® (Tips®) aired a new round of hard-hitting ads to raise awareness about heart disease, cancer, chronic obstructive pulmonary disease and Buerger's disease. The ads also feature caregivers for a loved one living with a smoking-related disease. In 2020, more than 182,000 total calls to 1-800-QUIT-NOW have been received though the first 18 weeks of the campaign.
- Using CDC funding, the New York state (NYS) Arthritis Program implemented the Physical Activity. The Arthritis Pain Reliever. campaign in areas of NYS outside of New York city. This activity spawned a partnership with NY's Diabetes Program and the cross-leveraging of funding to implement the campaign with new CDC-designed tools featuring arthritis and pre-diabetes messages about the benefits of physical activity. The campaign, which launched July 15, 2019, resulted in more than 11,500,000 impressions and over 11,000 clicks to the NYS Arthritis website.
- CDC launched *Hear Her*, a new communication campaign that seeks to raise awareness of potentially life-threatening warning signs during and in the year after pregnancy. *Hear Her* builds on CDC's data and science, expanding existing efforts to more directly reach women and their support networks. *Hear Her* encourages the people supporting pregnant and postpartum women to really listen and take action when she expresses concerns. In the first three months of the campaign, there were over 84,000

engagements with Facebook posts and almost 200,000 page-views on the *Hear Her* website by 130,000 unique visitors.

- In December 2020, CDC launched PLACES (Population Level Analysis and Community Estimates), an expansion of the 500 Cities project, and the first-of-its kind effort to release local area health information covering the entire United States, including estimates for smaller cities and rural areas that were previously unavailable. PLACES provides estimates for 27 indicators.
- CDC developed and launched the National Diabetes Prevention Program (National DPP) Operations Center. The Operations Center supports CDC’s data modernization work and provides a single, common information hub for the National DPP to help users answer key questions and solve programmatic challenges related to the delivery of, referral to, and reimbursement for the National DPP lifestyle change program.
- CDC’s National Asthma Control Program, supported Montana in funding local health departments to implement the Montana Asthma Home Visitation Program (MAP), providing asthma self-management and trigger reduction education for children enrolled in Medicaid. Children who have completed the full six-visit series have experienced an 88% decrease in emergency department visits and an 80% decrease in missed school days due to asthma among children who have completed the full six-visit series. The program has resulted in an estimated \$2,124 savings per child, with savings due to avoided healthcare utilization sustained up to two years after completing the program.
- Iowa used CDC’s Rape Prevention and Education (RPE) funding to address issues of sexual violence among youth in the state. The University of Northern Iowa (UNI) – a RPE funding sub-recipient, is using the Mentors in Violence Prevention (MVP) Initiative model to teach young people to step in to help or speak up against inappropriate behavior and intervene to prevent violence. UNI has trained over 2,900 mentors across 40 high schools, who have gone on to facilitate the curriculum with over 21,000 high school freshmen. Across MVP schools, findings indicate that the percent of students who would do nothing in various aggressive scenarios dropped from 24% to approximately 5% from 2014-2019. Building on this success, UNI is currently supplementing this work by developing new relationships with state-level organizations such as the Iowa High School Athletic Association and the Iowa School Counselors Association to review and improve sexual violence prevention policies in these organizations as well as expand the reach of the program to more Iowa schools.
- CDC launched Surveillance for Emerging Threats to Mothers and Babies which adapts the mother-baby linked surveillance approach from the Zika outbreak to detect the impact of other known and emerging health threats during pregnancy, like hepatitis C, syphilis, and SARS-CoV-2. These data will be used to inform clinical guidelines for pregnant women and their infants.
- CDC developed clinical decision support tools on alcohol screening and brief intervention that can be integrated into electronic health records. These tools, now available online at CDS Connect, can help healthcare providers deliver alcohol screening to women of reproductive age and offer evidence-based interventions to those at risk.
- CDC’s funding for lead poisoning prevention enabled the Louisiana Healthy Homes and Childhood Lead Poisoning Prevention Program to partner with 12 Special Supplemental Nutrition Programs for Women, Infants, and Children (WIC) in four parishes to increase blood lead level (BLL) testing rates and raise blood lead poisoning prevention awareness. Through the partnership with WIC, the program has reached an additional 2,403 children and 82% were tested for lead exposure for the first time.

Ending Epidemics

- From July to December 2019, three sites funded early with FY 2019 Minority AIDS Funding have already implemented and accelerated key Ending the HIV Epidemic: A Plan for America (EHE) strategies in their communities, including implemented a care navigation and treatment program in two clinics to improve viral suppression (Baltimore City, MD), provided same-day linkage to care and treatment for those newly

diagnosed during targeted outreach testing (DeKalb County, GA), and increased the HIV testing capacity of five community-based organizations (East Baton Rouge Parish, LA).

- In 2019, CDC released their HIV Prevention Progress Report which combines national and state level indicator data for the 50 states and D.C. The report highlights differences across population subgroups (by transmission risk, race/ethnicity, age, and gender) recognizing that progress among those disproportionately affected by HIV is important for achieving national goals including improving health equity. Successes include a reduction in HIV risk behaviors among young gay, bisexual males and persons with HIV; more people have achieved viral suppression, including youth and transgender women receiving HIV medical care; and, the death rate among persons with diagnosed HIV has decreased.
- In FY 2020, more than 70,000 school staff and parent volunteers used CDC's School Health Index (SHI) Assessment Tool to improve their student's physical education and physical activity opportunities and school nutrition environment. Before and during the COVID-19 pandemic and school closures, school staff and parent/community members participating on school health teams were able to access the SHI platform on-line and receive e-training and virtual support.
- CDC launched the MATernal and Infant Network to Understand Outcomes Associated with Treatment for Opioid Use Disorder during Pregnancy (MAT-LINK) in 4 clinical sites to inform clinical practice recommendations and clinical decision-making around treatment for opioid use disorder among pregnant women.
- CDC, with the Office of National Drug Control Policy, supports the Overdose Response Strategy (ORS), an initiative designed to enhance public health-public safety collaboration and to strengthen and improve efforts to reduce drug overdoses within 21 High-Intensity Drug Trafficking Areas (HIDTAs) across 34 states. In NY for example, public health officials disseminated information to law enforcement agencies across the state through the Narcotics Intelligence Bulletin including a summary of harm reduction and public health activities being conducted to support people who use drugs during this time, factors that heighten the risk of overdose during the COVID-19 pandemic, and information about emergency expanded access to treatment and recovery services.

Other CDC Accomplishments

- CDC launched its Heat & Health Tracker - the first-of-its kind online tool to help emergency and public health planners prepare for and respond to extreme heat events. The Heat & Health Tracker provides timely, user-friendly, local-level heat and health data that can be used to inform decisions, describe and locate vulnerable populations, and determine resources and potential needs.
- As of November 2020, nationally accredited health departments serve 82% of the U.S. population. The CDC-supported Public Health Accreditation Board (PHAB) has accredited 361 health departments—36 state, 4 tribal, and 331 local health departments. Results from a June 2020 PHAB survey showed that more than 80% of health departments indicated accreditation has helped their response to the pandemic. Both CDC and PHAB have provided practical resources for aiding health departments in leveraging the connections between their accreditation and performance improvement efforts and COVID-19 response activities.
- In FY 2020, CDC's National Hospital Care Survey received the first batch of electronic health record (EHR) data through an interoperable format and secure electronic transmission. This method ensures EHR data are submitted in a standardized format and yields higher quality data while decreasing the processing time needed to prepare resulting datasets.
- CDC released its first-ever virtual reality laboratory training course, LabTrainingVR: Biosafety Cabinet Edition to offer laboratory professionals the opportunity to apply, assess, and improve their skills in a safe and controlled learning environment.
- A study of the economic benefits of research and services at CDC's National Institute for Occupational Safety and Health by RAND showed significant savings. In the case of personal dust monitors for coal

miners, RAND found that NIOSH’s work, including developing and testing prototypes with partners, and conducting outreach to miners, was substantially responsible for the adoption of continuous personal dust monitors. Annualized benefits ranged from \$3.6 million to \$8.0 million per year, starting in 2016 and extending over 65 years. NIOSH efforts with partners to improve ambulance design could have an economic impact of \$2.5-\$8 million saved annually from 2017 to 2050, with the benefits increasing over time.

- CDC enhanced its NIOSH Industry and Occupation Coding System (NIOCCS) by implementing machine learning, which increases auto-coding speed (~100x faster) and improves consistency of assigned Census industry and occupation codes. NIOCCS has become an important tool for collecting and coding job information for COVID-19 cases, helping states like Washington and Colorado inform strategies to reduce the impact of the pandemic on workers.

Agency Performance Planning and Management

CDC conducts continuous program improvement through program strategic planning, monitoring and measurement, and evaluation. CDC collects information on program priorities, measurable outcomes, strategies, and progress through annual updates. CDC conducts regular data-driven reviews as part of its strategy for assessing program performance in a set of priority areas to demonstrate accountability for the agency’s large investment areas. Additionally, CDC has developed a Performance Improvement Framework to advance a culture of performance improvement and build performance improvement capacity at all levels of the agency.

The CDC awards nearly 75% of its budget through grants, cooperative agreements, and contracts to help accomplish its mission to promote health and quality of life by preventing and controlling disease, injury, and disability. Contracts procure goods and services used directly by the agency, and grants and cooperative agreements assist other health- related and research organizations that contribute to CDC's mission through health information dissemination, preparedness, prevention, research, and surveillance. CDC cooperative agreement funding announcements require applicants to specify how they are measuring and monitoring the activities they are implementing and progress toward achieving the intended outcomes.

Agency Use of Evaluation and Evidence

CDC is a data-driven agency and incorporates use of data for decision making and to continuously improve our programs. CDC continues to focus on the development and use of evidence to enhance all aspects of the Agency’s mission. For instance, the CDC Director and Principal Deputy director regularly lead data driven reviews of each Center’s priority indicators and key programmatic areas. The intended outcome of assessing program performance in these priority areas is to show accountability for the agency’s large investment areas, understand the drivers of performance and how they are linked to measurable outcomes, share ideas and solutions informed by data, and collaboratively solve problems to continuously improve programs.

CDC is leveraging the Foundations for Evidence-Based Policymaking Act to strengthen program evaluation activities and data use for decision making across the agency. The CDC evaluation plan provides a framework for key questions and priority activities. CDC uses a prospective evidence-building approach to innovate, test, evaluate and model strategies in order to identify those that are most impactful, cost-effective, and feasible for achieving our public health goals. As additional evidence is generated, some of these questions and approaches may shift. By continuously building and assessing the evidence, CDC is better positioned to optimize our impact and strategically drive informed decisions. This prospective generation of key evidence and ongoing data evaluation is critical for data-driven policymaking.

CDC is increasing its internal capacity to oversee and conduct program evaluation by expanding and enhancing evaluation trainings available to employees through CDC University and webinars, continuing the Evaluation Fellowship Program to expand program evaluation expertise, and by implementing standard program evaluation

guidelines and recommendations. CDC has also adapted a framework to measure the impact of CDC science and gauge its scientific influence on subsequent events and actions that lead to health improvements.

Alignment to Administration Priorities and Initiatives

CDC is committed to supporting the national priorities set by the Administration. CDC leads key activities for 9 measures in the FY 2022 HHS performance plan. These include:

- improving health care quality and patient safety
- strengthening public health surveillance and epidemiology
- enhancing support of the public health infrastructure at the state, tribal, local, and territorial levels
- addressing obesity through childhood nutrition, food labeling, and physical fitness
- protecting Americans in public health emergencies
- preventing and controlling tobacco use
- mitigating and preventing infectious and chronic diseases

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ALL PURPOSE TABLE

(dollars in thousands)	FY 2020 Final	FY 2020 Supplemental Funding ¹	FY 2021 Enacted	FY 2021 Supplemental Funding	FY 2022 President's Budget	FY 2022 +/- FY 2021
Immunization and Respiratory Diseases	\$790,005	\$0	\$821,005	\$0	\$945,930	\$124,925
Budget Authority ²	\$419,705	\$0	\$448,805	\$0	\$526,580	\$77,775
ACA/PPHF	\$370,300	\$0	\$372,200	\$0	\$419,350	\$47,150
HIV/AIDS, Viral Hepatitis, STI and TB Prevention	\$1,273,556	\$0	\$1,314,056	\$0	\$1,420,556	\$106,500
Emerging and Zoonotic Infectious Diseases	\$635,772	\$0	\$648,272	\$0	\$678,272	\$30,000
Budget Authority ²	\$583,772	\$0	\$596,272	\$0	\$626,272	\$30,000
ACA/PPHF	\$52,000	\$0	\$52,000	\$0	\$52,000	\$0
Chronic Disease Prevention and Health Promotion	\$1,239,914	\$0	\$1,276,664	\$0	\$1,452,664	\$176,000
Budget Authority	\$984,964	\$0	\$1,021,714	\$0	\$1,197,714	\$176,000
ACA/PPHF	\$254,950	\$0	\$254,950	\$0	\$254,950	\$0
Birth Defects, Developmental Disabilities, Disability and Health	\$160,810	\$0	\$167,810	\$0	\$172,810	\$5,000
Environmental Health	\$213,850	\$0	\$222,850	\$0	\$332,850	\$110,000
Budget Authority	\$196,850	\$0	\$205,850	\$0	\$308,850	\$103,000
ACA/PPHF	\$17,000	\$0	\$17,000	\$0	\$17,000	\$0
PHS Evaluation Transfer	\$0	\$0	\$0	\$0	\$7,000	\$7,000
Injury Prevention and Control	\$677,379	\$0	\$682,879	\$0	\$1,103,169	\$420,290
Public Health Scientific Services²	\$578,497	\$0	\$591,997	\$0	\$741,997	\$150,000
Budget Authority	\$578,497	\$0	\$591,997	\$0	\$609,997	\$18,000
PHS Evaluation Transfer	\$0	\$0	\$0	\$0	\$132,000	\$132,000
Occupational Safety and Health	\$342,800	\$0	\$345,300	\$0	\$345,300	\$0
Global Health	\$570,843	\$0	\$592,843	\$0	\$697,843	\$105,000
Public Health Preparedness and Response²	\$827,200	\$0	\$842,200	\$0	\$842,200	\$0
Cross-Cutting Activities and Program Support	\$358,570	\$7,500,000	\$283,570	\$20,060,000	\$708,570	\$425,000
Budget Authority	\$198,570	\$7,500,000	\$123,570	\$20,060,000	\$548,570	\$425,000
ACA/PPHF	\$160,000	\$0	\$160,000	\$0	\$160,000	\$0
Buildings and Facilities	\$25,000	\$0	\$30,000	\$0	\$55,000	\$25,000
Total CDC – Budget Authority	\$6,839,946	\$7,500,000	\$6,963,296	\$20,060,000	\$8,454,861	\$1,491,565
Total CDC – BA & PHS Evaluation Transfer	\$6,839,946	\$7,500,000	\$6,963,296	\$20,060,000	\$8,593,861	\$1,630,565
CDC Program Level - BA, PPHF, & PHS Eval	\$7,694,196	\$7,500,000	\$7,819,446	\$20,060,000	\$9,497,161	\$1,677,715
Agency for Toxic Substances and Disease Registry (ATSDR)	\$76,691	\$12,500	\$78,000	\$0	\$81,750	\$3,750
Prevention and Public Health Fund (PPHF) Transfer	\$854,250	\$0	\$856,150	\$0	\$903,300	\$47,150
PHS Evaluation Transfers	\$0	\$0	\$0	\$0	\$139,000	\$139,000
Energy Employees Occupational Illness Compensation Program Act (EEOICPA) ³	\$50,597	\$0	\$50,763	\$0	\$50,763	\$0
World Trade Center (Mandatory) ⁴	\$491,440	\$0	\$550,526	\$0	\$641,485	\$90,959
Vaccines for Children ⁵	\$4,577,756	\$0	\$5,468,105	\$0	\$5,139,998	(\$328,107)
Other User Fees	\$2,226	\$0	\$2,226	\$0	\$2,226	\$0
Total CDC/ATSDR	\$12,892,906	\$7,512,500	\$13,969,066	\$20,060,000	\$15,413,383	\$1,444,317
Nonrecurring Expenses Fund (NEF) Transfer	\$225,000	\$0	\$14,000	\$0	N/A	N/A

¹ Includes appropriations and required transfers to CDC. Excludes \$10.250 billion in permissive transfers or allotments from the Public Health and Social Services Emergency Fund to CDC.

² FY 2020 Final Level is comparably adjusted to reflect Congressionally accepted budget alignments between accounts.

³ FY 2020 – FY 2022 levels reflect post sequester amount.

⁴ Reflects Federal share estimated obligations only; NYC share estimated obligations are not included.

⁵ FY 2021 and FY 2022 estimates reflect anticipated transfers from Medicaid.

BUDGET EXHIBITS

APPROPRIATIONS LANGUAGE

CENTERS FOR DISEASE CONTROL AND PREVENTION

IMMUNIZATION AND RESPIRATORY DISEASES

For carrying out titles II, III, XVII, and XXI, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to immunization and respiratory diseases, [**\$448,805,000**] *\$526,580,000*.

HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED DISEASES, AND TUBERCULOSIS PREVENTION

For carrying out titles II, III, XVII, and XXIII of the PHS Act with respect to HIV/AIDS, viral hepatitis, sexually transmitted diseases, and tuberculosis prevention, [**\$1,314,056,000**] *\$1,420,556,000*.

EMERGING AND ZONOTIC INFECTIOUS DISEASES

For carrying out titles II, III and XVII, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to emerging and zoonotic infectious diseases, [**\$596,272,000**] *\$626,272,000: Provided*, That of the amounts made available under this heading, up to \$1,000,000 shall remain available until expended to pay for the transportation, medical care, treatment, and other related costs of persons quarantined or isolated under Federal or State quarantine law.

CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

For carrying out titles II, III, XI, XV, XVII, and XIX of the PHS Act with respect to chronic disease prevention and health promotion, [**\$1,021,714,000**] *\$1,197,714,000: Provided*, That funds made available under this heading may be available for making grants under section 1509 of the PHS Act for not less than 21 States, tribes, or tribal organizations: *Provided further*, That of the funds made available under this heading, \$15,000,000 shall be available to continue and expand community specific extension and outreach programs to combat obesity in counties with the highest levels of obesity: *Provided further*, That the proportional funding requirements under section 1503(a) of the PHS Act shall not apply to funds made available under this heading.

BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

For carrying out titles II, III, XI, and XVII of the PHS Act with respect to birth defects, developmental disabilities, disabilities, and health, [**\$167,810,000**] *\$172,810,000*.

PUBLIC HEALTH SCIENTIFIC SERVICES

For carrying out titles II, III, and XVII, of the PHS Act with respect to health statistics, surveillance, health informatics, and workforce development, [**\$591,997,000**] *\$609,997,000: Provided*, *That in addition to amounts provided herein, \$132,000,000 is available to this appropriation, for the purposes under this heading, from amounts provided pursuant to section 241 of the PHS Act.*

ENVIRONMENTAL HEALTH

For carrying out titles II, III, and XVII of the PHS Act with respect to environmental health, [**\$205,850,000**] *\$308,850,000: Provided*, *That of amounts appropriated under this heading, \$3,000,000 may-remain available until expended for carrying out the Vessel Sanitation Program, to the extent that user fee collections are insufficient: Provided further*, *That in addition to the amounts provided herein, \$7,000,000 is available to this appropriation, for the purposes under this heading, from amounts pursuant to section 241 of the PHS Act.*

INJURY PREVENTION AND CONTROL

For carrying out titles II, III, and XVII of the PHS Act with respect to injury prevention and control, [**\$682,879,000**] *\$1,103,169,000*.

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

For carrying out titles II, III, and XVII of the PHS Act, sections 101, 102, 103, 201, 202, 203, 301, and 501 of the Federal Mine Safety and Health Act, section 13 of the Mine Improvement and New Emergency Response Act, and sections 20, 21, and 22 of the Occupational Safety and Health Act, with respect to occupational safety and health, \$345,300,000.

ENERGY EMPLOYEES OCCUPATIONAL ILLNESS COMPENSATION PROGRAM

For necessary expenses to administer the Energy Employees Occupational Illness Compensation Program Act, \$55,358,000, to remain available until expended: *Provided*, That this amount shall be available consistent with the provision regarding administrative expenses in section 151(b) of division B, title I of Public Law 106–554.

GLOBAL HEALTH

For carrying out titles II, III, and XVII of the PHS Act with respect to global health, [~~\$592,843,000~~] ~~\$697,843,000~~, of which: (1) \$128,421,000 shall remain available through September 30, [2022] 2023 for international HIV/AIDS; and (2) [~~\$193,400,000~~] ~~\$303,200,000~~ shall remain available through September 30, [2023] 2024 for global [disease detection and emergency response] *public health protection: Provided*, That funds may be used for purchase and insurance of official motor vehicles in foreign countries.

PUBLIC HEALTH PREPAREDNESS AND RESPONSE

For carrying out titles II, III, and XVII of the PHS Act with respect to public health preparedness and response, and for expenses necessary to support activities related to countering potential biological, nuclear, radiological, and chemical threats to civilian populations, ~~\$842,200,000~~ [*Provided*, That the Director of the Centers for Disease Control and Prevention (referred to in this title as “CDC”) or the Administrator of the Agency for Toxic Substances and Disease Registry may detail staff without reimbursement to support an activation of the CDC Emergency Operations Center, so long as the Director or Administrator, as applicable, provides a notice to the Committees on Appropriations of the House of Representatives and the Senate within 15 days of the use of this authority and a full report within 30 days after use of this authority which includes the number of staff and funding level broken down by the originating center and number of days detailed, and an update of such report every 180 days until staff are no longer on detail without reimbursement to the CDC Emergency Operations Center].

BUILDINGS AND FACILITIES

For *any cost related to the* acquisition of real property, equipment, construction, installation, demolition, and renovation of facilities, [~~\$30,000,000~~] ~~\$55,000,000~~, which shall remain available until September 30, [2025] 2026. *Provided*, That funds made available to this account in this or any prior Act that are available for the acquisition of real property or for construction or improvement of facilities shall be available to make improvements on non-federally owned property, provided that any improvements that are not adjacent to federally owned property do not exceed \$2,500,000, and that the primary benefit of such improvements accrues to CDC: *Provided further*, That funds previously set-aside by CDC for repair and upgrade of the Lake Lynn Experimental Mine and Laboratory shall be used to acquire a replacement mine safety research facility: *Provided further*, That in addition, the prior year unobligated balance of any amounts assigned to former employees in accounts of CDC made available for Individual Learning Accounts shall be credited to and merged with the amounts made available under this heading to support the replacement of the mine safety research facility.

CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

For carrying out titles II, III, XVII and XIX, and section 2821 of the PHS Act and for cross-cutting activities and program support for activities funded in other appropriations included in this Act for the Centers for Disease Control and Prevention, [~~\$123,570,000~~] ~~\$548,570,000~~ of which ~~\$400,000,000~~ shall remain available through September 30, 2023 for *public health infrastructure and capacity: Provided*, That paragraphs (1) through (3) of subsection (b) of section 2821 of the PHS Act shall not apply to funds appropriated under this heading and in all

other accounts of the CDC: *Provided further*, That of the amounts made available under this heading, [\$10,000,000] \$35,000,000 to remain available until expended, shall be available to the Director of the CDC for deposit in the Infectious Diseases Rapid Response Reserve Fund established by section 231 of division B of Public Law 115–245: *Provided further*, That funds appropriated under this heading may be used to support a contract for the operation and maintenance of an aircraft in direct support of activities throughout CDC to ensure the agency is prepared to address public health preparedness emergencies: *Provided further*, That any amounts made available by this Act to the Centers for Disease Control and Prevention may be used to support the salaries and expenses of any CDC employee or fellow responding to an emergency or other urgent public health crisis: *Provided further*, That employees of CDC or the Public Health Service, both civilian and commissioned officers, detailed to States, municipalities, or other organizations under authority of section 214 of the PHS Act, or in overseas assignments, shall be treated as non-Federal employees for reporting purposes only and shall not be included within any personnel ceiling applicable to the Agency, Service, or HHS during the period of detail or assignment: *Provided further*, That CDC may use up to \$10,000 from amounts appropriated to CDC in this Act for official reception and representation expenses when specifically approved by the Director of CDC: *Provided further*, That in addition, such sums as may be derived from authorized user fees, which shall be credited to the appropriation charged with the cost thereof: *Provided further*, That with respect to the previous proviso, authorized user fees from the Vessel Sanitation Program and the Respirator Certification Program shall be available through September 30, [2022] 2023.

CDC-RELATED HHS GENERAL PROVISIONS

Sec. [212] 210. In order for HHS to carry out international health activities, including HIV/AIDS and other infectious disease, chronic and environmental disease, and other health activities abroad during fiscal year [2021] 2022:

(1) The Secretary may exercise authority equivalent to that available to the Secretary of State in section 2(c) of the State Department Basic Authorities Act of 1956. The Secretary shall consult with the Secretary of State and relevant Chief of Mission to ensure that the authority provided in this section is exercised in a manner consistent with section 207 of the Foreign Service Act of 1980 and other applicable statutes administered by the Department of State.

(2) The Secretary is authorized to provide such funds by advance or reimbursement to the Secretary of State as may be necessary to pay the costs of acquisition, lease, alteration, renovation, and management of facilities outside of the United States for the use of HHS. The Department of State shall cooperate fully with the Secretary to ensure that HHS has secure, safe, functional facilities that comply with applicable regulation governing location, setback, and other facilities requirements and serve the purposes established by this Act. The Secretary is authorized, in consultation with the Secretary of State, through grant or cooperative agreement, to make available to public or nonprofit private institutions or agencies in participating foreign countries, funds to acquire, lease, alter, or renovate facilities in those countries as necessary to conduct programs of assistance for international health activities, including activities relating to HIV/AIDS and other infectious diseases, chronic and environmental diseases, and other health activities abroad.

(3) The Secretary is authorized to provide to personnel appointed or assigned by the Secretary to serve abroad, allowances and benefits similar to those provided under chapter 9 of title I of the Foreign Service Act of 1980, and 22 U.S.C. 4081 through 4086 and subject to such regulations prescribed by the Secretary. The Secretary is further authorized to provide locality-based comparability payments (stated as a percentage) up to the amount of the locality-based comparability payment (stated as a percentage) that would be payable to such personnel under section 5304 of title 5, United States Code if such personnel’s official duty station were in the District of Columbia. Leaves of absence for personnel under this subsection shall be on the same basis as that provided under subchapter I of chapter 63 of title 5, United States Code, or section 903 of the Foreign Service Act of 1980, to individuals serving in the Foreign Service.

Sec. [230] 219. Funds appropriated in this Act that are available for salaries and expenses of employees of the Department of Health and Human Services shall also be available to pay travel and related expenses of such an employee or of a member of his or her family, when such employee is assigned to duty, in the United States or in a U.S. territory, during a period and in a location that are the subject of a determination of a public health emergency under section 319 of the Public Health Service Act and such travel is necessary to obtain medical care for an illness, injury, or medical condition that cannot be adequately addressed in that location at that time. For the purposes of this section, the term “U.S. territory” means Guam, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, American Samoa, or the Trust Territory of the Pacific Islands.

SEC. [229] 224. Funds appropriated in this Act that are available for salaries and expenses of employees of the Centers for Disease Control and Prevention shall also be available for the primary and secondary schooling of eligible dependents of personnel stationed in a U.S. territory as defined in section 229 of this Act at costs not in excess of those paid for or reimbursed by the Department of Defense.

[SEC.239 (a) The Chamblee Research Support Building (Building 108) at the Centers for Disease Control and Prevention is hereby renamed the Johnny Isakson Public Health Research Building (b) Section 238 of P.L. 116-260 is amended by inserting “during the period of availability of the Fund” after “shall be available” and by inserting “moving expenses” after “renovation of facilities,”.]

SEC. 231. The unobligated balances of amounts appropriated or transferred to the Centers for Disease Control and Prevention under the heading “Buildings and Facilities” in title II of division H of the Consolidated Appropriations Act, 2018 (Public Law 115–141) for a biosafety level 4 laboratory shall also be available for the acquisition of real property, equipment, construction, demolition, renovation of facilities, and installation expenses, including moving expenses, related to such laboratory: Provided, That no later than September 30, 2022, the remaining unobligated balances of such funds are hereby permanently cancelled, and an amount of additional new budget authority equivalent to the amount cancelled is hereby appropriated, to remain available until expended, for the same purposes as provided in this section, in addition to any other amounts available for such purposes.

SEC. 234. (a) PREMIUM PAY AUTHORITY. If services performed by a Department of Health and Human Services employee during a public health emergency declared under section 319 of the Public Health Service Act are determined by the Secretary of Health and Human Services to be primarily related to preparation for, prevention of, or response to such public health emergency, any premium pay that is provided for such services shall be exempted from the aggregate of basic pay and premium pay calculated under section 5547(a) of title 5, United States Code, and any other provision of law limiting the aggregate amount of premium pay payable on a biweekly or calendar year basis.

(b) OVERTIME AUTHORITY. Any overtime that is provided for such services described in subsection (a) shall be exempted from any annual limit on the amount of overtime payable in a calendar or fiscal year.

(c) APPLICABILITY OF AGGREGATE LIMITATION ON PAY. In determining, for purposes of section 5307 of title 5, United States Code, whether an employee's total pay exceeds the annual rate payable under such section, the Secretary of Health and Human Services shall not include pay exempted under this section.

(d) LIMITATION OF PAY AUTHORITY. Pay exempted from otherwise applicable limits under subsection (a) shall not cause the aggregate pay earned for the calendar year in which the exempted pay is earned to exceed the rate of basic pay payable for a position at level II of the Executive Schedule under section 5313 of title 5, United States Code.

(e) DANGER PAY FOR SERVICE IN PUBLIC HEALTH EMERGENCIES. The Secretary of Health and Human Services may grant a danger pay allowance under section 5928 of title 5, United States Code, without regard to the conditions of the first sentence of such section, for work that is performed by a Department of Health and Human Services employee during a public health emergency declared under section 319 of the Public Health Service Act that the Secretary determines is primarily related to preparation for, prevention of, or response to such public health emergency and is performed under conditions that threaten physical harm or imminent danger to the health or well-being of the employee.

(f) EFFECTIVE DATE. This section shall take effect as if enacted on September 30, 2020.

APPROPRIATIONS LANGUAGE ANALYSIS

Language Provision	Explanation
IMMUNIZATION AND RESPIRATORY DISEASES	
For carrying out titles II, III, XVII, and XXI, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to immunization and respiratory diseases, [\$448,805,000] \$526,580,000.	Appropriates funding to support activities related to immunization and respiratory diseases.
HIV/AIDS, VIRAL HEPATITIS, SEXUALLY-TRANSMITTED INFECTIONS, AND TUBERCULOSIS	
For carrying out titles II, III, XVII, and XXIII of the PHS Act with respect to HIV/AIDS, viral hepatitis, sexually transmitted diseases, and tuberculosis prevention, [\$1,314,056,000] \$1,420,556,000.	Appropriates funding to support activities related to HIV/AIDS, viral hepatitis, sexually transmitted diseases, and tuberculosis prevention.
EMERGING AND ZONOTIC INFECTIOUS DISEASES	
For carrying out titles II, III and XVII, and section 2821 of the PHS Act, titles II and IV of the Immigration and Nationality Act, and section 501 of the Refugee Education Assistance Act, with respect to emerging and zoonotic infectious diseases, [\$596,272,000] \$626,272,000:	Appropriates funding for activities related to emerging and zoonotic infectious diseases.
<i>Provided</i> , that of the amounts made available under this heading, up to \$1,000,000 shall remain available until expended to pay for the transportation, medical care, treatment, and other related costs of persons quarantined or isolated under Federal or State quarantine law.	The availability of \$1,000,000, as an initial set-aside, until expended, to address state and local expenditures for federal isolation orders. To ensure prompt and effective isolation when necessary, CDC has Memorandums of Agreement with 182 hospitals for transportation, evaluation, diagnosis, care, and treatment of travelers who pose a significant risk to public health. Cases are extremely variable in terms of frequency and cost (from \$2,000 to over \$500,000 per case).
CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION	
For carrying out titles II, III, XI, XV, XVII, and XIX of the PHS Act with respect to chronic disease prevention and health promotion, [\$1,021,714,000] \$1,197,714,000: <i>Provided</i> , That funds made available under this heading may be available for making grants under section 1509 of the PHS Act for not less than 21 States, tribes, or tribal organizations:	Appropriates funding for activities related to chronic disease prevention and health promotion.
<i>Provided further</i> , That of the funds made available under this heading, \$15,000,000 shall be available to continue and expand community specific extension	Appropriates funding for activities to address obesity in counties with the highest levels of obesity.

Language Provision	Explanation
<p>and outreach programs to combat obesity in counties with the highest levels of obesity: <i>Provided further, That the proportional funding requirements under section 1503(a) of the PHS Act shall not apply to funds made available under this heading.</i></p>	<p>Creates a permissive override of limits in the authorization on the number of States that can receive funds for a WISEWOMAN program.</p>
BIRTH DEFECTS AND DEVELOPMENTAL DISABILITIES	
<p>For carrying out titles II, III, XI, and XVII of the PHS Act with respect to birth defects, developmental disabilities, disabilities, and health, [\$167,810,000] <i>\$172,810,000.</i></p>	<p>Appropriates funding for activities related to birth defects, developmental disabilities, and disabilities and health.</p>
PUBLIC HEALTH SCIENTIFIC SERVICES	
<p>For carrying out titles II, III, and XVII, of the PHS Act with respect to health statistics, surveillance, health informatics, and workforce development, [\$591,997,000] <i>\$609,997,000:</i></p>	<p>Appropriates funding for public health scientific services.</p>
<p><i>Provided, That in addition to amounts provided herein, \$132,000,000 is available to this appropriation, for the purposes under this heading, from amounts provided pursuant to section 241 of the PHS Act.</i></p>	<p>Language reflects additional amounts from PHS Evaluation resources to Public Health Scientific Services.</p>
ENVIRONMENTAL HEALTH	
<p>For carrying out titles II, III, and XVII of the PHS Act with respect to environmental health, [\$205,850,000] <i>\$308,850,000:</i></p>	<p>Appropriates funding for activities related to environmental health.</p>
<p><i>Provided, That of amounts appropriated under this heading, \$3,000,000 may remain available until expended for carrying out the Vessel Sanitation Program, to the extent that user fee collections are insufficient:</i></p>	<p>Specifies funding to support operation of the Vessel Sanitation Program in the case that user fees cannot be collected.</p>
<p><i>Provided further, That in addition to amounts provided herein, \$7,000,000 is available to this appropriation, for the purposes under this heading, from amounts provided pursuant to section 241 of the PHS Act.</i></p>	<p>Language reflects made available from PHS Evaluation resources to Environmental Health.</p>
INJURY PREVENTION AND CONTROL	
<p>For carrying out titles II, III, and XVII of the PHS Act with respect to injury prevention and control, [\$682,879,000] <i>\$1,103,169,000.</i></p>	<p>Appropriates funding for activities related to injury prevention and control.</p>

Language Provision	Explanation
NIOSH	
For carrying out titles II, III, and XVII of the PHS Act, sections 101, 102, 103, 201, 202, 203, 301, and 501 of the Federal Mine Safety and Health Act, section 13 of the Mine Improvement and New Emergency Response Act, and sections 20, 21, and 22 of the Occupational Safety and Health Act, with respect to occupational safety and health, \$345,300,000.	Appropriates funding for activities related to occupational safety and health.
ENERGY EMPLOYEES OCCUPATIONAL ILLNESS COMPENSATION PROGRAM	
For necessary expenses to administer the Energy Employees Occupational Illness Compensation Program Act, \$55,358,000, to remain available until expended: <i>Provided</i> , That this amount shall be available consistent with the provision regarding administrative expenses in section 151(b) of division B, title I of Public Law 106–554.	Appropriates funding for the Energy Employees Occupational Illness Compensation Program Act.
GLOBAL HEALTH	
For carrying out titles II, III, and XVII of the PHS Act with respect to global health, [\$592,843,000] \$697,843,000 ,	Appropriates funding for activities related to global health.
of which: (1) \$128,421,000 shall remain available through September 30, [2022] 2023 for international HIV/AIDS; and	Specifies an amount of funding available through the end of FY 2023 to support activities related to international HIV/AIDS.
(2) [\$193,400,000] \$303,200,000 shall remain available through September 30, [2023] 2024 for global <i>public health protection</i> :	Specifies an amount of funding available through the end of FY 2024 to support global public health protection activities
<i>Provided</i> , That funds may be used for purchase and insurance of official motor vehicles in foreign countries.	Permits the funds appropriated in this provision to be used for insuring official motor vehicles in foreign countries.
PUBLIC HEALTH PREPAREDNESS AND RESPONSE	
For carrying out titles II, III, and XVII of the PHS Act with respect to public health preparedness and response, and for expenses necessary to support activities related to countering potential biological, nuclear, radiological, and chemical threats to civilian populations, \$842,200,000 :	Appropriates funding to support activities related to public health preparedness and response.
[: <i>Provided</i> , That the Director of the Centers for Disease Control and Prevention (referred to in this title as “CDC”) or the Administrator of the Agency for Toxic Substances and Disease Registry may detail staff without reimbursement to support an activation of the CDC Emergency Operations Center, so long as	CDC has proposed new authority to deploy or otherwise utilize CDC staff for emergency responses. This authority would be used instead of current authority to detail staff for a specific period of time, and is requested in the CDC-wide account. Authority

Language Provision	Explanation
<p>the Director or Administrator, as applicable, provides a notice to the Committees on Appropriations of the House of Representatives and the Senate within 15 days of the use of this authority and a full report within 30 days after use of this authority which includes the number of staff and funding level broken down by the originating center and number of days detailed, and an update of such report every 180 days until staff are no longer on detail without reimbursement to the CDC Emergency Operations Center:].</p>	<p>to support a contract for aircraft operations has also been moved to the CDC-wide account.</p>
BUILDINGS AND FACILITIES	
<p>For <i>any cost related to the</i> acquisition of real property, equipment, construction, installation, demolition, and renovation of facilities, [\$30,000,000] \$55,000,000, which shall remain available until September 30, [2025] 2026.</p>	<p>Appropriates funding to support buildings and facilities, specifying availability through the end of FY 2026.</p>
<p><i>Provided</i>, That funds made available to this account in this or any prior Act that are available for the acquisition of real property or for construction or improvement of facilities shall be available to make improvements on non-federally owned property, provided that any improvements that are not adjacent to federally owned property do not exceed \$2,500,000, and that the primary benefit of such improvements accrues to CDC: <i>Provided further</i>, That funds previously set-aside by CDC for repair and upgrade of the Lake Lynn Experimental Mine and Laboratory shall be used to acquire a replacement mine safety research facility: <i>Provided further</i>, That in addition, the prior year unobligated balance of any amounts assigned to former employees in accounts of CDC made available for Individual Learning Accounts shall be credited to and merged with the amounts made available under this heading to support the replacement of the mine safety research facility.</p>	<p>Provides funding, capped at \$2,500,000, for improvements on non-federally owned property when the primary benefit accrues to CDC. Continues Congressional proposal to replace mine safety research facility.</p>
CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT	
<p>For carrying out titles II, III, XVII and XIX, and section 2821 of the PHS Act and for cross-cutting activities and program support for activities funded in other appropriations included in this Act for the Centers for Disease Control and Prevention, [\$123,570,000] \$548,570,000</p>	<p>Appropriates funding to support CDC-wide activities and program support.</p>

Language Provision	Explanation
<i>of which \$400,000,000 is available through September 30, 2023 for public health infrastructure and capacity:</i>	Provides flexible funding for the new Public Health Infrastructure and Capacity PPA.
<i>Provided, That paragraphs (1) through (3) of subsection (b) of section 2821 of the PHS Act shall not apply to funds appropriated under this heading and in all other accounts of the CDC: Provided further, That of the amounts made available under this heading, [\$10,000,000] \$35,000,000 to remain available until expended, shall be available to the Director of the CDC for deposit in the Infectious Diseases Rapid Response Reserve Fund established by section 231 of division B of Public Law 115–245: Provided further, That funds appropriated under this heading may be used to support a contract for the operation and maintenance of an aircraft in direct support of activities throughout CDC to ensure the agency is prepared to address public health preparedness emergencies:</i>	<p>This language provides CDC with the authority to transfer funds available under this heading to the Infectious Diseases Rapid Response Reserve Fund.</p> <p>Authority to support a contract for aircraft operations has been moved here from the Preparedness and Response account, to provide CDC flexibility in execution in times of emergency.</p>
<i>Provided further, That any amounts made available by this Act to the Centers for Disease Control and Prevention may be used to support the salaries and expenses of any CDC employee or fellow responding to an emergency or other urgent public health crisis:</i>	CDC has proposed new authority to allow the agency to use funds appropriated to any CDC accounts to support staff who are engaged in a response to an emergency or other urgent public health crisis, including deployments to the field through the Emergency Operations Center. This authority would be used instead of authority to detail people to the Emergency Operations Center for a specific period of time. Authority to detail CDC staff to the emergency operations center was previously included in the Preparedness and Response account.
<i>Provided further, That employees of CDC or the Public Health Service, both civilian and commissioned officers, detailed to States, municipalities, or other organizations under authority of section 214 of the PHS Act, or in overseas assignments, shall be treated as non-Federal employees for reporting purposes only and shall not be included within any personnel ceiling applicable to the Agency, Service, or HHS during the period of detail or assignment:</i>	CDC and PHS employees detailed to other organizations are to be treated as non-Federal employees for reporting purposes and are not included within any personnel ceiling.
<i>Provided further, That CDC may use up to \$10,000 from amounts appropriated to CDC in this Act for</i>	Specifies \$10,000 of funds appropriated to CDC for official reception and representation expenses approved by the CDC Director.

Language Provision	Explanation
official reception and representation expenses when specifically approved by the Director of CDC:	
<i>Provided further</i> , That in addition, such sums as may be derived from authorized user fees, which shall be credited to the appropriation charged with the cost thereof:	
<i>Provided further</i> , That with respect to the previous proviso, authorized user fees from the Vessel Sanitation Program and the Respirator Certification Program shall be available through September 30, [2022] 2023.	Indicates that user fees are credited to the CDC appropriation account. Extends the availability of funds through 2024.
CDC-RELATED GENERAL PROVISIONS	
<p>Sec. [212] 210. In order for HHS to carry out international health activities, including HIV/AIDS and other infectious disease, chronic and environmental disease, and other health activities abroad during fiscal year [2021] 2022:</p> <p>(1) The Secretary may exercise authority equivalent to that available to the Secretary of State in section 2(c) of the State Department Basic Authorities Act of 1956. The Secretary shall consult with the Secretary of State and relevant Chief of Mission to ensure that the authority provided in this section is exercised in a manner consistent with section 207 of the Foreign Service Act of 1980 and other applicable statutes administered by the Department of State.</p> <p>(2) The Secretary is authorized to provide such funds by advance or reimbursement to the Secretary of State as may be necessary to pay the costs of acquisition, lease, alteration, renovation, and management of facilities outside of the United States for the use of HHS. The Department of State shall cooperate fully with the Secretary to ensure that HHS has secure, safe, functional facilities that comply with applicable regulation governing location, setback, and other facilities requirements and serve the purposes established by this Act. The Secretary is authorized, in consultation with the Secretary of State, through grant or cooperative agreement, to make available to public or nonprofit private institutions or agencies in participating foreign countries, funds to acquire, lease, alter, or renovate facilities in those countries as necessary to conduct</p>	The date change updates a FY 2021 provision so that it applies in FY 2022.

Language Provision	Explanation
<p>programs of assistance for international health activities, including activities relating to HIV/AIDS and other infectious diseases, chronic and environmental diseases, and other health activities abroad.</p> <p>(3) The Secretary is authorized to provide to personnel appointed or assigned by the Secretary to serve abroad, allowances and benefits similar to those provided under chapter 9 of title I of the Foreign Service Act of 1980, and 22 U.S.C. 4081 through 4086 and subject to such regulations prescribed by the Secretary. The Secretary is further authorized to provide locality-based comparability payments (stated as a percentage) up to the amount of the locality-based comparability payment (stated as a percentage) that would be payable to such personnel under section 5304 of title 5, United States Code if such personnel’s official duty station were in the District of Columbia. Leaves of absence for personnel under this subsection shall be on the same basis as that provided under subchapter I of chapter 63 of title 5, United States Code, or section 903 of the Foreign Service Act of 1980, to individuals serving in the Foreign Service.</p>	
<p>Sec. [230] 219. Funds appropriated in this Act that are available for salaries and expenses of employees of the Department of Health and Human Services shall also be available to pay travel and related expenses of such an employee or of a member of his or her family, when such employee is assigned to duty, in the United States or in a U.S. territory, during a period and in a location that are the subject of a determination of a public health emergency under section 319 of the Public Health Service Act and such travel is necessary to obtain medical care for an illness, injury, or medical condition that cannot be adequately addressed in that location at that time. For the purposes of this section, the term “U.S. territory” means Guam, the Commonwealth of Puerto Rico, the Northern Mariana Islands, the Virgin Islands, American Samoa, or the Trust Territory of the Pacific Islands.</p>	<p>This provision allows CDC to Medivac its employees or their family members for medical care under certain circumstances, if needed.</p> <p>This provision may also be relevant to other HHS OpDivs.</p>
<p>SEC. [229] 224. Funds appropriated in this Act that are available for salaries and expenses of employees of the Centers for Disease Control and Prevention</p>	<p>This language allows CDC to reimburse private schools for tuition costs for dependents of CDC employees.</p>

Language Provision	Explanation
<p>shall also be available for the primary and secondary schooling of eligible dependents of personnel stationed in a U.S. territory as defined in section 229 of this Act at costs not in excess of those paid for or reimbursed by the Department of Defense.</p>	<p>Historically, CDC’s Dengue Branch has had an Interagency Agreement with Department of Defense to send dependents to the base school. This is costly, and also does not provide bilingual instruction at the level needed for families that plan to stay in Puerto Rico long-term. This authority now allows CDC to provide that benefit to employees, and saves money when compared to DOD schools.</p>
<p>[SEC. 239 (a) The Chamblee Research Support Building (Building 108) at the Centers for Disease Control and Prevention is hereby renamed the Johnny Isakson Public Health Research Building (b) Section 238 of P.L. 116-260 is amended by inserting “during the period of availability of the Fund” after “shall be available” and by inserting “moving expenses” after “renovation of facilities,”.]</p>	<p>Language included in FY 2021 appropriations.</p>
<p><i>SEC. 231. The unobligated balances of amounts appropriated or transferred to the Centers for Disease Control and Prevention under the heading "Buildings and Facilities" in title II of division H of the Consolidated Appropriations Act, 2018 (Public Law 115–141) for a biosafety level 4 laboratory shall also be available for the acquisition of real property, equipment, construction, demolition, renovation of facilities, and installation expenses, including moving expenses, related to such laboratory: Provided, That no later than September 30, 2022, the remaining unobligated balances of such funds are hereby permanently cancelled, and an amount of additional new budget authority equivalent to the amount cancelled is hereby appropriated, to remain available until expended, for the same purposes as provided in this section, in addition to any other amounts available for such purposes.</i></p>	<p>Appropriated funds would remain available until expended for certain types of expenses related to the completion of the high containment continuity laboratory project.</p>
<p><i>SEC. 234. (a) PREMIUM PAY AUTHORITY.— If services performed by a Department employee during a public health emergency declared under section 319 of the Public Health Service Act are determined by the Secretary of Health and Human Services to be primarily related to preparation for, prevention of, or response to such a public health emergency, any premium pay that is provided for such services shall be exempted from the aggregate of basic pay and premium pay calculated under section 5547(a) of title</i></p>	<p>This provision would provide certain administrative flexibilities, to be available during a public health emergency declared under section 319 of the PHS Act. Specifically:</p> <ul style="list-style-type: none"> • Overtime Pay Cap Waiver: Authority to allow senior response leadership, including the incident management staff, and subject matter experts to accrue overtime during a public health response that will be

Language Provision	Explanation
<p><i>5, United States Code, and any other provision of law limiting the aggregate amount of premium pay payable on a biweekly or calendar year basis.</i></p> <p><i>(b) OVERTIME AUTHORITY.—Any overtime that is provided for such services described in subsection (a) shall be exempted from any annual limit on the amount of overtime payable in a calendar or fiscal year.</i></p> <p><i>(c) APPLICABILITY OF AGGREGATE LIMITATION ON PAY.—In determining, for purposes of section 5307 of title 5, United States Code, whether an employee’s total pay exceeds the annual rate payable under such section, the Secretary of Health and Human Services shall not include pay exempted under this section.</i></p> <p><i>(d) LIMITATION OF PAY AUTHORITY.—Pay exempted from otherwise applicable limits under subsection (a) shall not cause the aggregate pay earned for the calendar year in which the exempted pay is earned to exceed the rate of basic pay payable for a position at level II of the Executive Schedule.</i></p> <p><i>(e) DANGER PAY FOR SERVICE IN PUBLIC HEALTH EMERGENCIES — The Secretary of Health and Human Services may grant a danger pay allowance under section 5928 of title 5 of the United States Code, without regard to the limitations in the first sentence of such section, for work that is performed [in a foreign area] by a Department employee during a public health emergency declared under section 319 of the Public Health Service Act and that the Secretary determines is primarily related to preparation for, prevention of, or response to such a public health emergency and is performed under conditions that threaten physical harm or imminent danger to the health or well-being of the employee.</i></p> <p><i>(f) EFFECTIVE DATE.—This section shall take effect as if enacted on September 30, 2020.</i></p>	<p>disregarded in applying the statutory pay cap on aggregate of basic pay and premium pay.</p> <ul style="list-style-type: none"> • Danger Pay for Service in Public Health Emergencies: Authority to allow HHS to provide danger pay to any employee who is serving in an area deemed to threaten physical harm or imminent danger to the health and well-being of the employee

AMOUNTS AVAILABLE FOR OBLIGATION ¹

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Discretionary Appropriation:			
Enacted	\$6,839,946,000	\$6,963,296,000	\$8,454,993,000
Permissive Transfer	\$0	\$0	\$0
Reprogramming	\$0	\$0	\$0
ATB Rescission	N/A	N/A	N/A
Subtotal, adjusted Appropriation	\$6,839,946,000	\$6,963,296,000	\$8,454,993,000
Mandatory and Other Appropriations:			
Transfers from Other Accounts ²	\$854,250,000	\$856,150,000	\$903,300,000
Receipts from User Fees	\$2,226,000	\$2,226,000	\$2,226,000
Receipts from CRADA ³	\$231,982	\$231,982	\$231,982
Receipts from Royalties ³	\$1,355,541	\$1,355,541	\$1,355,541
Appropriation (EEOICPA)	\$50,597,000	\$50,763,000	\$55,358,000
Subtotal, adjusted Mandatory and Other Appropriations	\$908,660,522	\$910,726,522	\$962,471,522
Recovery of prior year Obligations	\$44,513,237	\$0	\$0
Unobligated balance start of year	\$735,874,958	\$1,872,626,527	\$2,139,974,776
Unobligated balance expiring	\$7,822,821	\$0	\$0
Unobligated balance end of year	(\$1,872,626,527)	(\$2,139,974,776)	(\$2,529,651,328)
Total Obligations	\$6,664,191,011	\$7,606,674,274	\$9,019,887,321

¹ Excludes Vaccines for Children, World Trade Center Health Program, COVID-19 Supplemental, and Zika Preparedness and Response funds.

² Reflects transfer from Prevention and Public Health Fund (PPHF).

³ FY 2020 amount represents actual collections. FY 2021 and FY 2022 amounts are estimates assuming level receipts; the actuals may vary.

SUMMARY OF CHANGES

	Dollars	FTEs
FY 2021 Enacted (Discretionary Program Level)	\$7,819,446	11,921
FY 2022 President's Budget (Discretionary Program Level)	\$9,497,161	12,456
Net Change	\$1,677,715	535

(dollars in thousands)	FY 2021 FTE	FY 2021 Enacted	FTE Change	FY 2022 +/- FY 2021
Increases:				
Immunization and Respiratory Diseases				
Immunization and Other Respiratory Diseases	---	\$613,647	---	\$99,925
Influenza/Influenza Planning and Response	---	\$201,358	---	\$25,000
HIV/AIDS, Viral Hepatitis, STI and TB Prevention				
Ending HIV/AIDS Initiative	---	\$175,000	---	\$100,000
Infectious Diseases and the Opioid Epidemic	---	\$13,000	---	\$6,500
Emerging and Zoonotic Infectious Diseases				
Quarantine	---	\$42,772	---	\$30,000
Chronic Disease Prevention and Health Promotion				
Safe Motherhood/MMRC	---	\$17,000	---	\$26,000
Social Determinants of Health	---	\$3,000	---	\$150,000
Birth Defects, Developmental Disabilities, Disability and Health				
Surveillance for Emerging Threats to Mothers and Babies	---	\$10,000	---	\$5,000
Environmental Health				
All Other Environmental Health	---	\$17,000	---	\$3,000
Climate Change	---	\$10,000	---	\$100,000
Childhood Lead Poisoning Prevention	---	\$39,000	---	\$7,000
Injury Prevention and Control				
Opioid Overdose Prevention and Surveillance	---	\$475,579	---	\$237,790
Rape Prevention	---	\$51,750	---	\$50,000
Domestic Violence and Sexual Violence	---	\$34,200	---	\$5,000
NVDRS	---	\$24,500	---	\$10,000
Community and Youth Violence Prevention	---	\$15,100	---	\$100,000
Firearm Injury and Mortality Prevention Research	---	\$12,500	---	\$12,500
Domestic Violence Community Projects	---	\$5,500	---	\$5,000
Public Health Scientific Services				
Public Health Data Modernization Initiative	--	\$50,000	--	\$100,000
Public Health Workforce	--	\$56,000	--	\$50,000
Global Health				
Global Disease Detection and Emergency Response/GHS	---	\$193,400	---	\$100,000
Parasitic Diseases and Malaria	---	\$26,000	---	\$5,000
Cross-Cutting Activities and Program Support				
Public Health Infrastructure and Capacity	---	N/A	---	\$400,000
Infectious Disease Rapid Response Reserve Fund	---	\$10,000	---	\$25,000
Buildings and Facilities				
Buildings and Facilities	---	\$30,000	---	\$25,000
Total Increases	N/A	\$2,126,306	N/A	\$1,677,715
Decreases:				
All Other Decreases				
Total Decreases	N/A	\$0	N/A	\$0
Transfers				

	---	\$0	---	\$0
Built-In:				
1. Annualization of Jan - 2021 Pay Raise	---	---	---	\$0
2. FY 2022 Pay Increases	---	---	---	\$0
3. Changes in Day of Pay	---	---	---	\$0
4. Rental Payments to GSA and Others	---	---	---	\$0
Total Built-In		\$0		\$0
Absorption of Current Services				\$0
Total				\$0
Total Increases (Program Level)		\$2,126,306	N/A	\$1,677,715
Total Decreases (Program Level)		\$0	N/A	\$0
NET CHANGE - L/HHS/ED Program Level	11,921	\$7,819,446	535	\$1,677,715
Other Program Level Changes				
1. Vaccines for Children ¹	---	\$5,468,105	---	(\$328,107)
2. World Trade Center ²	---	\$550,526	---	\$90,959
3. Energy Employees Occupational Illness Compensation Act (EEOICPA)	---	\$50,763	---	\$0
4. User Fees	---	\$2,226	---	\$0
Total - Other Program Level Net Change	N/A	\$6,071,620	N/A	(\$237,148)
NET CHANGE: CDC BUDGET AUTHORITY & PROGRAM LEVEL	11,921	\$13,891,066	535	\$1,440,567

¹ FY 2021 and FY 2022 estimates reflect anticipated transfers from Medicaid.

² Reflects Federal share estimated obligations only; NYC share estimated obligations are not included.

BUDGET AUTHORITY BY ACTIVITY

(dollars in thousands)				FY 2022
Budget Activity/Description	FY 2020 Final	FY 2021 Enacted		President's Budget
Immunization and Respiratory Diseases	\$419,705	\$448,805		\$526,580
HIV/AIDS, Viral Hepatitis, STI and TB Prevention	\$1,273,556	\$1,314,056		\$1,420,556
Emerging and Zoonotic Infectious Diseases	\$583,772	\$596,272		\$626,272
Chronic Disease Prevention and Health Promotion	\$984,964	\$1,021,714		\$1,197,714
Birth Defects, Developmental Disabilities, Disability and Health	\$160,810	\$167,810		\$172,810
Environmental Health	\$196,850	\$205,850		\$308,850
Injury Prevention and Control	\$677,379	\$682,879		\$1,103,169
Public Health Scientific Services	\$578,497	\$591,997		\$609,997
Occupational Safety and Health	\$342,800	\$345,300		\$345,300
Global Health	\$570,843	\$592,843		\$697,843
Public Health Preparedness and Response ¹	\$827,200	\$842,200		\$842,200
Cross-Cutting Activities and Program Support	\$198,570	\$123,570		\$548,570
Buildings and Facilities	\$25,000	\$30,000		\$55,000
Total CDC, Budget Authority -	\$6,839,946	\$6,963,296		\$8,454,861
Total CDC, FTEs	11,000	11,701		12,236

AUTHORIZING LEGISLATION

(dollars in thousands)	Enabling Legislation Status	Allocation Methods	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Enabling Legislation Citation ¹					
Immunization and Respiratory Diseases					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 313*, PHSA § 317, PHSA § 317(l)*, PHSA § 317N*, PHSA § 317S*, PHSA § 319, PHSA § 319C-1*, PHSA § 319E*, PHSA § 319F, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 340C, PHSA § 352, PHSA § 2102(a)(6), PHSA § 2102(a)(7), PHSA § 2125, PHSA § 2126, PHSA § 2127, PHSA § 2821, Immigration and Nationality Act § 212 (8 U.S.C. 1182), Immigration and Nationality Act §§ 232 and 242 (8 U.S.C. 1222, 1252), Social Security Act § 1928 (42 U.S.C. 1396s)	Permanent Indefinite	Direct Federal/ Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; Contracts; and Other	\$790,005	\$821,005	\$945,930
HIV/AIDS, Viral Hepatitis, STD, and TB Prevention					
PHSA § 301, PHSA § 306(a-l), PHSA § 306(n)*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317E*, PHSA § 317N*, PHSA § 317P(a-c), PHSA § 318*, PHSA § 318A*, PHSA § 318B*, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 352, PHSA § 2315, PHSA § 2320, PHSA § 2341, PHSA § 2521, PHSA § 2522, PHSA § 2524*, Title II of P. L. 103-333	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants/ Cooperative Agreements, Formula Grants/ Cooperative Agreements, Contracts, and Other	\$1,273,556	\$1,314,056	\$1,420,556
Emerging and Zoonotic Infectious Diseases					
PHSA § 264, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317P*, PHSA § 317R*, PHSA § 317S*, PHSA § 317T*, PHSA § 317U*, PHSA § 319, PHSA § 319D*, PHSA § 319E*, PHSA § 319F, PHSA § 319G*, PHSA § 321, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 352, PHSA § 353, PHSA § 361-369, PHSA § 399V-5*, PHSA § 1102, PHSA § 2821*, PHSA § 2822*, Bayh-Dole Act of 1980 (P. L. 96-517)	Permanent Indefinite	Direct Federal/ Intramural, Contracts, and Competitive Grants/ Cooperative Agreements	\$635,772	\$648,272	\$678,272
Chronic Disease Prevention and Health Promotion					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317D*, PHSA § 317H*, PHSA § 317K*, PHSA § 317L*, PHSA § 317M*, PHSA § 317P*, PHSA § 330E*, PHSA § 398A, PHSA § 398B, PHSA § 399B, PHSA § 399C, PHSA § 399D, PHSA § 399E, PHSA § 399F*, PHSA § 399Q*, PHSA § 399R, PHSA § 399V-3*, PHSA § 399V-6, PHSA § 399W*, PHSA § 399X*, PHSA § 399Y*, PHSA § 399Z*,	Permanent Indefinite	Direct Federal Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; and	\$1,239,914	\$1,276,664	\$1,452,664

(dollars in thousands)	Enabling Legislation Status	Allocation Methods	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Enabling Legislation Citation¹					
PHSA § 399LL*, PHSA § 399LL-1, PHSA § 399NN*, PHSA § 1501–1510*, PHSA § 1706*, Comprehensive Smoking Education Act of 1984, Federal Cigarette Labeling and Advertising Act, Fertility Clinic Success Rate And Certification Act of 1992 (P. L. 102-493), Firefighter Cancer Registry Act of 2018 (Pub. L. 115-194)*		Competitive Contracts			
Birth Defects and Developmental Disabilities					
PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317C(a)*, PHSA § 317J*, PHSA § 317K, PHSA § 317L*, PHSA § 317Q, PHSA § 327, PHSA § 352, PHSA § 399M*, PHSA § 399Q, PHSA § 399S, PHSA § 399S-1*, PHSA § 399T, PHSA § 399V-2, PHSA § 399AA*, PHSA § 399BB*, PHSA § 399CC*, PHSA § 1102, PHSA § 1105, PHSA § 1107, PHSA § 1108*, PHSA § 1110, PHSA § 1112, PHSA § 1113, PHSA § 1114, PHSA § 1132*, PHSA § 1706*, The Prematurity Research Expansion And Education For Mothers Who Deliver Infants Early Act § 3 (42 U.S.C. 247b-4f)	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants, Cooperative Agreements and Contracts	\$160,810	\$167,810	\$172,810
Environmental Health					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317A*, PHSA § 317B, PHSA § 317I*, PHSA § 317O*, PHSA § 327, PHSA § 352, PHSA § 361, PHSA § 366, PHSA § 399V-6, PHSA § 1102, PHSA § 1706*	Permanent Indefinite	Direct Federal/ Intramural, Contracts, Competitive Grants/ Cooperative Agreements	\$213,850	\$222,850	\$332,850
Injury Prevention and Control					
PHSA § 203*, PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317N*, PHSA § 319, PHSA § 319D*, PHSA § 327, PHSA § 352, PHSA § 391, PHSA § 392, PHSA § 392A*, PHSA § 393, PHSA § 393A*, PHSA § 393B, PHSA § 393C, PHSA § 393D, PHSA § 394, PHSA § 394A*, PHSA § 399, PHSA § 399O, PHSA § 399P*, PHSA § 1102, PHSA § 1706*, Bayh-Dole Act of 1980 (P. L. 96-517), Family Violence Prevention and Services Act §§ 303* and 314, National Narcotics Leadership Act of 1988 (chapter 2), Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act § 7011 and § 7131 (P. L. 115-271), Comprehensive Addiction and Recovery	Permanent Indefinite	Direct Federal/ Intramural; Competitive Cooperative Agreements/ Grants, including Formula Grants; and Competitive Contracts	\$677,379	\$682,879	\$1,103,169

(dollars in thousands)	Enabling Legislation Status	Allocation Methods	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Enabling Legislation Citation¹					
(CARA) Act of 2016 § 102 (P. L. 115.271), Violence Against Women and Department of Justice Reauthorization Act of 2005 § 402* (P. L. 113-4)					
Public Health Scientific Services					
PHSA § 241, PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 317, PHSA § 317F*, PHSA § 317G, PHSA § 318*, PHSA § 319, PHSA § 319A*, PHSA § 319*, PHSA § 353, PHSA § 391, PHSA § 399S-1*, PHSA § 399V*, PHSA § 768, PHSA § 778*, PHSA § 1102, PHSA § 2315, PHSA § 2341, E-Government Act of 2002 (P. L. 107-347), Food, Conservation, and Energy Act of 2008 § 4403 (7 U.S.C. 5311a), Intelligence Reform and Terrorism Prevention Act of 2004 § 7211*, National Nutrition Monitoring and Related Research Act of 1990 (P. L. 101-445 § 5341), Title V (44 U.S.C. 3501 note)	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants/ Cooperative Agreements, Contracts	\$578,497	\$591,997	\$741,997
Occupational Safety and Health					
PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317A*, PHSA § 317B*, PHSA § 319, PHSA § 327, PHSA § 352, PHSA § 399MM, PHSA § 399V-6, PHSA § 1102, PHSA § 2695, Black Lung Benefits Reform Act of 1977 § 19 (P.L. 95-239), Bureau of Mine Act (as amended by P.L. 104-208), Energy Employees Occupational Illness Compensation Program Act of 2000, Federal Mine Safety and Health Act of 1977 (P.L. 91-173, as amended by P.L. 95-164 and P.L. 109-236), Firefighter Cancer Registry Act of 2018 (P.L. 115-194)*, Never Forget the Heroes: James Zadroga, Ray Pfeifer, and Luis Alvarez Permanent Authorization of the September 11th Victim Compensation Fund Act (P.L. 116-34), Occupational Safety and Health Act of 1970 §§ 20–22 (P.L. 91-596, as amended by P.L. 107-188 and P.L. 109-236, 29 U.S.C. 669–671), Radiation Exposure Compensation Act, §§ 6 and 12, Toxic Substances Control Act (P.L. 94-469, as amended by P.L. 102-550)	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grant/ Cooperative Agreements, Contracts, Other	\$342,800	\$345,300	\$345,300
Global Health					
PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 310, PHSA § 317T*, PHSA § 319, PHSA § 322, PHSA § 327, PHSA § 340C, PHSA § 361-369, PHSA § 2315, PHSA § 2341,	Permanent Indefinite	Direct Federal/ Intramural, Competitive Grants/	\$570,843	\$592,843	\$697,843

(dollars in thousands)	Enabling Legislation Status	Allocation Methods	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Enabling Legislation Citation¹					
Foreign Assistance Act of 1961 §§ 104A and 104C, Federal Employees International Organization Service Act § 3, Foreign Employees Compensation Program, Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria (P.L. 110-293, as amended by P.L. 115-305)		Cooperative Agreements, Direct Contracts, Interagency Agreements			
Public Health Preparedness and Response					
PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 319, PHSA § 319C-1*, PHSA § 319D*, PHSA § 319F, PHSA § 319F-2*, PHSA § 319G*, PHSA § 351A*, PHSA § 361, PHSA § 2801, PHSA § 2812*	Permanent Indefinite	Direct, Federal Intramural, Cooperative Agreements, including Formula Grants/ Cooperative Agreements; and Contracts	\$827,200	\$842,200	\$842,200
Buildings and Facilities					
PHSA § 319D(a)	Permanent Indefinite	Direct Federal/ Intramural, Contracts	\$250,000 ²	\$30,000	\$55,000
CDC-Wide Activities and Program Support					
PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 310A*, PHSA § 311, PHSA § 317, PHSA § 319, PHSA § 319A*, PHSA § 319D*, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 361-369, PHSA § 391, PHSA § 399G*, PHSA § 399U, PHSA § 2821*, Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 2019 (P.L. 115-245, Division B)	Permanent Indefinite	Direct Federal/ Intramural, Contracts, Competitive Grants/ Cooperative Agreements	\$358,570	\$283,570	\$708,570

¹ Expired/Expiring noted with *

² FY 2020 Final amount reflects one-time funding from the Nonrecurring Expenses Fund for the Chamblee Research Support Building 108 and Campus Infrastructure Improvements.

APPROPRIATIONS HISTORY TABLE¹

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2010 H1N1 Influenza Supplemental, CDC ²	200,000,000	--	--	200,000,000
2010 Public Health Prevention Fund ³	--	--	--	191,800,000
2010	6,312,608,000	6,313,032,000	6,733,377,000	6,390,387,000
2011	6,265,806,000	--	6,527,235,000	5,648,970,000
2011 Public Health Prevention Fund	610,900,000	--	--	610,900,000
2012	5,817,412,000	--	5,765,915,000	5,655,670,000
2012 Public Health Prevention Fund	752,500,000	--	848,000,000	809,000,000
2013 Enacted	4,991,523,000	--	5,713,698,000	5,657,023,000
2013 OMB 0.2% Rescission				(\$11,314,000)
2013 Sequestration	--	--	--	(284,581,000)
2013 Public Health Prevention Fund	903,210,000	--	858,000,000	462,916,000
2014	5,216,509,000	--	5,757,052,000	5,792,542,000
2014 Public Health Prevention Fund	755,110,000	--	839,000,000	831,300,000
2015	5,399,706,000	--	5,999,348,000	5,968,118,000
2015 Public Health Prevention Fund	809,510,000	--	887,300,000	886,300,000
2015 CR Ebola Funding (PL 113-164)	--	--	--	30,000,000
2015 Ebola Response and Preparedness ⁴	--	--	--	1,771,000,000
2016	6,095,803,000	6,095,803,000	5,747,306,000	6,270,745,000
2016 Public Health Prevention Fund	914,300,000	914,300,000	892,950,000	892,300,000
2017	5,967,376,000	6,875,144,000	6,153,448,000	6,293,503,000
2017 Public Health Prevention Fund	944,470,000	908,300,000	891,300,000	891,300,000
2018	4,991,675,000	6,010,153,000	6,318,953,000	--
2018 Public Health Prevention Fund	840,600,000	840,600,000	800,900,000	--
2019	5,524,935,000	\$6,781,908,000	\$7,004,483,000	\$6,477,883,000
2019 Public Health Prevention Fund	--	\$848,000,000	\$808,300,000	\$804,500,000
2019 Disaster Relief Supplement (PL 116-20)	--	--	--	\$20,000,000
2020	\$5,214,882,000	\$7,177,725,000	\$6,608,665,000	\$6,839,946,000
2020 Public Health Prevention Fund	\$891,100,000	\$854,250,000	\$854,250,000	\$854,250,000
2021	\$6,893,514,000	\$7,100,396,000	\$6,908,446,000	\$6,963,296,000
2021 Public Health Prevention Fund	\$893,950,000	\$856,150,000	\$856,150,000	\$856,150,000
2022	\$8,454,861,000	--	--	--
2022 Public Health Prevention Fund	\$903,300,000	--	--	--

¹ Does not include funding for ATSDR

² FY 2009 H1N1 influenza supplemental, Supplemental Appropriations Act, 2009 (P.L. 111-32). \$473M transferred from HHS's Public Health and Social Services Emergency Fund to CDC; \$200M directly appropriated to CDC.

³ The Prevention and Public Health Fund (PPHF) amounts reflect CDC's request and final amount allotted from the PPHF to CDC from HHS.

⁴ Ebola Response and Preparedness is one-time emergency funding appropriated in FY 2015 for the U.S. Government response to contain, treat, and prevent the spread of Ebola.

APPROPRIATIONS NOT AUTHORIZED BY LAW

(dollars in millions)	Last Year of Authorization	Authorization Level	Appropriations in Last Year of Authorization	Appropriations in FY 2021 ²
Program				
Sexually Transmitted Infections (STIs) (PHSA 318)	FY 1998	Such Sums...	\$112.117	\$161.810
National Cancer Registries (PHSA 399F)	FY 2003	Such Sums...	N/A	\$51.440
National Center for Health Statistics (PHSA 306)	FY 2003	Such Sums...	\$125.899	\$175.397
WISEWOMAN (PHSA 1509)	FY 2003	Such Sums...	\$12.419	\$28.120
Asthma Surveillance & Grants (PHSA 317I)	FY 2005	Such Sums...	\$32.422	\$30.000
Folic Acid (PHSA 317J)	FY 2005	Such sums...	\$2.188	\$3.150
Injury Prevention and Control (PHSA 394A)	FY 2005	Such Sums...	\$138.237	\$682.879
Oral Health Promotion (PHSA 317M)	FY 2005	Such Sums...	\$11.204	\$19.500
Screening, Referrals, and Education Regarding Lead Poisoning (PHSA 317A)	FY 2005	\$40.000	\$36.474	\$39.000
Birth Defects, Developmental Disability, Disability and Health (PHSA 317C)	FY 2007	Such Sums...	\$122.242	\$167.810
Breast and Cervical Cancer ¹ (PHSA 1501-10)	FY 2012	\$275.000 in FY 2012	\$204.779	\$225.000
CDC Public Health Workforce and Career Development (PHSA 778)	FY 2013	\$39.500 in FY 2013	\$41.500	\$56.000
Johanna’s Law (PHSA 317P(d))	FY 2014	\$18.000 in FY 2014	\$5.131	\$10.000
National Diabetes Prevention Program (PHSA 399V-3)	FY 2014	Such sums...	\$10.000	\$29.300
Section 317 Immunization (PHSA 317(I))	FY 2014	Such sums...	\$611.990	\$613.647
Young Women's Breast Health Awareness and Support of Young Women Diagnosed with Breast Cancer (PHSA 399NN)	FY2019	\$4,900,000 In FY 2019	\$4.960	\$4.960
Newborn Screening Laboratory Quality and Surveillance (PHSA 1113) ³	FY 2019	\$8,000,000	\$17.250	\$19.250

¹ Breast and Cervical Cancer appropriation includes WISEWOMAN funding.

² Program estimates

³ Reflects the Newborn Screening Quality Assurance Program and Newborn Screening for Severe Combined Immuno. Diseases funded lines.

NARRATIVE BY ACTIVITY

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IMMUNIZATION AND RESPIRATORY DISEASES

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$419.705	\$448.805	\$526.580	+\$77.775
PPHF	\$370.300	\$372.200	\$419.350	+\$47.150
Total Request¹	\$790.005	\$821.005	\$945.930	+\$124.925
FTEs	710	814	829	15
-- Immunization and Other Respiratory Diseases ¹	<u>\$613.647</u>	<u>\$613.647</u>	<u>\$713.572</u>	<u>+\$99.925</u>
-- Immunization Program	\$243.347	\$241.447	\$294.222	+\$52.775
-- <i>Immunization Program (PPHF)</i>	<i>\$370.300</i>	<i>\$372.200</i>	<i>\$419.350</i>	<i>+\$47.150</i>
-- Acute Flaccid Myelitis	N/A	\$6.000	\$6.000	\$0
-- Influenza/Influenza Planning and Response ¹	\$176.358	\$201.358	\$226.358	+\$25.000

¹ FY 2020 Level is comparably adjusted to reflect Congressionally accepted budget alignments between accounts.

Enabling Legislation Citation: PHS A § 301, PHS A § 307, PHS A § 310, PHS A § 311, PHS A § 313*, PHS A § 317, PHS A § 317(I)*, PHS A § 317N*, PHS A § 317S*, PHS A § 319, PHS A § 319C-1*, PHS A § 319E*, PHS A § 319F, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 340C, PHS A § 352, PHS A § 2102(a)(6), PHS A § 2102(a)(7), PHS A § 2125, PHS A § 2126, PHS A § 2127, PHS A § 2821, Immigration and Nationality Act § 212, Immigration and Nationality Act §§ 232 and 242 (8 U.S.C. 1222 and 1252), Social Security Act § 1928 (42 U.S.C. 1396s)

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural; Competitive Cooperative Agreements/Grants, including Formula Grants; Contracts; and Other

CDC prevents disease, disability, and death of children, adolescents, and adults through immunization and control of respiratory and related diseases. CDC is responding to the COVID-19 pandemic by learning more about how the disease spreads and affects people and communities. CDC’s work helps frontline healthcare workers, communities, and the public protect themselves and save lives.

Through the discretionary Immunization Program and mandatory Vaccines for Children (VFC) Program, CDC improves access to immunization services for uninsured and underinsured U.S. populations and supports the scientific evidence base for vaccine policy and practices. CDC also provides critical epidemiology and laboratory capacity to detect, prevent, and respond to vaccine-preventable, respiratory, and related infectious disease threats and conducts preparedness planning for pandemic influenza.

CDC’s FY 2022 request of **\$945,930,000** for Immunization and Respiratory Diseases is **\$124,925,000** above the FY 2021 Enacted level. These funds will continue to support the prevention of vaccine-preventable diseases (VPDs) across the lifespan by sustaining high vaccination coverage rates to prevent death and disability from VPDs, and helping to control respiratory diseases, including influenza. CDC will also continue to enhance Acute Flaccid Myelitis (AFM) surveillance capacity in states and initiate follow up of cases to better understand long-term effects and risk factors. In addition, CDC will continue working with the AFM Task Force,⁵ consisting of national subject matter experts, to better understand what is causing AFM, how to prevent it, and how to treat it.

⁵ <https://www.cdc.gov/ddid/bsc/afm-task-force.html>.

IMMUNIZATION AND RESPIRATORY DISEASES

BY THE NUMBERS

- **49.7%** — Among children aged 5 months, up-to-date status for all recommended vaccines declined from approximately two thirds of children during 2016–2019 (66.6%, 67.4%, 67.3%, 67.9%, respectively) to fewer than half (49.7%) in May 2020.¹
- **1,195 CDC deployers** have conducted **1,928 deployments** to **173 cities** across the United States and abroad.
- **13** — Confirmed measles cases as of November 30, 2020 in 7 jurisdictions in 2020; significantly down from 1,282 cases of measles in 31 states in 2019.²
- **7.52 million** — The number of illnesses prevented by influenza vaccination. Influenza vaccinations also prevented:
 - **3.69 million** medical visits,
 - **105,000** hospitalizations,
 - **6,300** deaths due to influenza during the 2019-2020 season.
- **193.8 million** — Doses of public and private sector influenza vaccine distributed in the U.S. as of January 26, 2021, which is the highest number of doses distributed in the U.S. in a single season.
- **9.3 million** — The number of additional federally-funded late-season adult influenza vaccine doses purchased (18x more than typical annual purchase) to address the co-circulation of influenza and SARS-CoV-2 in high-risk populations; funded 31 community-based organizations participating in the Racial and Ethnic Approaches to Community Health (REACH) program to improve influenza vaccination uptake in communities of color across the U.S.
- **82** — New partnerships developed or existing partnerships that have been expanded to increase influenza vaccination uptake in people with high-risk conditions, such as those with cardiovascular disease, diabetes, and chronic lung conditions, and those in congregate settings, e.g., long-term care facilities, homeless shelters, prisons, etc.

*References:

¹Bramer CA, Kimmins LM, Swanson R, et al. Decline in Child Vaccination Coverage During the COVID-19 Pandemic — Michigan Care Improvement Registry, May 2016–May 2020. MMWR Morb Mortal Wkly Rep 2020;69:630–631. DOI: https://www.cdc.gov/mmwr/volumes/69/wr/mm6920e1.htm?s_cid=mm6920e1_whttp://dx.doi.

²CDC, National Center for Immunization and Respiratory Diseases, Division of Viral Diseases <https://www.cdc.gov/measles/cases-outbreaks.html>.

*Unless otherwise noted, all information and calculations are from CDC program data.

Immunization and Respiratory Diseases Funding History¹	
Fiscal Year	Dollars (in millions)
2018 (BA)	\$472.453
2018 (PPHF)	\$324.350
2019 (BA)	\$462.824
2019 (PPHF)	\$320.550
2020 (BA)	\$419.705
2020 (PPHF)	\$370.300
2021 Enacted (BA)	\$448.805
2021 Enacted (PPHF)	\$372.200
2022 President's Budget (BA)	\$526.580
2022 President's Budget (PPHF)	\$419.350

Immunization Program Ten-Year Funding History	
Fiscal Year	Dollars (in millions)
2013 (BA)	\$461.160
2013 (PPHF)	\$90.883
2014 (BA)	\$450.547
2014 (PPHF)	\$160.300
2015 (BA)	\$400.547
2015 (PPHF)	\$210.300
2016 (BA)	\$285.247
2016 (PPHF)	\$324.350
2017 Final (BA)	\$281.771
2017 Final (PPHF)	\$324.350
2018 Final (BA)	\$285.529
2018 Final (PPHF)	\$324.350
2019 Final (BA)	\$287.106
2019 Final (PPHF)	\$320.550
2020 (BA)	\$419.705
2020 (PPHF)	\$370.300
2021 Enacted (BA)	\$241.447
2021 Enacted (PPHF)	\$372.200
2022 President's Budget (BA)	\$526.580
2022 President's Budget (PPHF)	\$419.350

Immunization and Other Respiratory Diseases Budget Request

CDC's national immunization recommendations currently provide guidance for the prevention of 17 vaccine-preventable diseases (VPDs) across the lifespan. The discretionary Immunization Program plays a fundamental role in achieving national immunization goals and sustaining high vaccination coverage rates to prevent death and disability from VPDs. The importance of the Immunization Program's work was heightened as CDC distributed a vaccine for the SARS-CoV-2 or COVID-19 virus, across the nation. The COVID-19 pandemic's impact on the U.S.'s health and economy is unprecedented and includes disruption of the health system's administration of routine childhood immunization.⁶ Maintaining continued vaccination coverage is critical to preventing outbreaks that can overwhelm already-overburdened health care systems.

CDC's immunization funding supports the public health functions necessary for safe and effective immunization programs and scientifically sound immunization policy. A strong public health infrastructure at the national, state, and local levels is vital to sustaining high vaccination coverage levels and low incidence of VPDs. Support also maintains public health preparedness for response to a vaccine-preventable national emergency, such as a pandemic or biologic attack.

CDC is working closely with government partners in response to the COVID-19 pandemic, including with sister agencies at the Department of Health and Human Services (HHS), and stands ready to assist the U.S. Government to be successful in achieving its coverage goals by building on CDC's long-standing immunization infrastructure. Each year, CDC distributes over 80 million doses of vaccines produced by US-licensed manufacturers of routinely recommended vaccines directly to health departments and private health providers across the country. This centralized distribution mechanism was used during the 2009 H1N1 pandemic response to distribute approximately 127 million doses of vaccine and has been scaled up further to manage the distribution of COVID-19 vaccine doses. This vaccine distribution system has the capacity and flexibility to reach the entire nation to support the needs of a pandemic and is also regularly used by state and local health jurisdictions across the country.

CDC has enhanced its work in several areas to both address the pandemic and continue frontline efforts to prevent spread of VPDs. Critical investments have been made to increase adult influenza vaccination, strengthen jurisdictional planning and preparedness, prepare for distribution of COVID-19 vaccine, and enhance information technology infrastructure to monitor and track COVID-19 vaccination once underway.

In FY 2020, CDC purchased 9.3 million more doses of seasonal influenza vaccine than in a typical year directly from vaccine manufacturers to help persons who are uninsured or underinsured to get their flu vaccines. These vaccines are being distributed to state health departments to focus on adults at higher risk of illness. CDC is collaborating with numerous existing and new partners to expand flu vaccine coverage, with specific efforts to address racial and ethnic disparities. For example, CDC will be working with the National Association for Community Health Centers (NACHC) to implement evidence-based strategies to increase adult vaccination coverage among populations that are underserved. CDC leveraged this partnership to designate a portion of the supplemental vaccine for use in community health centers, which are important sources of care for populations prioritized for flu vaccination this season, including communities of color and adults with underlying chronic disease. CDC has developed new partnerships to promote flu vaccination in populations at higher risk of certain conditions (cardiovascular, diabetes, chronic lung conditions, etc.) and those in congregate settings (i.e., long-term care facilities, homeless shelters, and prisons).

CDC continues to support national, state and local immunization programs which has dramatically improved access to vaccination for all children and put systems in place to detect and respond to outbreaks of VPDs and to

⁶Santoli JM, Lindley MC, DeSilva MB, et al. Effects of the COVID-19 Pandemic on Routine Pediatric Vaccine Ordering and Administration — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:591–593. DOI: <http://dx.doi.org/10.15585/mmwr.mm6919e2>.

monitor vaccine effectiveness and safety. However, CDC knows from surveys and data systems that COVID-19 interrupted access to routine medical services. CDC observed notable declines in pediatric outpatient visits and routine childhood vaccination since March 2020, leaving some children and communities at risk for preventable disease and outbreaks. Corresponding declines were also observed in the number of measles-containing vaccine doses administered in eight U.S. health care organizations serving publicly and privately insured patients. For example, in Michigan, more than 20% fewer vaccine doses were administered to children under 18 years of age in May 2020, compared to a similar time period in 2018–2019.⁷ While CDC saw some recovery in vaccine ordering data,⁸ CDC issued a [call-to-action in August 2020](#), and continues to work with partners to address catch-up vaccination for children.

CDC purchases routinely recommended vaccines to protect populations at higher risk who are not eligible for immunizations through the Vaccines for Children (VFC) Program and to meet urgent public health needs such as controlling VPD outbreaks. Flexibility is critical—CDC allows states to use their purchased vaccines to meet their unique needs and priorities in responding to VPD outbreaks. The public health functions supported by the program include providing a safety net for those who cannot otherwise access immunization services, managing vaccine shortages, conducting continual quality improvement efforts with immunization providers, monitoring the safety and effectiveness of vaccines and vaccine programs, preventing disease outbreaks and responding early and rapidly should they occur, and preparing to respond quickly and comprehensively to other urgent vaccine emergencies, such as pandemics.

CDC provides assistance on the ground and remotely to assist states with epidemiologic and laboratory expertise—from addressing vaccine-preventable diseases to addressing other respiratory infections for which no current vaccines exist.

Budget Request

CDC’s FY 2022 request of **\$713,572,000** for the Immunization and Other Respiratory Diseases program is **\$99,925,000** above the FY 2021 Enacted level. This figure includes **\$419,350,000** from the Prevention and Public Health Fund (PPHF), which is **\$47,150,000** above the FY 2021 Enacted level. These funds will continue to support the prevention of VPDs across the lifespan by sustaining high vaccination coverage rates, and helping to control respiratory diseases, including influenza. Adult immunization program funding will build on recent investments in the COVID-19 vaccine program to support essential activities aimed at strengthening the safety net for uninsured adults, addressing disparities in adult vaccine coverage, and supporting vaccine efforts across the lifespan. The funding supports:

- National- and state-level adult immunization program operations;
- Information technology needed to support immunization information systems and data exchange through the Immunization Gateway;
- Continued work with partners to address gaps in adult vaccination coverage;
- Assessment of vaccine safety among adults;
- Communications research on effective messaging and communications strategy for specific adult populations with low vaccine coverage;
- Research on strategies to increase vaccine coverage among adults;
- Evaluation of adult vaccine program effectiveness; and

⁷Bramer CA, Kimmins LM, Swanson R, et al. Decline in Child Vaccination Coverage During the COVID-19 Pandemic — Michigan Care Improvement Registry, May 2016–May 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:630–631. DOI: <http://dx.doi.org/10.15585/mmwr.mm6920e1>.

⁸Langdon-Embry M, Papadouka V, Cheng I, Almashhadani M, Ternier A, Zucker JR. Notes from the Field: Rebound in Routine Childhood Vaccine Administration Following Decline During the COVID-19 Pandemic — New York City, March 1–June 27, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:999–1001. DOI: <http://dx.doi.org/10.15585/mmwr.mm6930a3>.

- Purchase of vaccines for uninsured adults.

Immunization

In FY 2022, CDC will work to prevent outbreaks of vaccine-preventable diseases in the United States by focusing on three critical areas: national, state, and local immunization program operations; vaccine purchase; and a multicomponent vaccine hesitancy strategy. CDC will support state and local health departments, use data to identify communities placed at higher risk and provide them with assistance before outbreaks, and promote the importance of vaccination and science-based information through social and digital platforms, partnerships, and healthcare providers. These investments will help ensure all Americans are protected by a strong and effective immunization system that provides coverage and access to life-saving vaccines that are safe and effective. This system will be supported by a strategy that addresses vaccine hesitancy and provides science-based information about vaccine safety and effectiveness.

Vaccination rates remain strong nationally, but pockets of under-vaccination persist in some locations, putting communities at risk for outbreaks. CDC will support states, cities, and counties to find these communities by using immunization information system data to pinpoint areas of low vaccination coverage and take steps to protect them. CDC is also working with key partners to strengthen parent-provider conversations about vaccines. Trust in vaccines is not built through a top-down approach, but through millions of conversations between parents, doctors, nurses, pharmacists, and community members. To stop misinformation from eroding public trust in vaccines, CDC will work with local partners and trusted messengers to improve [confidence in vaccines](#)⁹ among groups placed at higher risk, including racial and ethnic minorities and with parents of very young infants and expectant parents. CDC will also work with social media companies and establish partnerships to contain the spread of misinformation and engage with critical groups to provide clear information about vaccination and the critical role it plays in protecting the public.

CDC will continue to fund 64 immunization awardees for state infrastructure awards and direct assistance for vaccines. CDC will also continue providing technical assistance and laboratory support to states and local communities responding to vaccine-preventable disease investigations, including outbreaks.

Preserving Core Public Health Immunization Infrastructure

CDC supports the public health workforce and systems at the national, state, and local levels that protect all Americans from disability and death from VPDs.

CDC conducts scientific studies that provide the basis for national immunization recommendations and programs including the burden of disease, vaccine effectiveness and safety, economic considerations, and program feasibility. The Advisory Committee on Immunization Practices (ACIP) established a workgroup that evaluated the safety and immunogenicity data of vaccine candidates, as well as the epidemiology of COVID-19, to identify populations who are at increased risk for severe illness and established priority groups for vaccination. The workgroup presented its findings to the parent ACIP for its deliberation, development of recommendations, and presentation for CDC's consideration in determining population prioritization.

In addition, CDC collects, analyzes, and reports scientific data about vaccines to ensure the effectiveness and safety of national vaccine recommendations and programs and to inform changes to the recommendations and programs as needed. This includes:

- Monitoring the effectiveness of vaccines when used in real-life settings.
- Monitoring safety of U.S.-licensed vaccines and evaluating vaccine safety concerns.

⁹ <https://www.cdc.gov/vaccines/partners/vaccinate-with-confidence.html>

- Updating technology to enhance electronic adverse-event reporting.
- Developing vaccine safety profiles for each newly licensed vaccine in collaboration with other federal agencies.

CDC supports science-based communication efforts to aid Americans in making informed vaccine decisions to protect themselves and their loved ones. CDC also conducts outreach to healthcare providers about current immunization recommendations and clinical best practices to help them protect their patients and communities from VPDs.

CDC responds to disease outbreaks by:

- Rapidly identifying and investigating cases.
- Conducting surveillance and laboratory testing.
- Implementing focused vaccination efforts and other measures to control the spread of disease and prevent future outbreaks.

CDC provides technical support for vaccine-preventable disease investigations and conducts tests in support of these investigations.

Maintaining an Adequate Amount of Vaccine Purchase

CDC is responsible for providing federally purchased vaccines to protect Americans who are uninsured from preventable diseases—and thus protect communities from the dangers of low vaccination rates. The discretionary vaccines serve adults who are uninsured and provide rapid vaccination response to disease outbreaks and other urgent public health needs.

The COVID-19 outbreak continues to impact the healthcare delivery system, which impacts the ability for providers to continue routine immunizations for adults and children. Over 11 million additional doses of pediatric and adult influenza vaccine were purchased to support the enhanced influenza vaccination campaign for fall 2020. The 9.3 million doses of additional adult flu vaccine represented a nearly 20-fold increase in the level of federal support in the form of vaccine for the effort to vaccinate adults against influenza. In concert with operational funding provided to immunization program awardees, this unprecedented level of support has highlighted adult immunization within the broader immunization program, which is likely to facilitate the implementation of the COVID-19 vaccination program.

In FY 2022, CDC will work collaboratively with its awardees and providers to recover and sustain record-high childhood immunization coverage rates and ensure that all Americans have access to vaccines.

Making Strategic Investments

CDC makes strategic investments to address gaps in vaccine coverage rates, including HPV, adult immunizations, and in rural populations. Through increases in coverage rates, the full potential of these vaccines to reduce disease burden, prevent severe illness and death, and lower costs associated with these diseases can be realized. To improve HPV vaccination coverage, for example, CDC funded 22 immunization programs to use Immunization Information Systems (IIS) for reminder/recall for adolescents 11 to 18 years of age and to conduct a comprehensive communication and education campaign.¹⁰ In addition, CDC supported a national network of immunization and cancer-prevention organizations to engage clinical and immunization partners at national, regional, state, tribal, territorial, jurisdictional, and local levels. CDC also works with professional medical

¹⁰ Elam-Evans LD, Yankey D, Singleton JA, et al. National, Regional, State, and Selected Local Area Vaccination Coverage Among Adolescents Aged 13–17 Years — United States, 2019. *MMWR Morb Mortal Wkly Rep* 2020;69:1109–1116. DOI: <http://dx.doi.org/10.15585/mmwr.mm6933a1>.

organizations to educate their members about HPV vaccine and the importance of a strong clinician recommendation for the vaccine. CDC works with complementary healthcare venues such as pharmacies and retail-based clinics to improve adult vaccination coverage rates, and along with HHS, provides leadership to the National Adult and Influenza Immunization Summit, a network of provider organizations, health systems, public health, and others working on innovative strategies to increase adult immunization. CDC's 2019 National Immunization Survey-Teen (NIS-Teen) estimates show vaccination coverage among adolescents aged 13–17 years coverage with ≥ 1 dose of HPV vaccine increased from 68.1% in 2018 to 71.5% in 2019, and the percentage of adolescents who were up to date with the HPV vaccination series increased from 51.1% in 2018 to 54.2% in 2019.

CDC has also strategically directed immunization resources to take advantage of changes in the healthcare environment. CDC will continue to implement health information technologies to give healthcare providers the necessary immunization information to ensure their patients receive the vaccines they need when they need them and will manage vaccine supply disruptions and shortages to ensure the best public health outcomes until vaccine supplies are restored.

The COVID-19 pandemic has also illuminated the need for a comprehensive adult immunization program that:

- Increases and sustains uptake of recommended adult immunizations; begins to close health disparities within and across groups who have been economically/socially marginalized;
- Establishes and maintains an adult immunization data system to improve decision-making.
- Increases vaccine confidence through innovative outreach and sustained engagement.
- Builds health system resilience for future epidemics and responses.

Enhancing the Section 317 Immunization Program to address gaps in adult immunization holds the potential to meet longstanding issues of inequity in protecting all Americans from vaccine-preventable diseases.

Immunization’s Role in Public Health

Funding Category	FY 2021 Immunization Program Funding
State Infrastructure	Funds public health immunization workforce and systems at the state and local levels, including to: recruit and educate networks of immunization providers; provide continual vaccine management quality assurance; promote public awareness of new and expanded vaccine recommendations; manage vaccine shortages; and respond to vaccine preventable disease outbreaks. These awards include core infrastructure/operations funding that goes to all awardees.
Vaccine Purchase	Allocated through direct assistance to provide federally purchased vaccines to vaccinate populations that are uninsured and non-VFC-eligible and to meet urgent public health needs such as controlling vaccine preventable disease outbreaks.
Extramural Program Operations	Supports national immunization policies and programs, including: disease surveillance; vaccine coverage assessment; post-marketing evaluation of vaccine effectiveness and safety; immunization information technologies; centralized vaccine ordering and distribution systems; payer of last resort; public awareness campaigns and resources; and provider education and tools.
Intramural Program Operations	Provides national public health expertise in immunization and vaccine preventable diseases to national, state, and local vaccination program efforts, including expertise in epidemiology and surveillance, laboratory methods and science, immunology, immunization policy, health communications science, vaccine management, and program implementation.

Supporting State and Territorial Immunization Programs

In FY 2022, CDC will provide infrastructure funding to 64 awardees—including all 50 states; Washington, D.C.; five large cities; five territories; and three freely associated states—through a non-competitive, formula-based, discretionary cooperative agreement program that provides financial assistance for state and local immunization operations. Through population-based awards, collaboration, and a strong public-private partnership, the discretionary Immunization Program establishes a comprehensive immunization system providing:

- Public sector vaccine ordering and distribution.
- Continual quality assurance.
- Provider recruitment and enrollment in the VFC Program.
- Provider education and public awareness focused on new and expanded vaccine recommendations.
- Management of vaccine shortages.

CDC will continue to provide its 64 awardees with direct assistance for vaccine purchased from the federal contracts. CDC monitors spend plans developed by awardees and adjusts as needed throughout the year so that no vaccine goes to waste.

CDC provides national public health expertise in vaccine-preventable diseases that supports the 64 awardees, including expertise in:

- Epidemiology and surveillance
- Laboratory methods and science
- Immunization policy
- Health communications science
- Vaccine management
- Program implementation and evaluation

Immunization Cooperative Agreements¹

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Number of Awards	64	64	64
- New Awards	0	0	0
- Continuing Awards	64	64	64
Average Award	\$4.712	\$4.712	TBD
Range of Awards	\$0.357-\$36.845	\$0.357-\$36.845	TBD
Total Awards	\$301.542	\$301.542	TBD

¹These funds are awarded by formula.

Addressing Emerging Respiratory Pathogens

CDC will address emerging respiratory pathogens by continuing to:

- Fund ten Emerging Infections Program (EIP) sites to monitor respiratory bacterial pathogens and vaccine-preventable diseases, such as Group A and Group B *Streptococcus*, *Legionella*, and antibiotic resistance.
- Support planning, surveillance, laboratory testing, and technical assistance for Middle East Respiratory Syndrome (MERS).
- Maintain epidemiologic and laboratory activities for non-influenza respiratory viruses allowing CDC to maintain expertise to respond to outbreaks of known viruses such as EV-D68 and novel coronaviruses such as SARS and MERS.
- Provide state and local health departments 24/7 consultation regarding MERS identification and testing, partner at U.S. borders to increase MERS surveillance, and deploy epidemiologists to help in health investigations in affected countries. Continue to closely monitor MERS globally and assess domestic risk, given the potential for this virus to cause more cases.
- Build capacity to prevent Legionnaire's disease/*Legionella* infections by disseminating building water management toolkits, monitoring and evaluating causes and prevention strategies of *Legionella* outbreaks in communities and healthcare facilities, collaborating with the Centers for Medicare & Medicaid Services (CMS) to support implementation of water management programs in healthcare facilities, partnering with states and other partners to monitor the impact of prevention measures, and developing laboratory techniques to more quickly identify the most dangerous strains.

Acute Flaccid Myelitis Budget Request

CDC's Acute Flaccid Myelitis (AFM) program thoroughly investigates every suspected AFM patient reported by health departments and examines possible risk factors and causes, why some people develop this condition, monitors AFM activity nationwide, and updates possible treatment options. In the area of AFM research, CDC focuses on:

- Enhancing surveillance for AFM so that all cases are identified and reported to CDC;
- Describing the clinical characteristics of patients with AFM, including their symptoms, test results, treatments received, and outcomes;
- Identifying the viruses that cause AFM; and
- Improving strategies for communicating with and educating clinicians and parents.

Other CDC activities include providing guidance and tools for health departments for reporting AFM cases. For states that want to confirm their own cases, CDC provides standard operating procedures, a medical chart abstraction tool, and training on how to interpret the information. CDC collaborates with health departments and partners to educate clinicians so they are aware of the symptoms of AFM, how to report suspected cases of AFM, what specimens to collect, and the [clinical guidance](#)¹¹ for patients with AFM. Educational activities and materials include health alerts, job aids, toolkits, webinars, and scientific publications and presentations. CDC collaborates with a group of parents who offer support to children with AFM and their families. This collaborative effort works to raise awareness about AFM and share information and resources. Lastly, CDC and experts in a range of disciplines developed clinical guidance for the acute medical treatment of AFM of patients with AFM. CDC is continuing to explore and update this guidance as more is discovered about AFM.

Budget Request

CDC's FY 2022 request of **\$6,000,000** for Acute Flaccid Myelitis is level with FY 2021 Enacted level. CDC will continue working on AFM to help determine its cause and improve tailored prevention efforts. CDC will work closely with national experts and the AFM Task Force, healthcare providers, state and local health departments, and parents to:

- Promote awareness of AFM among front-line clinicians.
- Monitor AFM activity nationwide-- via enhanced surveillance capacity in states and initiate follow up of cases to better understand long-term effects and risk factors.
- Update possible treatment options.
- Track long-term outcomes of those affected by AFM.

¹¹ <https://www.cdc.gov/acute-flaccid-myelitis/hcp/clinical-management.html>.

Influenza Planning and Response Budget Request

CDC's influenza (flu) program detects, controls and prevents influenza disease that causes substantial illness and death each year. Influenza vaccination continues to be more important than ever to reduce additional illnesses and burden on the healthcare system while the U.S. continues to respond to the COVID-19 pandemic. In preparation for the 2020-2021 flu season and potential co-circulation of influenza and SARS-CoV-2, CDC enacted a number of surveillance enhancements including expanding its emergency department syndromic surveillance, expanding electronic health record (EHR) based hospitalization surveillance, and developing a multiplex test for both influenza and SARS-CoV-2. CDC also worked with partners to increase the amount of influenza vaccine distributed this season to over 193 million doses - the highest number ever distributed in the U.S. in a single season.

CDC is using funding to further invest in improving influenza vaccines through expanding vaccine effectiveness monitoring and evaluation, which will add to previous years' work focused on comparing vaccines, understanding the effects of the virus and immune response on vaccine effectiveness, and the benefits of vaccination. CDC will also put funds towards further enhancing virus characterization and expanding vaccine virus development. This work will build on previous years' advancements towards identifying influenza variants before they happen and increasing the speed of their detection and analysis.

CDC estimates of the burden of influenza during the 2019–2020 season include an estimated 38 million people getting sick with influenza, 18 million people seeing a health care provider for their illness, 400,000 hospitalizations, and 22,000 deaths from influenza.

An annual seasonal influenza vaccine is the best way to help protect against influenza. CDC recommends an annual influenza vaccine for everyone six months and older. Experience shows that, while vaccines are powerful tools, reaching every individual who would benefit from an immunization is not easy. During the 2019–2020 flu season, only 52% of the US population received the flu vaccine. Persistent racial and ethnic disparities exist among adult influenza vaccination rates with 9% and 12% lower coverage among Black, non-Hispanic and Hispanic persons, respectively, as compared to the vaccination rate of White persons.¹² Still, flu vaccination helped to prevent 7.52 million flu illnesses, 105,000 flu-related hospitalizations, and 6,300 deaths during the 2019-2020 season. Any flu infection can carry a risk of serious complications, hospitalization or death, even among otherwise healthy children and adults. Increased flu vaccination coverage will protect more Americans from this seasonal health threat, while decreasing stress on the healthcare system. Reducing the number of influenza-related hospitalizations through vaccination is more critical than ever during the ongoing COVID-19 pandemic. Fewer influenza related hospitalizations can reduce the burden on the healthcare system that may need the capacity for patients with COVID-19.

Some populations, such as older adults, young children, pregnant individuals and people with certain long-term health conditions, are at higher risk for serious influenza complications. The seasonal burden of influenza disease in the United States is determined by several factors including the characteristics of the circulating viruses, the timing of the season, how well the vaccine is working to protect against illness, and how many people are vaccinated. Influenza places a substantial burden on the health of people in the United States each year. Influenza-related hospitalizations of children younger than five years of age in the United States are estimated to have ranged from 7,000 to nearly 30,000 since 2010. A published study¹³ estimated direct medical costs for hospitalizations and outpatient visits from seasonal influenza-related complications exceeds \$10 billion annually.

¹² CDC. Flu Vaccination Coverage, United States, 2018–19 Influenza Season. Available from: <https://www.cdc.gov/flu/fluview/coverage-1920estimates.htm>.

¹³ Molinari NA, Ortega-Sanchez IR, Messonnier ML, et al. The annual impact of seasonal influenza in the US: measuring disease burden and costs. *Vaccine*. 2007;25(27):5086-5096. doi:10.1016/j.vaccine.2007.03.046.

CDC has developed and distributed a laboratory test that identify SARS-CoV-2, the virus that causes COVID-19, as well as influenza A and B viruses.¹⁴ Testing for all three types of viruses at the same time will provide public health officials with information they need to help reduce the spread of these viruses in the community while conserving resources that are in short supply. A single test that diagnoses current infection with one or more of these viruses will allow public health laboratories to continue influenza surveillance while they are also testing for SARS-CoV-2. Information about both viruses will help public health officials to control the spread of influenza and COVID-19 in the community and may help health care providers manage treatment of influenza and COVID-19.

Influenza viruses continually change and influenza seasons are unpredictable, requiring constant vigilance from CDC and its domestic and international public health partners. CDC provides leadership and a cutting-edge scientific and programmatic foundation for the diagnosis, prevention, and control of influenza both domestically and internationally. CDC’s annual seasonal influenza activities improve preparedness by:

- Strengthening surveillance and diagnostic capacity.
- Improving public awareness and provider knowledge about influenza and the importance of vaccination, other prevention measures, and early treatment.
- Enhancing international, federal, state, and local partnerships to respond quickly to influenza epidemics.
- Improving tools to prevent and treat influenza.

Prevention of seasonal influenza requires an annual reassessment of viruses included in the vaccine. This assessment is based on CDC surveillance data. The vaccine must be produced and administered annually to account for seasonal variations.

Since 2010, the Advisory Committee on Immunization Practices (ACIP) has recommended influenza vaccine for all people ages six months and older. To implement this recommendation, CDC works to educate providers and raise public awareness. CDC makes special efforts to reach populations of focus, such as pregnant people, and provides further outreach to subspecialty medical providers to increase vaccination of those persons. CDC also promotes vaccination at non-traditional venues, such as retail pharmacies, to increase access to vaccine services outside of clinic settings and hours.

Budget Request

CDC’s FY 2022 request of **\$226,358,000** for Influenza Planning and Response is **\$25,000,000** above the FY 2021 Enacted level. This funding will support initial implementation of the activities outlined in the 2020–2030 National Influenza Vaccination Modernization Strategy.¹⁵ These activities include expanding vaccine effectiveness monitoring and evaluation, enhancing virus characterization and expanding vaccine virus development for use by industry, increasing genomic testing of influenza viruses, and increasing influenza vaccine use.

Influenza is a public health and national security priority. In addition to the annual burden caused by seasonal influenza epidemics, a serious influenza pandemic is capable of causing devastating disease and economic burden. In FY 2022, CDC’s influenza program will support continued U.S. Government efforts to modernize the domestic influenza vaccine enterprise to be highly responsive, flexible, scalable, and more effective at preventing the spread of influenza viruses. Faster methods of producing influenza vaccines will help keep Americans safer from seasonal influenza, which kills tens of thousands of Americans each year, and from the potential of pandemic influenza. While imperfect, currently available influenza vaccines are still the most

¹⁴ <https://www.cdc.gov/coronavirus/2019-ncov/lab/multiplex.html>.

¹⁵ <https://www.phe.gov/Preparedness/planning/nivms/Pages/default.aspx>.

important and effective tool available to prevent influenza. Influenza vaccines have many benefits including reducing the risk of influenza illnesses, hospitalizations, and the risk of influenza-related death in children.

CDC is committed to the goal of increasing flu vaccine uptake, especially in people at higher risk of serious flu and COVID-19 outcomes. The FY 2022 target for percentage of adults aged 18 years and older who are vaccinated annually against seasonal influenza is 70%. CDC will continue to work with public health and clinical partners to eliminate barriers to vaccination. The ongoing COVID-19 pandemic may affect where and how vaccines are given, and CDC is working with health departments to develop contingency plans. CDC is also examining operational considerations such as access to vaccine with potential need for social distancing, and prolonging vaccine uptake throughout the flu season. CDC is making additional influenza vaccine available to state health departments for adults who are uninsured and at higher risk for morbidity and mortality. To support this effort, CDC is enhancing communications to engage with special audiences, including older Americans, persons with disabilities, people of any age with underlying health conditions, workers in long-term care facilities, other essential workers, and African American and Hispanic persons. Understanding that African American and Hispanic persons have lower rates of flu vaccination and a higher risk for COVID-19 complications, CDC will enhance education and communication efforts toward these key communities. CDC will address the impacts the pandemic may have on vaccination, evaluating the quality of communications with patients regarding vaccinations, and focusing on influenza vaccination and African American and Hispanic or Latino patients.

Influenza Prevention

In FY 2022, CDC will continue to support efforts to prevent influenza through vaccination. The prevention of influenza through vaccines depends largely on two factors: 1) how well the vaccine works and 2) how many people are vaccinated. Each season, CDC serves as a leader in the development and improvement of influenza vaccines. Continuing to study and improve influenza vaccines is a CDC priority for FY 2022. This will be achieved through better characterization of influenza viruses, better selection of viruses for use in vaccines, and enhanced monitoring of vaccine effectiveness in the community. CDC also focuses on increasing the demand for influenza vaccine through health communication and outreach to providers and the general public; prioritizing outreach to populations at higher risk of morbidity and mortality about the importance of vaccination; and partnerships with pharmacists to extend access to influenza vaccination. Annual vaccination campaigns support reaching influenza vaccination goals, including those for racial and ethnic minority groups and populations that are disproportionately affected, and help build capacity for vaccination efforts in the event of an influenza pandemic.

To complement national efforts, resources are available to all 64 immunization awardees to increase demand for seasonal influenza vaccine—including school-located vaccination clinics—and to improve influenza vaccine coverage rates among priority populations (school-aged children, adults at higher risk of morbidity, and racial and ethnic minority groups). CDC will measure vaccination coverage, with particular attention to racial and ethnic minority populations with historically low coverage rates. These surveys guide outreach efforts that have resulted in improvements in influenza vaccination rates, particularly among children.

Influenza Detection and Monitoring

Detection and monitoring of influenza involve a network of surveillance systems at state and international levels that routinely:

- Determine severity of the influenza season.¹⁶
- Identify viruses that are causing disease and may pose a pandemic threat.

¹⁶<http://www.cdc.gov/flu/weekly/fluactivitysurv.htm>.

- Determine the effectiveness of the influenza vaccine and other interventions.

Ongoing work to improve laboratory and surveillance methods ensures that CDC can adequately respond to both routine and unusual influenza outbreaks. CDC's efforts to increase capacity for influenza surveillance include training state public health laboratory workers who respond to foodborne outbreaks to apply their skills in response to influenza.

CDC's influenza laboratory capabilities and epidemiologic networks have strengthened national security by improving influenza surveillance and vaccine strain selection and have provided the underpinning of the COVID-19 response. CDC training and support of epidemiologists serving as influenza surveillance coordinators in every state and some local jurisdictions has allowed for continuously improving surveillance systems that provide data to inform timely response to annual influenza epidemics. This training and support also provided surveillance systems and a trained workforce that were able to be immediately repurposed to respond to the COVID-19 pandemic. In 2020 CDC developed a new laboratory test that can simultaneously detect two types of influenza (influenza A and influenza B) and SARS-CoV-2, the virus that causes COVID-19.

CDC continues to work with domestic and international partners at the interface of human and animal health to improve surveillance, conduct swift outbreak responses, and complete threat assessments for emerging influenza viruses with pandemic potential. Pandemics may occur when a virus that is predominantly transmitted among animals develops the ability to infect and transmit among humans. Each human infection with an animal influenza virus has the potential to cause a pandemic. CDC will continue to conduct surveillance and research to better understand the complex factors that impact how and when these animal influenza viruses develop the ability to infect people and transmit from person to person. CDC collaborates with USDA and with domestic and international health partners to monitor the occurrence of avian and swine influenza viruses, which have historically resulted in pandemics more often than other animal influenza viruses.

Novel influenza viruses can emerge anywhere in the world. To combat this threat, CDC supports the international monitoring of influenza and evaluates core capacities of its partners to conduct surveillance, perform laboratory testing, and prepare to respond to influenza pandemics. Pandemic influenza preparedness is interconnected and complementary with seasonal influenza preparedness and response. The same systems used by countries to monitor seasonal epidemics contribute to vaccine composition decision making and are the foundation for pandemic preparedness. CDC's influenza program funds partner nations through cooperative agreements. CDC began supporting more than 50 partner countries in 2005, which has resulted in a significant increase in countries reporting to WHO FluNet. CDC will continue to work on expanding virus sample sharing among countries so that vaccines and diagnostic tests for viruses with pandemic potential can be produced. CDC will continue this support to partner countries to build capacity for the detection of a global pandemic and to reduce the global burden of seasonal influenza. During the COVID-19 pandemic, CDC-funded partner countries have leveraged influenza surveillance staff and infrastructure for national COVID-19 response activities, and the WHO FluNet platform was expanded to include COVID-19 reporting in addition to influenza.

Supporting State/Municipality/Territorial Laboratory Capacity

The Epidemiology and Laboratory Capacity for Infectious Diseases cooperative agreement (ELC) assists states and eligible local public health agencies, strengthening their basic epidemiologic and laboratory capacity to address infectious disease threats. CDC funds 50 states, three municipalities, and four territories through the ELC to conduct influenza surveillance and diagnostic activities with funding from the Influenza Planning and Response budget line.

In FY 2022, CDC will fund public health departments to improve detection of human infections with novel influenza viruses. Collaboration between state and local health authorities and CDC is essential for risk

assessment and response in these cases. In addition, these funds support seasonal influenza surveillance providing data on:

- Influenza viruses
- Outpatient influenza-like illness
- Influenza-associated hospitalizations
- Influenza-associated deaths
- Geographic distribution of the viruses

The network of seasonal influenza surveillance systems also forms the foundation for pandemic influenza surveillance.

Planning for and Responding to Influenza Pandemics

In FY 2022, CDC will work to ensure the availability and effectiveness of medical countermeasures and equipment in the event of an influenza pandemic building on lessons learned in the COVID-19 response. During supply chain shortages for countermeasures during COVID-19, CDC published strategies for optimizing the supply of respirators and facemasks and allocating ventilators from stockpiles to facilities. Scientific experts will continue to update and develop guidance that will inform the purchase of countermeasures.

Prior to COVID-19, measures like social distancing and wearing facemasks were a largely foreign concept. As the novel coronavirus began to spread within the United States, CDC recommended social distancing and avoiding large gatherings. On April 3, 2020, CDC recommended that persons wear a cloth face covering in public to slow the spread of COVID-19. Days after announcing this recommendation, U.S. adults (62%) quickly adopted the practice of using cloth face coverings, and a higher prevalence of use was reported one month later (76%), in May 2020.¹⁷ CDC will continue to develop recommendations for actions that people and communities can take in addition to vaccines and treatment drugs to help slow the spread of influenza, based upon lessons learned employing these measures at a national scale in the COVID-19 response. In May 2020, most adults nationwide (79.5%) reported always or often keeping 6 feet apart from others. When respondents did report being in a public area, 74.1% said they always or often wearing cloth face coverings.¹⁸

CDC will continue to develop a nationwide system of triage call centers that would be activated during a severe pandemic to provide advice to persons who are ill, which would reduce the burden on hospitals, healthcare facilities, and public health departments. During the COVID-19 response CDC quickly scaled up call capacity and answered 31,000+ inquiries from doctors, nurses, or other clinical staff and health departments. CDC will build on this experience to prepare for an influenza pandemic, and to continue to respond to COVID-19. CDC also developed innovative tools like an online self-checking tool, Clara,¹⁹ that people have used more than 30.5 million times.

CDC collaborates with the National Association of County and City Health Officials (NACCHO), the Association of State and Territorial Health Officials (ASTHO), and national associations that represent pharmacies, pharmacists, and pharmaceutical distributors on efforts to improve antiviral distribution and dispensing at the local level during a pandemic.

CDC will sustain the nation's ability to respond to influenza pandemics by ensuring well-trained staff are in place for pandemic response. CDC will support planning efforts among health departments, hospitals, and emergency

¹⁷Fisher KA, Barile JP, Guerin RJ, et al. Factors Associated with Cloth Face Covering Use Among Adults During the COVID-19 Pandemic — United States, April and May 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:933-937. DOI: <http://dx.doi.org/10.15585/mmwr.mm6928e3>.

¹⁸Czeisler ME, Tynan MA, Howard ME, et al. Public Attitudes, Behaviors, and Beliefs Related to COVID-19, Stay-at-Home Orders, Nonessential Business Closures, and Public Health Guidance — United States, New York City, and Los Angeles, May 5–12, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:751–758. DOI: <http://dx.doi.org/10.15585/mmwr.mm6924e1>.

¹⁹<https://www.cdc.gov/coronavirus/2019-ncov/index.html>.

responders. Coordination among these groups will result in better integrated emergency response plans prior to a public health disaster to ensure a rapid, efficient, and effective response at the community level. CDC will test response capabilities with federal, state, and local partners in FY 2022 using techniques such as virtual tabletop and functional exercises to evaluate and improve response plans based on lessons from the COVID-19 response.

State Table: Discretionary (Section 317)^{1,2}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$4,613,915	\$4,613,915	TBD	TBD
Alaska	\$1,468,977	\$1,468,977	TBD	TBD
Arizona	\$8,325,011	\$8,325,011	TBD	TBD
Arkansas	\$3,099,804	\$3,099,804	TBD	TBD
California	\$45,696,483	\$45,696,483	TBD	TBD
Colorado	\$5,289,651	\$5,289,651	TBD	TBD
Connecticut	\$3,887,090	\$3,887,090	TBD	TBD
Delaware	\$1,513,783	\$1,513,783	TBD	TBD
District of Columbia	\$2,140,871	\$2,140,871	TBD	TBD
Florida	\$13,456,466	\$13,456,466	TBD	TBD
Georgia	\$10,632,305	\$10,632,305	TBD	TBD
Hawaii	\$1,861,295	\$1,861,295	TBD	TBD
Idaho	\$2,674,738	\$2,674,738	TBD	TBD
Illinois	\$6,676,250	\$6,676,250	TBD	TBD
Indiana	\$6,464,506	\$6,464,506	TBD	TBD
Iowa	\$4,158,660	\$4,158,660	TBD	TBD
Kansas	\$2,789,430	\$2,789,430	TBD	TBD
Kentucky	\$4,808,646	\$4,808,646	TBD	TBD
Louisiana	\$5,051,621	\$5,051,621	TBD	TBD
Maine	\$2,207,711	\$2,207,711	TBD	TBD
Maryland	\$4,694,008	\$4,694,008	TBD	TBD
Massachusetts	\$8,437,473	\$8,437,473	TBD	TBD
Michigan	\$10,501,693	\$10,501,693	TBD	TBD
Minnesota	\$6,124,163	\$6,124,163	TBD	TBD
Mississippi	\$3,261,201	\$3,261,201	TBD	TBD
Missouri	\$6,018,265	\$6,018,265	TBD	TBD
Montana	\$1,654,025	\$1,654,025	TBD	TBD
Nebraska	\$2,073,493	\$2,073,493	TBD	TBD
Nevada	\$3,180,474	\$3,180,474	TBD	TBD
New Hampshire	\$2,487,022	\$2,487,022	TBD	TBD
New Jersey	\$6,778,576	\$6,778,576	TBD	TBD
New Mexico	\$4,382,517	\$4,382,517	TBD	TBD
New York	\$9,294,805	\$9,294,805	TBD	TBD
North Carolina	\$11,013,859	\$11,013,859	TBD	TBD
North Dakota	\$3,920,224	\$3,920,224	TBD	TBD
Ohio	\$10,498,093	\$10,498,093	TBD	TBD
Oklahoma	\$4,978,545	\$4,978,545	TBD	TBD
Oregon	\$5,093,891	\$5,093,891	TBD	TBD
Pennsylvania	\$9,688,411	\$9,688,411	TBD	TBD
Rhode Island	\$2,540,243	\$2,540,243	TBD	TBD
South Carolina	\$4,959,465	\$4,959,465	TBD	TBD
South Dakota	\$2,112,333	\$2,112,333	TBD	TBD
Tennessee	\$6,664,123	\$6,664,123	TBD	TBD
Texas	\$30,359,201	\$30,359,201	TBD	TBD
Utah	\$2,998,238	\$2,998,238	TBD	TBD
Vermont	\$1,917,508	\$1,917,508	TBD	TBD
Virginia	\$7,604,180	\$7,604,180	TBD	TBD
Washington	\$7,914,484	\$7,914,484	TBD	TBD
West Virginia	\$3,449,354	\$3,449,354	TBD	TBD

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Wisconsin	\$7,479,618	\$7,479,618	TBD	TBD
Wyoming	\$1,189,808	\$1,189,808	TBD	TBD
Cities				
Chicago	\$6,193,120	\$6,193,120	TBD	TBD
Houston ²	\$2,512,813	\$2,512,813	TBD	TBD
New York City	\$9,023,516	\$9,023,516	TBD	TBD
Philadelphia	\$2,712,564	\$2,712,564	TBD	TBD
San Antonio ²	\$1,791,043	\$1,791,043	TBD	TBD
Territories				
American Samoa	\$449,824	\$449,824	TBD	TBD
Guam	\$1,269,297	\$1,269,297	TBD	TBD
Marshall Islands	\$3,946,379	\$3,946,379	TBD	TBD
Micronesia	\$5,646,548	\$5,646,548	TBD	TBD
Northern Mariana Islands	\$963,016	\$963,016	TBD	TBD
Puerto Rico	\$4,047,821	\$4,047,821	TBD	TBD
Republic of Palau	\$714,232	\$714,232	TBD	TBD
Virgin Islands	\$410,325	\$410,325	TBD	TBD
Subtotal States	\$330,086,504	\$330,086,504	TBD	TBD
Subtotal Cities	\$22,233,055	\$22,233,055	TBD	TBD
Subtotal Territories	\$17,447,441	\$17,447,441	TBD	TBD
Total States/Cities/Territories	\$369,767,000	\$369,767,000	TBD	TBD
Total Resources	\$369,767,000	\$369,767,000	TBD	TBD

¹This state table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). Includes vaccine direct assistance and immunization infrastructure/operations grant funding. For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <https://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

² Immunization infrastructure/operations grant funding only; vaccine direct assistance for Houston and San Antonio is included with Texas.

State Table: Vaccines for Children^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$81,887,859	\$96,918,860	\$90,625,364	-\$6,293,495
Alaska	\$11,917,735	\$14,920,919	\$14,499,888	-\$421,032
Arizona	\$106,272,256	\$126,309,755	\$118,393,702	-\$7,916,053
Arkansas	\$46,764,117	\$55,628,800	\$52,167,867	-\$3,460,933
California	\$526,701,625	\$625,821,846	\$586,499,229	-\$39,322,617
Colorado	\$60,997,690	\$73,085,008	\$68,819,287	-\$4,265,721
Connecticut	\$38,834,680	\$47,802,357	\$45,689,575	-\$2,112,782
Delaware	\$14,181,423	\$17,444,130	\$16,666,881	-\$777,249
District of Columbia	\$11,324,946	\$14,120,173	\$13,589,404	-\$530,770
Florida	\$320,261,289	\$377,561,588	\$352,243,731	-\$25,317,857
Georgia	\$174,908,348	\$207,115,394	\$193,720,957	-\$13,394,437
Hawaii	\$20,096,398	\$25,658,934	\$25,002,581	-\$656,353
Idaho	\$30,270,101	\$36,172,793	\$34,010,596	-\$2,162,197
Illinois	\$86,955,293	\$104,710,418	\$98,877,816	-\$5,832,602
Indiana	\$91,401,205	\$108,675,871	\$101,887,015	-\$6,788,857
Iowa	\$42,871,326	\$51,609,531	\$48,726,527	-\$2,883,004
Kansas	\$33,384,505	\$40,050,835	\$37,740,275	-\$2,310,560
Kentucky	\$64,986,699	\$77,098,263	\$72,190,389	-\$4,907,874
Louisiana	\$90,490,922	\$107,015,821	\$100,020,731	-\$6,995,090
Maine	\$16,057,095	\$20,202,396	\$19,536,151	-\$666,245
Maryland	\$85,052,947	\$101,030,786	\$94,667,461	-\$6,363,325
Massachusetts	\$87,361,804	\$104,915,804	\$98,921,256	-\$5,994,548
Michigan	\$102,650,057	\$123,542,591	\$116,625,371	-\$6,917,221
Minnesota	\$54,805,306	\$65,935,567	\$62,230,889	-\$3,704,678
Mississippi	\$54,174,166	\$64,378,210	\$60,337,920	-\$4,040,290
Missouri	\$78,166,882	\$92,900,904	\$87,076,365	-\$5,824,539
Montana	\$12,055,778	\$14,804,418	\$14,131,810	-\$672,608
Nebraska	\$25,912,405	\$31,173,446	\$29,421,161	-\$1,752,285
Nevada	\$41,604,573	\$49,938,300	\$47,071,142	-\$2,867,158
New Hampshire	\$13,681,042	\$16,984,810	\$16,309,018	-\$675,792
New Jersey	\$98,781,755	\$118,516,543	\$111,684,410	-\$6,832,133
New Mexico	\$38,028,532	\$45,904,533	\$43,406,387	-\$2,498,146
New York	\$143,787,904	\$173,712,262	\$164,335,265	-\$9,376,997
North Carolina	\$152,674,776	\$181,336,712	\$169,905,101	-\$11,431,611
North Dakota	\$9,431,326	\$11,671,669	\$11,188,172	-\$483,497
Ohio	\$153,665,739	\$181,297,725	\$169,215,531	-\$12,082,194
Oklahoma	\$73,516,966	\$88,001,713	\$82,820,958	-\$5,180,754
Oregon	\$38,991,073	\$47,511,910	\$45,161,697	-\$2,350,213
Pennsylvania	\$118,269,494	\$141,992,981	\$133,858,221	-\$8,134,759
Rhode Island	\$17,768,972	\$21,887,528	\$20,928,095	-\$959,433
South Carolina	\$82,573,262	\$98,320,698	\$92,254,486	-\$6,066,212
South Dakota	\$12,407,168	\$15,210,507	\$14,506,247	-\$704,260
Tennessee	\$109,840,590	\$129,927,714	\$121,450,472	-\$8,477,242
Texas	\$526,682,409	\$621,273,071	\$579,806,565	-\$41,466,506
Utah	\$32,103,146	\$38,778,970	\$36,682,876	-\$2,096,094
Vermont	\$8,284,838	\$10,782,748	\$10,609,205	-\$173,543
Virginia	\$86,682,926	\$102,212,785	\$95,370,024	-\$6,842,761
Washington	\$91,229,494	\$110,811,367	\$105,144,277	-\$5,667,090
West Virginia	\$26,149,937	\$31,558,800	\$29,837,662	-\$1,721,138

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Wisconsin	\$54,686,923	\$65,609,089	\$61,825,172	-\$3,783,917
Wyoming	\$6,398,438	\$8,058,643	\$7,797,132	-\$261,511
Cities				
Chicago	\$40,214,802	\$49,297,072	\$47,012,458	-\$2,284,614
Houston ²	\$957,745	\$2,437,313	\$2,981,700	+\$544,387
New York City	\$154,694,145	\$184,881,467	\$173,842,001	-\$11,039,466
Philadelphia	\$31,896,620	\$39,067,920	\$37,240,527	-\$1,827,393
San Antonio ²	\$696,164	\$1,771,631	\$2,167,334	+\$395,703
Territories				
American Samoa	\$3,574,947	\$4,261,055	\$4,005,029	-\$256,026
Guam	\$2,146,741	\$3,027,593	\$3,110,038	+\$82,446
Marshall Islands ³	\$0	\$0	\$0	\$0
Micronesia ³	\$0	\$0	\$0	\$0
Northern Mariana Islands	\$2,148,694	\$2,718,272	\$2,643,144	-\$75,128
Palau ³	\$0	\$0	\$0	\$0
Puerto Rico	\$31,390,656	\$38,727,047	\$37,060,815	-\$1,666,231
Virgin Islands	\$2,293,349	\$4,009,137	\$4,446,639	+\$437,502
Subtotal States	\$4,307,986,138	\$5,137,906,494	\$4,825,488,314	-\$312,418,180
Subtotal Cities	\$228,459,476	\$277,455,403	\$263,244,020	-\$14,211,383
Subtotal Territories	\$41,554,386	\$52,743,103	\$51,265,666	-\$1,477,438
Total States/Cities/Territories	\$4,578,000,000	\$5,468,105,000	\$5,139,998,000	-\$328,107,000
Total Resources⁴	\$4,578,000,000	\$5,468,105,000	\$5,139,998,000	-\$328,107,000

¹ This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). Includes vaccine direct assistance and immunization infrastructure/operations grant funding. For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

² Vaccine direct assistance for Houston and San Antonio is included with the state of Texas.

³ Awardee does not receive VFC funding.

⁴ Current estimates are based on the FY 2022 VFC PB 10 Year Table, as of December 2020.

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HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED INFECTIONS AND TUBERCULOSIS

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$1,273.556	\$1,314.056	\$1,420.556	+\$106.500
Total Request	\$1,273.556	\$1,314.056	\$1,420.556	+\$106.500
FTEs	1,091	1,116	1,116	\$0
-- Domestic HIV/AIDS Prevention and Research	\$928.712	\$964.712	\$1,064.712	+\$100.000
-- <i>Ending HIV/AIDS Initiative (non-add)</i>	\$140.000	\$175.000	\$275.000	+\$100.000
-- <i>School Health – HIV (non-add)</i>	\$33.081	\$34.081	\$34.081	\$0
-- Viral Hepatitis	\$39.000	\$39.500	\$39.500	\$0
-- Sexually Transmitted Infections (STIs)	\$160.810	\$161.810	\$161.810	\$0
-- Tuberculosis (TB)	\$135.034	\$135.034	\$135.034	\$0
-- Infectious Diseases and the Opioid Epidemic	\$10.000	\$13.000	\$19.500	+\$6.500

Enabling Legislation Citation: PHS A § 301, PHS A § 306(a-l), PHS A § 306(n)*, PHS A § 307, PHS A § 308, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317E*, PHS A § 317N*, PHS A § 317P(a-c), PHS A § 318*, PHS A § 318A*, PHS A § 318B*, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 352, PHS A § 2315, PHS A § 2320, PHS A § 2341, PHS A § 2521, PHS A § 2522, PHS A § 2524*, Title II of Pub. L. 103-333.

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with*

Allocation Methods: Direct Federal/Intramural, Competitive Grants/Cooperative Agreements, Formula Grants/Cooperative Agreements, Contracts, and Other

CDC envisions a future free of Human Immunodeficiency Virus (HIV), viral hepatitis, sexually transmitted infections (STIs), and tuberculosis (TB). In working toward that future, CDC prioritizes cost-effective, scalable programs, policies, and research to achieve the greatest reduction in the incidence of these conditions—all of which have significant personal, societal, and economic costs. The public health crisis involving injection drug use of opioids such as heroin, fentanyl, prescription opioids, and other drugs such as methamphetamines and cocaine, requires a comprehensive approach to stop the spread of infectious diseases among people who use drugs. CDC remains committed to advancing more syndemic approaches for the prevention of HIV/AIDS, viral hepatitis, STDs, and TB. It is important to continue strengthening the collaborative work across these programs and to facilitate efficiency and integration of services to the public.

The COVID-19 pandemic has affected CDC, state, local, tribal, and territorial efforts to address viral hepatitis, HIV, STIs, and TB and the health disparities associated with them. Case investigation and contact tracing, a core disease control measure used by STI, HIV, and TB health department programs, is a key strategy for preventing further spread of COVID-19. For decades, Disease Intervention Specialists (DIS) have been conducting STD, HIV, and TB case investigations, contact tracing, patient navigation, testing and case management, and assisting with outbreak investigations of other infectious diseases, including COVID-19. In response to the COVID-19 pandemic, CDC has leveraged this expertise, expanded existing training centers, and developed guidance on COVID-19 case investigations and contact tracing plans for health departments.

CDC’s FY 2022 request of **\$1,420,556,000** for HIV, Viral Hepatitis, Sexually Transmitted Infections and Tuberculosis is **\$106,500,000** above the FY 2021 Enacted level. CDC will employ an intensive, strategic approach to diagnose, refer for treatment, prevent, and respond to new HIV transmissions—creating a pathway to end the HIV/AIDS epidemic in America.

Ending the HIV Epidemic

In the FY 2020 President's Budget, HHS proposed a once-in-a-generation opportunity to eliminate new HIV infections in our nation. CDC’s FY 2022 request of **\$275,000,000** for the *Ending the HIV Epidemic* (EHE) initiative is **\$100,000,000** above the FY 2021 Enacted level. The multi-year program will provide additional expertise, technology, and resources needed to end the HIV epidemic in the United States. CDC expects that proven and innovative activities will be employed across all four strategies of the initiative: diagnose, treat, prevent, and respond. Achieving health equity is central to addressing the HIV epidemic. CDC is embracing innovative strategies to increase access to HIV prevention services, enhance community engagement, and combat stigma. EHE remains a priority during COVID-19 and CDC has responded to the needs of jurisdictions by extending deadlines, allowing for flexibility in how funding is used and employing innovative efforts to adapt to the pandemic. These efforts included increasing HIV self-testing, encouraging the use of telemedicine for HIV treatment and HIV prevention services, and helping persons at risk of acquiring HIV to start and continue preexposure prophylaxis while minimizing face-to-face encounters with health-care providers. Through these efforts, CDC has continued to make progress towards ending the HIV epidemic during the COVID-19 pandemic.

Infectious Diseases and the Opioid Epidemic

CDC’s FY 2022 request of **\$19,500,000** for Infectious Diseases and the Opioid Epidemic is **\$6,500,000** above the FY 2021 Enacted level. The United States is experiencing a public health crisis involving injection drug use (IDU). As the crisis continues to impact communities throughout the United States, CDC is increasing support for testing, diagnosis, linkage to care, and treatment for infectious diseases related to injection drug use. CDC is also improving implementation of and access to high-quality syringe services programs nationwide through dissemination of best practices and providing technical assistance. CDC works to ensure linkage to substance use disorder treatment at healthcare encounters for infections associated with IDU. CDC will continue to strengthen state and local capacity to detect, respond, and prevent further transmission of infectious diseases.

HIV, Viral Hepatitis, Sexually Transmitted Infections, and TB Funding History	
Fiscal Year	Dollars (in millions)
2018	\$1,120.056
2019	\$1,123.883
2020	\$1,273.556
2021 Enacted	\$1,314.056
2022 President’s Budget	\$1,420.556

HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED INFECTIONS AND TUBERCULOSIS

BY THE NUMBERS

- **194,508**—Lab investigation tests CDC conducted from 2013 to 2018 for outbreak investigations and surveillance.
- **~3 million**—HIV tests conducted in 2018 by 61 CDC-funded states and territories; 10,622 persons were newly diagnosed as HIV-positive. This represents about 1 in 3 new HIV diagnoses in the United States.
- **2,482**—Potential cases of congenital syphilis prevented by CDC-funded STD prevention programs in 2018.¹
- **35**—States CDC has assisted with publicly declared hepatitis A outbreaks among people who used drugs and/or are experiencing homelessness.
- **6000+**—M. tuberculosis samples tested by CDC’s Molecular Detection of Drug Resistance (MDDR) service over 11 years, to rapidly identify multidrug-resistant TB and help clinicians prescribe the most effective treatment.
- **~2 million**—U.S. middle and high school students reached by CDC’s school health funding.
- **>17,000**—Unique gonorrhea isolates contained in CDC’s gonorrhea specimen bank. CDC’s syphilis serum bank contains syphilis serum from more than 500 patients and is replenished yearly.
- **86**—Clusters of HIV infections addressed in 2019 through collaboration with state health departments and identified with CDC analysis. A CDC-developed tool that allows health departments to identify molecular clusters of HIV infections is currently in use by 47 health departments.
- **500+**—U.S. tuberculosis genotype clusters for which CDC has performed whole-genome sequencing since 2018. The number of tuberculosis cases in each of these clusters ranged from two to 182.
- **46,400**—Registered users of the CDC-supported STD Curriculum Center. Users have been awarded 120,000 continuing nursing education hours, continuing medical education credits, or continuing education hours.
- **4,988**—People treated with curative therapies for hepatitis C between 2015 and 2018 as part of a CDC-supported demonstration model for test and cure strategies.
- **25**—States use CDC “Integrated HIV Surveillance and Prevention Programs for Health Departments” funds to support syringe services programs (SSPs).

*References:

¹ Internal CDC Data.

*Unless otherwise noted, all information and calculations are from CDC program data.

Domestic HIV Prevention and Research Budget Request

CDC is America's lead agency in the fight to prevent new HIV infections. An estimated 1.2 million people live with HIV in the United States, with approximately 38,000 HIV diagnoses each year. HIV prevention and treatment have yielded major successes—saving lives and money. Between 2007 and 2016, approximately 35,000 HIV infections were prevented annually and approximately 350,000 infections over the ten-year period. Given that the estimated lifetime cost of a single person with HIV infection is \$510,000, those prevention efforts saved more than \$17 billion in direct medical costs annually—almost \$180 billion for the ten-year period.²⁰ In 2018, the United States also met its goals for elimination of perinatal transmission.

CDC's Long-Standing Investment in HIV Prevention

CDC invests in a high-impact HIV prevention approach that uses public health data to inform decision-making, implement scientifically proven, cost-effective, and scalable HIV prevention interventions that have yielded major successes in the U.S., including:

- From 2008 to 2018, the annual number of new diagnoses of HIV infection decreased by 21 percent.
- The percentage of persons with diagnosed HIV infection (i.e., who know their HIV positive status) at year-end 2018, compared with 2014, increased from 84.4 percent to 86.2 percent.
- People with HIV are living longer, healthier lives due to better, life-prolonging treatments.²¹

CDC is ensuring that HIV prevention services are available to Americans at highest risk for HIV due to public health system disruptions and the economic impacts of the COVID-19 pandemic. CDC implements an integrated HIV surveillance and prevention program enabling health departments to better match their resources to the geographic burden of HIV within their jurisdictions. Currently, populations such as gay and bisexual men; transgender individuals; Black/African American persons and Hispanic/Latino persons; and people who live in the southern United States, are disproportionately affected by HIV.

CDC's analysis of HIV diagnoses data from 2014 to 2018 revealed decreases in HIV diagnoses among several key populations, including gay, bisexual, and other men who have sex with men (MSM), heterosexual persons, White persons, persons of multiple races, and Black/African American persons. However, diagnoses during this timeframe remained stable among Hispanic/Latino and Asian groups. Furthermore, diagnoses among Persons Who Inject Drugs (PWID), persons aged 25-34 years, as well as Native Hawaiian/Other Pacific Islander groups, increased. Diagnoses continue to be the highest among African American persons compared to other racial and ethnic groups and higher in the South compared to other regions. While annual diagnoses among Hispanic/Latino gay and bisexual men were stable during this timeframe, HIV continues to be a serious health threat to Hispanic/Latino persons. In 2018, Southern states accounted for about 52 percent of all people with an HIV diagnosis in the United States, despite having only about 37 percent of the U.S. population. In addition, people with HIV in the South are less likely to be aware of their infection than those living in other U.S. regions. Reducing HIV-related health disparities is integral to CDC's core HIV prevention programs.

Most of the domestic HIV prevention budget is distributed externally to a wide range of partners to end the HIV epidemic in the U.S. In FY 2020, CDC awarded more than \$110 million in Ending the HIV Epidemic (EHE) designated funding for health departments and regional organizations to begin implementing their EHE plans and build workforce capacity. CDC also provides appropriate fiscal oversight, program monitoring and accountability, and allows for the robust collection of programmatic and public health data. CDC's core HIV

²⁰ Bingham A, Shrestha RK, Khurana N, Jacobson E, Farnham PG. Estimated Lifetime HIV-related Medical Costs in the United States. *Sex Transm Dis*. 2021 Jan 23. doi: 10.1097/OLQ.0000000000001366. Online ahead of print. Updated to 2020 dollars.

²¹ From 2014–2018, the age-adjusted death rate from all causes among persons with diagnosed HIV decreased almost 21 percent, from 15.5 to 12.3 per 1,000 persons.

prevention efforts aim to reduce the number of new HIV infections, increase access to care, improve health outcomes for people with HIV, and reduce HIV-related health disparities.

With thirty-two reported cases of perinatal HIV infection, 2018 was the first year the United States met both elimination of perinatal transmission goals: 1.) less than 1 perinatal HIV infection per 100,000 live births and 2.) a perinatal HIV transmission rate of less than 1 percent. CDC continues to invest in eliminating mother-to-child transmission of HIV, primarily through its efforts with health departments, in jurisdictions with recent perinatal HIV cases or a high number of women of childbearing age living with HIV.

In addition, CDC works to strengthen schools, families, and communities to prevent HIV, other STDs, and unintended pregnancy and help youth become healthy, successful adults. Over a two year period (2015-2017) schools served by CDC-funded local education agencies saw statistically significant declines in the percentage of students who ever had sex (37.5% to 35.4%), were currently sexually active (26% to 23.8%) or had four or more lifetime sexual partners (12% to 10%). Experiences and behaviors during the adolescent years not only present immediate risk for HIV and STDs but can have serious health consequences into adulthood. Twenty-one percent of all new HIV diagnoses occur among people aged 13–24 years. The foundation of CDC’s school-based HIV prevention program focuses on implementing high-quality surveys, translating research on what works, and supporting school districts to implement school-based approaches to prevention.

CDC works with districts to decrease adolescent risk behaviors and experiences by providing knowledge and skills about the risks and protective factors associated health outcomes; promote access to youth-friendly health services; and increase the safety and supportiveness of school environments. School environments that support youth and help them feel safe and connected have significant and long term impacts on youth.

CDC research shows that adults who experience strong connections in school as youth were 48-66 percent less likely to engage in sexual behaviors that increase risk of HIV and STIs; use illicit substances; have mental health issues; or experience violence. CDC's implementation of evidence-based prevention programs has proven successful, and schools delivering this approach saw decreases in sexual risk behavior, substance use, and experience of violence compared to those who did not. School-based HIV/STD prevention programs are cost-effective. One study found that every dollar invested in a school-based HIV, sexually transmitted infections (STI), and pregnancy prevention program saves \$2.65 in medical costs and social costs (including earnings-related outcomes, public assistance, and other outcomes).

CDC continues to implement its core HIV prevention activities that the EHE initiative builds upon, including:

- **Directly funding state and local health departments:** CDC directly funds health departments to conduct HIV testing; provide critical prevention interventions, improve linkages to, retention in, and when needed, re-engagement in care, with the goal of achieving greater rates of viral suppression.
- **Investing in school health activities to prevent behaviors and experiences that contribute to HIV infection and other STIs among nearly 2 million adolescents:** Sexual behavior, substance use, experience of violence and mental health problems all place adolescents at increased risk for HIV and STIs. CDC's school-based programs enhance institutional capacity to implement health education, connect youth to health services, and build supportive school environments. CDC prioritizes funding for areas with high rates of HIV infection and partners with nongovernmental organizations to help state and local agencies effectively implement their HIV/STI prevention efforts. These investments will ensure that school HIV prevention programs have staff with the skills, information, and organizational support to best serve youth that are at the most risk for HIV, STIs, and unplanned pregnancy.
- **Conducting public surveillance activities:** CDC’s surveillance activities support identification and prioritization of prevention efforts towards populations that are at risk for acquiring and transmitting HIV. CDC tracks how effectively states, cities, and local communities are linking patients to care and keeping them in care and virally suppressed, and develops reports and conducts analyses of public health data to guide national, state, and local prevention and testing programs and health education

efforts directed towards affected populations. CDC also monitors adolescent health risk behaviors and experiences, and school-based HIV prevention activities such as health education, health services, and safe and supportive environments. These efforts provide invaluable information for state and local prevention planning efforts.

- **Supporting effective HIV prevention programs:** CDC continually improves domestic HIV prevention through world class scientific expertise, cutting edge technology, communication science that informs how we reach those at risk, and translating prevention research into practice. CDC works continually to improve the foundations of HIV prevention programs in the US by investing in:
 - **Laboratory Science—CDC’s cutting edge HIV laboratory** works in collaboration with the National Institutes of Health, industry and academia to identify new biomedical approaches to HIV prevention, innovative diagnostic techniques, and provide support to states for outbreak investigation and response efforts needed to interrupt active networks of transmission.
 - **Translating Research—CDC’s scientific expertise** in prevention research is critical to the development of science-based recommendations and guidance for health care providers, grantees, and people at risk for or with HIV. CDC invests in prevention research activities that examine how communities are implementing new and existing biomedical and bio-behavioral interventions and testing options to improve HIV prevention strategies in practice.
 - **Communication Campaigns—CDC raises awareness about HIV** in the United States and promotes HIV prevention and testing focused on populations most affected through the Let’s Stop HIV Together initiative. This initiative seeks to reduce HIV-related stigma, raise awareness, and normalize testing and other risk reduction behaviors.
 - **Partnering with national, regional, local, and community-based organizations—** CDC partners with organizations with reach at various levels to ensure there is a well-trained HIV prevention workforce that can meet people who need HIV prevention services where they are. This includes:
 - **Supporting Community-Based Organizations (CBOs)**—CDC supports CBOs through its Comprehensive High-Impact HIV Prevention Programs for CBOs. Applicants are required to align their project plans with the four EHE pillars. Eligibility will focus on those areas with high HIV diagnoses; therefore, CDC anticipates that many CBOs will reside in EHE jurisdictions. Supporting CBOs in EHE jurisdictions allows for coordination and amplification of services in communities experiencing disproportionate impact. In FY 2021, CDC expects to award approximately \$42 million to approximately 90 CBOs.
 - **Building HIV Prevention Capacity**—CDC funds a Capacity Building Assistance (CBA) program to increase the knowledge, skills, technology, and infrastructure to implement and sustain science-based, culturally appropriate HIV prevention interventions and strategies. This program builds capacity among staff at state and local health departments, community-based organizations, and healthcare providers to prevent HIV among America’s hardest hit-communities.

Ending the HIV Epidemic

Ending the HIV Epidemic (EHE) is a once in a generation opportunity to eliminate new HIV infections in the United States. Through EHE, CDC will work to substantially reduce new HIV infections. In FY 2021, CDC continued to provide expertise, technology, and resources to the 48 counties, Washington, D.C., San Juan, Puerto Rico, where more than 50 percent of HIV diagnoses were found and the seven states with a substantial rural HIV burden. CDC is implementing the EHE Initiative in these 57 jurisdictions in close collaboration with other HHS operating divisions.

The EHE initiative is structured so that each of the 57 jurisdictions can focus resources and efforts on the populations most affected in their area. CDC will diligently track, publicly report, and routinely share progress on

performance targets and goals through HHS America’s HIV Epidemic Analysis Dashboard (AHEAD), which will show up-to-date progress on key EHE indicators. The EHE initiative builds on CDC’s current investments in HIV prevention and provides affected communities with the expertise, technology, and resources to address the HIV epidemic locally. CDC’s EHE efforts will continue to focus on four strategies—Diagnose, Treat, Prevent, and Respond—that when augmented by EHE funding and the efforts of our HHS partners, can end the HIV epidemic in the US:

- **Diagnose all individuals with HIV as early as possible:** Approximately 161,800 Americans have HIV but do not know it. Early detection is critical and can lead to improved health outcomes, rapid treatment, and prevention of transmission to others. Nationally in 2018, 80.2 percent of persons with a diagnosed HIV infection were linked to care within 30 days of diagnosis. In addition, by partnering with state and local organizations, CDC can focus testing efforts on diagnosing HIV in persons previously unaware of their infection and increase access to home testing options. Collaborations to increase testing for syndemic diseases including STDs and viral hepatitis are ongoing. CDC is also working with the healthcare sector to increase routine testing and implementation of the U.S. Preventive Services Task Force (USPSTF) Grade A recommendation to screen for HIV infection in all persons aged 15 to 65 years. CDC’s HIV laboratory is improving diagnostic testing methods and technologies that make testing easier and quicker, and better able to detect HIV early after infection.
- **Treat people with HIV rapidly and effectively to reach and maintain viral suppression:** People with HIV who take their medication as prescribed and stay virally suppressed can live long healthy lives and have effectively no risk of sexually transmitting HIV to a partner. CDC estimates that 80 percent of new infections are transmitted by people with HIV who either did not know they had HIV or who are not receiving HIV care and treatment. CDC supports the use of public health data and cutting-edge analytical methods to identify and follow-up with them to re-engage them in medical care—a strategy called Data-to-Care. Additionally, CDC produces guidelines and educational materials for healthcare providers to increase capacity and competency in the areas of HIV testing, care, treatment, and prevention. CDC also works with states to improve the completeness of their reported laboratory data used to operationalize Data-to-Care efforts; these data include using CD4 cell counts and viral suppression information.
- **Prevent new HIV transmissions by using effective interventions, including PrEP and syringe services programs:** Through research, scientific advancement, and best practices, CDC now knows better than ever before how to prevent HIV and preserve the health of people with HIV. Of the estimated 1 million Americans at risk for HIV and who could benefit from PrEP, less than one in four are using this medication. CDC funding to health departments will support:
 - **Improving Uptake of PrEP:** When taken as directed, PrEP can reduce the risk of HIV infection by about 99 percent.²² CDC currently funds a free national service for clinicians seeking advice and consultation on prescribing PrEP. Additionally, CDC provides online continuing medical education, *Prescribe HIV Prevention*, which encourages health care providers to prescribe PrEP as well as post-exposure prophylaxis (PEP) to prevent new HIV infections after someone has been exposed. The *Start Talking. Stop HIV.* campaign provides materials and resources to educate people who are at risk of HIV about PrEP as a prevention tool. Ready, Set, PrEP is a new nationwide program led by HHS that provides PrEP medications at no cost to thousands of individuals who qualify. The program will expand access to PrEP medications, reduce new HIV infections, and bring us one step closer to ending the HIV epidemic in the United States.
 - **Supporting Syringe Service Programs:** CDC supports state and local communities who wish to use federal funds to implement Syringe Service Programs.²³ Syringe Service Programs are community-based programs that address drug use and infectious diseases. These programs can play a critical role in preventing HIV among persons who inject drugs (PWID), facilitate entry into

²² <https://www.cdc.gov/hiv/basics/prep.html>.

²³ As of May 2021, 44 states and Washington D.C., Cherokee Nation (Oklahoma), and Puerto Rico have provided data, following CDC-developed guidance that there is a need to support Syringe Service Programs due to experiencing or at risk for significant increases in HIV or hepatitis C infections.

substance use disorder treatment and medical services, and do not increase illegal drug use.²⁴ CDC has also funded capacity building assistance providers with expertise in the implementation of syringe services programs to support related technical assistance requests.

- **Respond quickly to potential HIV outbreaks to get needed prevention and treatment services to people who need them.** HIV outbreaks are costly; the cost of one outbreak in Indiana in 2015 associated with injection drug use is estimated at over \$100 million.²⁵ New laboratory methods and epidemiological techniques help us see where HIV may be spreading most rapidly, which allows CDC and other partners to quickly develop and implement strategies to stop ongoing transmission. This allows state and local partners to target HIV prevention efforts near real-time. Transmission rates in clusters identified using CDC’s cluster detection approach were 8-11 times the U.S. average. From December 2015 through December 2019, 242 clusters were detected.^{26,27,28} Targeting prevention efforts to networks with active transmission can improve success, preventing new infections and saving time and money. Networks can include persons with HIV who are not in care or virally suppressed and persons at high risk for exposure to HIV, who can then be connected to prevention interventions and medical care.

Budget Request

CDC’s FY 2022 request of **\$1,064,712,000** for Domestic HIV/AIDS Prevention and Research is **\$100,000,000** above FY 2021 Enacted and includes **\$275,000,000** to support the *Ending the HIV Epidemic* Initiative. The majority of funding will support state and local health departments for the 57 jurisdictions to implement their plans. CDC will continue critical investments nationwide in health departments; surveillance; supporting effective HIV prevention programs; national, regional, local, community, and other organizations; and school health to implement key HIV prevention activities that provide the foundation for ensuring the success of new activities in the *Ending the HIV Epidemic* initiative. In addition to the four key strategies – Diagnose, Treat, Prevent, and Respond, CDC will:

- Work to advance and expand innovations, implement approaches that improve health equity into the entire HIV prevention portfolio, test innovative service delivery models designed to increase access to prevention services, use syndemic approaches to broaden reach to key populations and create efficiencies, and strengthen engagement of grassroots CBOs in implementing EHE.
- Fund activities to diagnose HIV as early as possible after infection, CDC will expand work with health departments, the clinical community and community organizations to bring HIV testing to everyone who needs it. We expect jurisdictions to develop testing options to reach as many people as possible. These options should include implementing innovative approaches to increase testing in clinical settings, developing systems to make HIV testing more accessible in non-traditional settings (e.g., people’s homes, syringe services programs, STD clinics, jails/prisons), and establishing ways to regularly re-screen individuals at elevated risk for HIV infection. CDC will also implement a new program for home HIV self-testing and collection.
- Support all people with HIV in reaching their goals of sustained viral suppression, CDC and its partners will promote rapid and comprehensive care provision to all persons with HIV and the start of treatment as close to the time of diagnosis as possible. CDC expects jurisdictions to develop robust networks for rapid linkage to clinical care and essential support services; scale up Data-to-Care programs; and to

²⁴Aspinall, E. J., Nambiar, D., Goldberg, D. J., Hickman, M., Weir, A., Van Velzen, E., . . . Hutchinson, S. J. (2014). Are needle and syringe programmes associated with a reduction in HIV transmission among people who inject drugs: a systematic review and meta-analysis. *Int J Epidemiol*, 43(1), 235- 248. doi:10.1093/ije/dyt243.

²⁵Farnham PG et al. Updates of Lifetime Costs of Care and Quality of Life Estimates for HIV-Infected Persons in the United States: Late Versus Early Diagnosis and Entry Into Care. *J Acquir Immune Defic Syndr* 2013; 64: 183-189.

²⁶Oster AM, France AM, Panneer N, Ocfemia MC, Campbell E, Dasgupta S, Switzer WM, Wertheim JO, Hernandez AL. Identifying clusters of recent and rapid HIV transmission through analysis of molecular surveillance data. *JAIDS*. 2018 Dec 15;79(5):543-550. PMID: 30222659.

²⁷France AM, Panneer N, Ocfemia MCB, Saduvala N, Campbell E, Switzer WM, Wertheim JO, Oster AM. Rapidly growing HIV transmission clusters in the United States, 2013–2016. Conference on Retroviruses and Opportunistic Infections, Boston, MA, March 2018.

²⁸Oster AM, Panneer N, Lyss S, Saduvala N, Zhang T, Ocfemia MCB, Linley L, Watson M, McClung RP, Switzer WM, Wertheim JO, Campbell E, Hernandez AL, France AM. Increasing Capacity for Detecting Cluster of Rapid HIV Transmission — United States. Conference on Retroviruses.

identify and expand innovative and technological options to improve adherence and support ongoing medical care, such as mobile text reminders and telehealth.

- Invest in efforts to prevent new HIV transmissions. Jurisdictions will implement interventions to help people at risk for HIV protect themselves. They will support delivery of PrEP in areas and populations with the highest rates of new HIV diagnoses and low PrEP use; increase the number of clinicians offering PrEP; and create peer networks to improve uptake of PrEP. Additionally, where legal and needed, jurisdictions will support comprehensive Syringe Service Programs (SSPs). SSPs provide a suite of care, treatment, and prevention services for people who inject drugs to reduce the transmission of infectious diseases, including HIV and viral hepatitis. Syringe Service Programs can also serve as an entry point to recovery services and overdose prevention.
- To respond to rapidly growing clusters of HIV transmission earlier, CDC will work closely with jurisdictions to provide technical assistance and on the ground support to investigate as well as build local capacity to respond to HIV outbreaks. CDC will work with states to use the data gathered through these efforts to focus prevention and treatment resources on the populations and areas that need them most; and help people with HIV and people at risk for acquiring HIV stay healthy.

CDC expects that effective and innovative activities across all four strategies of the initiative will be employed based on lessons learned in the first two years of implementation, best practices identified in the field, and using the robust HIV data being collected. CDC will continue to work with each community to ensure they have the workforce they need to implement their EHE plans. CDC anticipates this will include experts from multiple disciplines, including, but not limited to—epidemiology, healthcare systems, disease investigation, medicine, science, and public health; and social services.

FY 2022 EHE funding of \$275 million will result in approximately:

- 14,000 people diagnosed with HIV who did not know they had HIV.
- 12,000 people with previously diagnosed HIV infection who had fallen out of care tested and re-linked to care.
- 13,000 people at risk of HIV enrolled in PrEP services and treatment .
- 75-100 HIV clusters or outbreaks responded to and investigated.

Additionally, FY 2022 funding of \$275 million will support:

- Expanding EHE work to CBOs providing HIV prevention services in the EHE communities.
- Hiring approximately 25 CDC supported field staff and 200 public health professionals in the 57 EHE jurisdictions to improve public health capacity for response and implementing HIV prevention activities
- Expanding syringe services programs (SSPs) and services for SSPs in jurisdictions where these programs are legal.
- Increasing self-testing and self-specimen collection for HIV and potentially sexually transmitted infections (STIs) nationwide.
- Improving laboratory capacity to conduct 4th generation HIV testing (i.e., detect both antibodies and p24 antigens) to provide a quicker diagnosis and to provide surge capacity support when responding to outbreaks or emergency responses.
- Modernizing IT and surveillance infrastructure nationwide to streamline surveillance operations and improve data security and communications (i.e., efficient information exchange and rapid data usage).

Viral Hepatitis Budget Request

CDC is the lead agency in the nation's fight against viral hepatitis. Millions of people are living with viral hepatitis, with tens of thousands newly infected every year in the United States. Viral hepatitis is a serious public health threat:

- Viral hepatitis kills thousands of Americans every year and is a leading cause of liver cancer. In 2018, 15,713 Americans died with hepatitis C reported as an underlying or contributing cause of death. The same year 1,649 Americans died with hepatitis B reported as an underlying or contributing cause of death. Although death from hepatitis A infections is relatively rare, it does occur. Recent widespread outbreaks of hepatitis A have led to 37,167 outbreak-associated cases reported to CDC, including 22,754 hospitalizations and 348 deaths since 2016.
- Viral hepatitis is costly and puts significant burden on the U.S. healthcare system. The estimated cost of providing health care services for people living with chronic hepatitis C virus infection is \$15 billion annually.²⁹ Caring for individuals affected by the recent hepatitis A outbreaks have cost the nation more than \$305 million between July 1, 2016 and February 7, 2020.^{30,31}
- Viral hepatitis is increasing. Rising injection drug use associated with the nation's current opioid crisis has fueled dramatic increases in new hepatitis A and C infections. For example, reported new cases of acute hepatitis C infections quadrupled between 2010 and 2018, with more than 50,000 new infections estimated in 2018 alone. Hepatitis C infections are increasing among all age groups, but rates are highest among 20-39 year-olds, including pregnant people, putting newborns at risk. The recent hepatitis A outbreaks comprise the largest increases in hepatitis A infections in the U.S. in nearly two decades, with about 36,000 reported cases in 35 states.

Hepatitis A and hepatitis B are vaccine-preventable. Each vaccine prevents more than 95 percent of infections. Hepatitis B is treatable. Hepatitis B therapy can suppress the virus and lower the risk of liver cancer by 50 percent. Hepatitis C is curable. Over 90 percent of hepatitis C infected persons can be cured of hepatitis C infection with 8-12 weeks of oral therapy. Many people with acute infections of hepatitis A, hepatitis B, or hepatitis C may not experience symptoms or experience symptoms that are non-specific, like fatigue or fever. Four in ten people living with hepatitis C are not aware of their infection and about two-thirds of people living with hepatitis B are not aware. This puts them at risk of serious health effects from lack of treatment and risk of unknowingly spreading the virus to others.

To stop the spread of hepatitis A, hepatitis B, and hepatitis C and save lives, CDC partners with health departments, medical centers, and community based organizations to test, link to care and treatment, prevent, monitor, and respond to viral hepatitis in the United States. In FY 2021, CDC launched the new integrated viral hepatitis surveillance and prevention program that supports core viral hepatitis outbreak response, surveillance, and prevention activities nationwide. Priorities include increasing access to hepatitis B and C testing, prevention and treatment services, state and large city viral hepatitis elimination planning, outbreak detection, and investigation and control.

Test and Link to Care and Treatment

Testing for hepatitis C and hepatitis B, when linked to care and treatment, is cost saving and improves health outcomes. In FY 2020, CDC published new hepatitis C testing recommendations, recommending testing every adult at least once; pregnant people during every pregnancy; and everyone with risk factors regularly.

²⁹Chahal, H. S., Marseille, E. A., Tice, J. A., Pearson, S. D., Ollendorf, D. A., Fox, R. K., et al. (2016, January). Cost-effectiveness of early treatment of hepatitis C virus genotype 1 by stage of liver fibrosis in a U.S. treatment-naive population. *The Journal of the American Medical Association*, 176(1), 65–73. Retrieved October 25, 2017, from <http://archinte.jamanetwork.com/article.aspx?articleid2471608>.

³⁰Hofmeister MG, Yin S, Aslam MV, Teshale EH, Spradling PR. Hepatitis A Hospitalization Costs, United States, 2017. *Emerg Infect Dis*. 2020;26(5):1040-1041. <https://dx.doi.org/10.3201/eid2605.191224>.

³¹This does not include costs of the public health response for state health departments, making the estimated burden even greater.

CDC updated its hepatitis C testing campaign, *Know More Hepatitis*, to reach all adults; the new social media content led to eight million impressions in the first week. CDC also supports partners to promote the multilingual national communications campaign, *Know Hepatitis B*. Focused on improving testing rates for hepatitis B, the campaign has achieved at least 474 million impressions. In addition, CDC has recently undertaken a review of the evidence to update current hepatitis B screening recommendations soon.

CDC partnered with 46 states, three cities and Washington, D.C., to improve hepatitis B and hepatitis C testing, detection, and linkage to care and treatment, which included incorporating viral hepatitis prevention activities into existing public health, clinical care, and community settings. All funded jurisdictions coordinated with local partners to serve populations with greatest prevalence of hepatitis B and/or hepatitis C infection; this support helped to increase the number of people that are tested for these infections, made aware of their infection, and linked to recommended care and treatment services.

While the cost of the cure for hepatitis C has dramatically lowered, barriers to treatment remain, including fibrosis, sobriety, or provider requirements. CDC works with states to facilitate partnerships between federal, state, and local governmental, payer, and provider organizations to identify the best methods for addressing barriers to treatment and reducing costs. CDC supports a National Hepatitis Training Center to develop and maintain *Hepatitis C Online*, a free, self-study, interactive course on hepatitis C for medical providers. Between September 2018 and November 2020, more than 1.19 million total users initiated at least one Hepatitis C Online session. CDC expanded the partnership to add *Hepatitis B Online*, which launched in March 2020 and had more than 11,000 total users initiate at least one session of its course through November 2020.

Prevent

CDC leverages its expertise and resources to prevent new infections by providing:

- Technical assistance to jurisdictions that wish to implement community-based prevention services like syringe services programs in accordance with state and local law, which play a critical role in preventing viral hepatitis among people who inject drugs. These programs do not increase illegal drug use but provide a range of services, including vaccination, testing, linkage to care and treatment, and access to sterile syringes and injection equipment, which can reduce the transmission of viral hepatitis.
- Training to support state and local health department staff in actively identifying networks of viral hepatitis transmission among persons who inject drugs and other disproportionately affected populations to precisely target prevention interventions and prevent outbreaks.
- Data and analyses to public health experts to improve existing or developing new vaccination recommendations, ensuring vaccines are provided to the populations most at risk for infection. CDC is also examining the evidence base for universal vaccination of adults against hepatitis B.

Monitor

Public health surveillance provides data needed to monitor and control the spread of viral hepatitis. Surveillance also helps to ensure that resources are directed to the areas and populations most at risk. Between 2018-2020, CDC worked with 14 states that represented more than 70 percent of the cases reported in the United States. Activities included assisting to improve active surveillance, data completeness, and case notification of viral hepatitis to CDC. Surveillance for viral hepatitis is labor intensive and health departments have limited capacity for collecting, verifying, and reporting the many cases of hepatitis B and hepatitis C in the United States.³² In 2018, only 36 states reported both acute and chronic hepatitis B and hepatitis C to CDC, and less than 40 percent of the case reports included complete risk factor data.

³² Not all states report data to CDC or permit CDC to publish their data in national surveillance reports.

Respond

More than half of states have reported person-to-person outbreaks of hepatitis A since 2016. CDC has provided technical assistance to all states on preventing and responding to viral hepatitis outbreaks, and has deployed epidemiologists, laboratorians, public health advisors, and disease intervention specialists, to provide on-the-ground support for outbreak response in nine states. CDC's laboratory has processed over 5,800 hepatitis A virus specimens since the outbreaks began and continues to support vaccine supply and vaccine policy development. Over 4 million hepatitis A vaccine doses have been administered in response to these outbreaks, and CDC has supported affected states' vaccination planning and provided materials for jurisdictions to use in raising awareness and encouraging vaccination. As of November 2020, seven states declared an end to their outbreaks. CDC continues to disseminate communication materials on new hepatitis A clusters and best practices through ongoing engagement and communication with impacted state and health departments nationwide. CDC's outbreak specific website provides partners and the public with up to date information about hepatitis A outbreaks.

CDC has helped address outbreaks of hepatitis A, other hepatitides and SARS-CoV-2. In FY 2020, CDC viral hepatitis laboratory processed more than 16,000 hepatitis C sequences to support state responses to hepatitis C outbreaks. CDC provided outbreak assistance for the continued hepatitis A outbreak, testing samples from 23 affected states. In addition, CDC's viral hepatitis laboratory also supported the COVID-19 response by testing over 7600 SARS-CoV-2 samples from April 2020 to November 2020.

Budget Request

CDC's FY 2022 request of **\$39,500,000** for Viral Hepatitis is level with FY 2021 Enacted. In FY 2022, CDC will continue efforts to help eliminate the public health threat of viral hepatitis.

CDC will build upon best practices that enable health departments, health clinics, and community organizations to implement viral hepatitis testing and care services through three broad strategies. CDC will continue improving and expanding outbreak response and surveillance, supporting approximately 58 jurisdictions to provide enhanced viral hepatitis surveillance. CDC will increase the number of health systems and providers who test, manage, and treat hepatitis A, hepatitis B and hepatitis C. CDC will continue to mitigate the infectious disease impacts involving injection drug use and increase testing and linkage to care for persons who inject drugs, by implementing in approximately 10 sites expanded testing and prevention services in high-impact settings, including settings that serve people who inject drugs.

To complement these efforts, CDC will focus on several new efforts in support of jurisdictional implementation. The national testing campaign will continue to implement targeted messages to people who inject drugs and healthcare providers that serve people with risk factors for hepatitis C and pregnant people. CDC is working to develop new guidance for viral hepatitis surveillance and reporting based on input from jurisdictions. CDC will require funded jurisdictions to provide CDC with plans for coordinating and collaborating with immunization programs to meet jurisdictional hepatitis A and hepatitis B adult vaccination goals. To expand state elimination and integrated viral hepatitis prevention and surveillance, CDC is identifying best practices and developing toolkits and other to expand CDC's technical assistance to all jurisdictions.

Sexually Transmitted Infections Budget Request

CDC is the only federal agency that directly supports and funds sexually transmitted infection (STI) prevention and control activities of state, territorial, and local health departments. STIs compromise Americans' health and cost billions.³³ Adverse outcomes include pelvic inflammatory disease, infertility, neurological conditions, birth defects, and increased risk of HIV infection. Data from 2018 show there were more cases of chlamydia, gonorrhea, and syphilis (including congenital syphilis in babies) than ever reported before. A strong public health infrastructure is essential to sustain STI prevention programs and respond to increases in disease. Beyond individual and community health impacts, STIs are also an economic drain on the U.S. healthcare system. There are more than 26 million new STI cases annually, costing the healthcare system \$15.9 billion in lifetime direct medical care costs, including 2,500 new STI-attributable HIV cases annually at a cost of more than \$1 billion. Having an STI more than doubles the risk of acquiring or transmitting HIV during sex.³³³⁴

STIs disproportionately occur in young people, and disparities persist in rates of STDs among racial and ethnic minority groups.^{35,36} CDC estimates that youth ages 15–24 make up just over one quarter of the sexually active population, but account for almost half of the new STIs in the United States each year.³⁷ In 2018, the overall rate of reported gonorrhea cases among Black or African American people in the U.S. was 7.7 times the rate among white people. Access to, and routine use of, quality health care including STD prevention and treatment is key to reducing STD disparities in the United States.³⁸ CDC's Community Approaches to Reducing Sexually Transmitted Diseases (CARS) funds community organizations to identify social determinants of health, implement interventions to reduce STIs, and improve health equity. These interventions include enhancing STI and personal health services for adolescent and young adult racial/ethnic, sexual, and gender minorities. CARS awardees have hosted youth town hall meetings and community events to educate and address fear and stigma concerns; conducted provider cultural competence training; connected young people to youth-friendly providers experienced in working with young women of color; linked youth with programs and resources that address transportation and medical service barriers; and worked with partners to conduct STI screening in communities.

Despite being preventable, congenital syphilis, passed from women during pregnancy to their unborn babies, is rapidly increasing. Congenital syphilis results in infant death in up to 40 percent of cases. Among infants who survive, congenital syphilis can cause developmental delays, permanent deafness, neurological impairment, and bone deformities. Pregnant women should access prenatal care early, and their healthcare provider should screen them for syphilis at the first visit and treat them immediately, if infected. Some pregnant women should be tested more than once during pregnancy. Some progress has been made with CDC assistance—in 2018, Louisiana reported the lowest number of congenital syphilis cases in the state since 2014.

CDC provides national leadership, research, policy assessment, and scientific information about STIs to the medical community and the public. CDC coordinates and publishes national *STI Treatment Guidelines and Recommendations*, which translate research into practice and serve as the gold standard for STI care in the United States. Further, CDC supports health departments in all 50 states, Washington, D.C., and select cities and territories to:

³³ Chesson et al. The Estimated Direct Lifetime Medical Costs of Sexually Transmitted Infections Acquired in the United States in 2018. *Sex Transm Dis*. 2021;48(4):215-221. DOI: <https://doi.org/10.1097/olq.0000000000001380>.

³⁴ Kreisel et al. 2021. Sexually Transmitted Infections Among US Women and Men: Prevalence and Incidence Estimates, 2018. *Sex Transm Dis* 2021;48(4):208-214. doi: 10.1097/OLQ.0000000000001355.

³⁵ Newman LM, Berman SM. Epidemiology of STD Disparities in African American Communities. *Sex Transm Dis*. 2008;35(12):S4–S12. DOI: 10.1097/OLQ.0b013e3181818eb90e.

³⁶ Hogben M, Leichter JS. Social determinants and sexually transmitted disease disparities. *Sex Transm Dis*. 2008;35(Suppl 12):S13–18. doi: 10.1097/OLQ.0b013e3181818d3cad.

³⁷ <https://www.cdc.gov/std/life-stages-populations/adolescents-youngadults.htm>.

³⁸ Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2018. Atlanta: U.S. Department of Health and Human Services; 2019. DOI: 10.15620/cdc.79370.

- Collect and analyze information on notifiable STIs (i.e., syphilis, gonorrhea, chlamydia, and chancroid). Health departments reported a record number of chlamydia cases (1.8 million) to CDC in 2018, as well as the highest number of gonorrhea cases (583,405) in any of the past 25 years.
- Conduct disease investigations, contact tracing, and linkage to treatment for patients diagnosed with STIs, including HIV, to reduce adverse health outcomes and prevent further spread of disease.
- Respond and contain outbreaks.
- Ensure appropriate screening to rapidly detect STIs and timely treatment by clinical providers.
- Conduct scientific investigations to better understand how diseases spread throughout the community.
- Support training and education of health and medical professionals involved in STI screening and treatment.

CDC's cost-saving STI program prevents and tracks disease and contains outbreaks. CDC's support and funding over a fifteen-year period from 2005–2019 for syphilis, gonorrhea, and chlamydia prevention activities saved an estimated \$2.8 billion in lifetime averted medical costs.³⁹

The COVID-19 pandemic has impacted STI prevention. Fewer STI tests are being performed due to less demand for testing, and less availability of testing as clinics reduce hours and services, or even close for some period of time.⁴⁰ Shortages of STI testing supplies are also ongoing and pervasive—an American Society for Microbiology survey found that in October 2020, 70% of clinical labs reported a shortage of supplies for tests that detect STIs.⁴¹

CDC's funded STI programs have been leading forces for state and local response to COVID-19. CDC has leveraged existing infrastructure; expanded existing training centers; and used the expertise of disease intervention specialists, an integral part of STI public health programs. STI program staff at state and local health departments are making extraordinary efforts to respond to COVID-19 in their jurisdictions.

Budget Request

CDC's FY 2022 request of **\$161,810,000** for Sexually Transmitted Infections is level with FY 2021 Enacted. To address the substantial increases in the rates of STIs observed in 2019, CDC will continue to conduct STI surveillance and support states to conduct STI prevention and control activities, such as contact tracing. At the FY 2022 requested level, public health programs will continue to support disease intervention specialists as they follow-up and respond to outbreaks. This funding level will also support training and educational materials for healthcare professionals, and studies to translate STI research to practice and to improve program delivery. CDC will also continue to work with state and local grantees to address rising numbers of congenital syphilis cases. CDC continues to support efforts in alignment with the [Sexually Transmitted Infection Federal Action Plan](#). The *Plan* outlines actionable strategies across multiple agencies to address STIs. CDC will continue to bridge implementation science, public health program management, and STI prevention services that are high impact, scalable, cost-effective, and sustainable.

In FY 2022, public health programs will conduct and report county-level surveillance of four reportable STIs (i.e., syphilis, gonorrhea, chlamydia, and chancroid) following strict data and confidentiality guidelines. STI programs will maximize the use of surveillance data to:

- Identify high morbidity areas to focus case management and partner services efforts.
- Monitor STI trends to improve our understanding of how STIs spread throughout communities, so CDC and its partners can implement high-impact prevention and control strategies.
- Improve program management and resource allocation.

³⁹ Chesson HW, Ludovic JA, Berruti AA, Gift TL. Methods for sexually transmitted disease prevention programs to estimate the health and medical cost impact of changes in their budget. *Sex Transm Dis* 2018; 45(1):1-7. DOI: [10.1097/OLQ.0000000000000747](https://doi.org/10.1097/OLQ.0000000000000747).

⁴⁰ <https://www.ncsddc.org/wp-content/uploads/2020/10/Clinic-Call-Report-10.23.2020-final.pdf>.

⁴¹ <https://asm.org/Articles/2020/September/Clinical-Microbiology-Supply-Shortage-Collecti-1>.

- Estimate costs associated with STIs.
- Evaluate if STIs are being treated appropriately, which is especially important for preventing the spread of antibiotic resistant gonorrhea and reducing congenital syphilis.
- Examine complications and manifestations of STIs, such as ocular syphilis (syphilis of the eye), which is increasing at a faster rate than overall syphilis and can cause vision problems or blindness.

CDC and its funded STI programs will support staff, including disease intervention specialists, known as "DIS," who are unique to state and local public health agencies. CDC and its funded entities conduct the following community services:

- Identify and treating partners exposed to STIs.
- Recognizing opportunities to address increasing STI cases, such as establishing maternal review boards in a rapidly increasing number of states to identify and address system failures in the diagnosis and timely treatment of syphilis among pregnant women.
- Providing outreach services to individuals likely to be infected, which can include non-reimbursable STI/HIV testing in non-clinical settings, to control the spread of disease in the community.
- Identifying those who may benefit from HIV pre-exposure prophylaxis (PrEP) and connecting them with clinical and community resources.
- Linking HIV-infected persons seeking STI services and who are not receiving HIV care and treatment.
- Working to contain outbreaks and protecting Americans from STI and other public health emergencies as they arise by leveraging CDC's domestic STI program infrastructure and enhanced contact tracing training, and using the unique skills of disease intervention specialists, who have been deployed in the past to address Zika, Ebola, influenza, anthrax, SARS, and most recently, COVID-19.

CDC will also fund the National Network of STD Clinical Prevention Training Centers (NNPTCs), to ensure that public and private healthcare providers are trained on the most up-to-date clinical science for the screening and treatment of STIs. Many U.S. healthcare workers have limited training and experience diagnosing and treating STIs. NNPTCs offer a variety of courses in both web-based and in-person formats.

CDC will promote its widely utilized, evidence-based *STI Treatment Guidelines*. Visitors to CDC's website have viewed pages in CDC's 2015 STD Treatment Guidelines more than 12.2 million times since they were released. CDC will also work with other federal agencies, manufacturers, and health departments to ensure that providers have access to screening, testing, and recommended medications, such as injectable benzathine penicillin, the primary treatment for most syphilis and the only recommended treatment for pregnant women with syphilis to prevent congenital syphilis. This includes supporting improvements in tracking and predicting demand for treatment by state and local STI programs. In partnership with the NNPTCs, CDC will continue to educate physicians about CDC's recommended gonorrhea treatment, which helps to protect Americans from gonorrhea's increasing antibiotic resistance.

CDC will continue to expand its one-of-a-kind syphilis and gonorrhea laboratory sample repository. CDC and other federal agencies, academic researchers, and industry use this unique repository to test new diagnostics and treatments, including vaccines. CDC's STI lab will work on advancing more effective and efficient responses to syphilis, such as a rapid syphilis point-of-care test. This assessment of new tests and medicines is also urgently needed to address the threat of untreatable gonorrhea. CDC's STI lab and its partners continue genetic work on gonorrhea. To date, CDC has sequenced over 12,500 genomes for gonorrhea with different resistance profiles. They are accessible in public databases for the scientific community. The CDC STI laboratory will continue to serve as a resource for state and local health departments in STI outbreak investigations.

Tuberculosis Budget Request

CDC is the lead agency for eliminating tuberculosis (TB) in the United States, and a global expert in TB research, laboratory science, control, and prevention. CDC is the only U.S. agency that conducts domestic field-based clinical and operational TB research, and is dedicated to TB surveillance and capacity building. Through CDC's support, state health departments across the nation, some large cities, Washington D.C., Puerto Rico, the Virgin Islands, and U.S. territories and Affiliated Pacific Islands:

- Investigate and report every case of TB disease.
- Ensure provision of medical care, laboratory testing, and other services to achieve complete cure of TB patients, which halts further transmission and prevents drug resistance.
- Identify contacts and provide treatment to prevent future TB cases.
- Examine genetic fingerprints of TB isolates (purified TB samples) to find out whether cases are related, and to test for drug resistance.

The United States has one of the lowest TB rates in the world. In 2019, the United States reported 2.7 new TB disease cases per 100,000 persons, or a total of 8,916 cases. This low rate is due to CDC's aggressive strategy of finding each new case of TB disease, and ensuring the person is treated until cured. This strategy also includes thorough contact investigations and providing treatment for people who are sick or infected. Not only has this strategy improved and saved American lives, it has also had a positive economic effect. Over a 20-year period, U.S. TB control efforts prevented as many as 319,000 cases of TB and averted up to \$14.5 billion, including costs from TB deaths.⁴²

However, TB disease disproportionately harms people who have historically experienced greater obstacles to health. The percentage of TB cases that occur in Hispanic, Black/African American, and Asian people is higher than expected based on the percentage of these minorities in the United States. The rate of TB cases per 100,000 Black or African-American persons is over eight times higher than the rate of TB disease in non-Hispanic White people (0.5 cases per 100,000 population), eight times higher for Hispanic/Latino people than for non-Hispanic White people, 8 times higher for American Indian/Alaska Native people, and 31 times higher for Asian people than for non-Hispanic White people. TB also disproportionately affects people who have prolonged contact with someone who is sick with TB disease, particularly in facilities for people experiencing homelessness or living in correctional or long term care facilities.

To eliminate TB in the United States, CDC embraces a dual approach that includes case finding and treatment for TB disease, plus prevention of new cases by testing and treating people with Latent TB Infection (LTBI). CDC estimates that up to 13 million people in the United States have LTBI, which has no symptoms and cannot be transmitted. While contacts to people with infectious TB disease are routinely evaluated and treated during health departments' contact investigations, most people with LTBI are unaware of their infection and do not receive preventive services. However, if bacteria in an LTBI-positive person multiply, the person can become sick with TB disease and transmit it to others. More than 80 percent of U.S. TB cases result from reactivated LTBI. CDC has developed a treatment regimen for LTBI that is far safer and easier to tolerate than the previously used nine months of isoniazid. Expanding targeted testing and treatment efforts would greatly reduce the number of TB cases and costs associated with TB.

In addition to limited capacity to expand testing and treatment for LTBI, U.S. TB programs experience frequent shortages of the drugs used in treating TB disease and LTBI. During 2020, TB programs' access to ethambutol (one of the four drugs in the drug-susceptible TB disease treatment regimen), rifabutin (used to treat TB in people with HIV), and rifapentine (which can be used to treat LTBI and TB disease) was disrupted. Global supply

⁴² These numbers represent the outer limits of the ranges of cases and costs averted, as published in Tuberculosis Contact Investigations — United States, 2003–2012 (Young et. al., MMWR, 2016). Available at: <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a1.htm>.

chain problems have worsened as countries that produce active pharmaceutical ingredients and manufacture drugs grapple with the COVID-19 pandemic.

CDC's U.S. TB programs across the nation have been leveraged to respond to the COVID-19 pandemic. TB program resources such as hospital isolation rooms and TB program personnel have been deployed to COVID responses because of their decades of experience in contact tracing, infection control, and providing medical care for people in respiratory isolation. Preliminary data show that TB incidence during 2020 (2.2 cases per 100,000 persons) was 20 percent lower than that during 2019 (2.7 cases). This steep decline might be the result of reduced transmission and undetected cases. Health care providers should consider TB disease in patients with signs and symptoms consistent with TB, and the public should be encouraged to seek medical care when needed. Timely TB diagnoses save lives and prevent the spread of TB.

Investing in health departments to control and prevent TB

CDC funds state, local, and territorial health departments to find and treat cases of TB disease, and to identify, evaluate, and treat close contacts who may be infected to prevent them from developing TB disease. Every year, TB programs evaluate about 400,000 people for latent TB infection resulting from their recent exposure to someone with TB disease. In FY 2020, CDC awarded Tuberculosis Elimination and Laboratory cooperative agreements to 50 states, eight large cities, Washington, D.C., and two territories. Awards total approximately \$76 million per year for five years. CDC distributes available resources according to a formula that directs resources to jurisdictions with higher numbers of cases and where cases occur among racial and ethnic minorities, people with HIV, and risk factors such as substance use disorders.

CDC also provides on-site epidemiologic and programmatic assistance at the request of State health departments to assist with large or complex outbreaks; for example, in 2021 CDC provided on-site assistance in response to an outbreak of drug-susceptible TB in a healthcare facility that spread to a neighboring state. In 2020, CDC published information in the MMWR summarizing recommendations after assisting the State of Ohio address multi-drug resistant TB among employees in a food production facility. Given the nonspecific signs and symptoms of TB, health care providers should consider TB when examining patients with cough, chest pain, weight loss and other symptoms suggestive of TB, especially among people with TB risk factors, such as birth in countries with high TB incidence or recent contact with a person with infectious TB.

Providing world-class training and laboratory services

Delayed detection and diagnosis of TB disease, as well as delayed reporting of TB disease remains a challenge in TB prevention and treatment. CDC funds TB Centers of Excellence (COEs), which have increased human resource development through education and training activities and increased the capacity for appropriate medical evaluation and management of persons with TB disease and LTBI through medical consultation. At the end of the most recent 5-year budget period, the COEs provided over 4,320 hours of training to 42,856 participants and provided 14,586 medical consultations to providers with TB patients.

CDC serves as the National Tuberculosis Reference Laboratory and as a source of innovation, including development and deployment of advanced molecular detection (AMD) methods. CDC continues to offer health departments molecular detection of drug resistance (MDDR) for isolates upon request, allowing the rapid identification of cases of drug-resistant TB. Molecular tests produce results within days, instead of the weeks required for culture-based testing, providing health departments and clinicians with timely information on how to best treat patients and protect their communities. CDC's TB laboratory also offers whole-genome sequencing services, which increases health departments' ability to identify matching cases of TB disease, providing an ever-clearer picture of locations where recent transmission of TB disease has occurred. To build capacity to conduct whole-genome sequencing for isolates from all newly-diagnosed U.S. TB patients, CDC established the National Tuberculosis Molecular Surveillance Center (NTMSC) in Michigan. When specific mutations associated with drug resistance are detected, CDC alerts TB programs to rapidly ensure further testing for drug resistance.

Leading domestic TB clinical and field research with global impact

CDC's TB Trials Consortium (TBTC) conducts clinical trials that build the evidence base for guidelines used all over the world for diagnosing, preventing, and treating TB. For example, in 2020, CDC released findings from an international, randomized, controlled, open label, phase three non inferiority clinical trial, which is the first to identify a shorter treatment regimen in almost 40 years. Shortening treatment for TB disease can benefit patients, families, healthcare providers and health systems. This is especially important in the era of COVID-19, which has caused widespread disruptions to care and treatment access for many people with TB disease. In addition, CDC released results from a two-year study that demonstrated electronic directly observed therapy (eDOT) was at least as effective as traditional in-person DOT for ensuring high adherence to treatment while enabling patient-centered care for tuberculosis (TB) disease. The study was conducted by New York City Department of Health and Mental Hygiene, CDC, and Columbia University to compare eDOT with traditional, in-person directly observed therapy (DOT).

CDC's research forms the evidence base for guidelines that are used globally. In 2020 CDC, the American Thoracic Society, the Infectious Diseases Society of America, and the European Respiratory Society released new practice guidelines emphasizing use of oral as opposed to injectable medications for the Treatment of Drug-Resistant Tuberculosis. CDC also updated LTBI treatment recommendations, which preferentially recommend regimens that are shorter and easier for patients to tolerate.

CDC also funds the TB Epidemiologic Studies Consortium (TBESC), which conducts epidemiologic, behavioral, economic, laboratory, and operational research to discover better approaches to TB control and prevention. TBESC is currently carrying out an evaluation of the three available tests for LTBI, which is the largest study of its kind to date and will enable clinicians to select a TB test that that will be most accurate and convenient for patients. Additionally, the Consortium is studying algorithms to estimate LTBI prevalence at any county or state level. Both studies will advance the knowledge required to successfully expand targeted testing and treatment for LTBI.

Addressing TB program preparedness at the national level

Approximately 1 percent of U.S. TB cases are multidrug-resistant, and 10 percent are resistant to one of the four front-line TB drugs. Drug-resistant TB cases are expensive to treat, and the regimens are difficult for patients to tolerate. CDC works to prevent drug-resistant TB from developing in the first place. One of the most effective ways to prevent drug-resistant TB is to ensure treatment is completed without interruption; however, TB drug shortages have affected more than 80 percent of TB control programs and resulted in treatment interruptions.

Budget Request

CDC's FY 2022 request of **\$135,034,000** for Tuberculosis is level with FY 2021 Enacted. At this funding level, CDC will support 50 states, eight large cities, Washington, D.C., and two territories to conduct TB surveillance and oversee the medical and public health management of persons with TB and their contacts. CDC will fund four TB Centers of Excellence to provide training and technical assistance for contact tracing, outreach, and case management, TB educational materials, and medical consultation for healthcare professionals treating TB patients, particularly those with complex or drug-resistant cases. CDC will offer state-of-the-art TB laboratory services to health departments, free of charge. CDC's newly-recompeted TB clinical trials consortium, (TBTC) will focus on improving treatment for TB disease, particularly among children and people living with HIV/AIDS.

To implement CDC and U.S. Preventive Services Task Force recommendations to test and treat LTBI among people who are at risk for LTBI, CDC will continue to work with health departments, professional associations, and other groups.

Infectious Diseases and the Opioid Epidemic Budget Request

The United States is experiencing a public health crisis involving injection drug use—of opioids such as heroin, fentanyl, and prescription opioids—as well as other drugs such as methamphetamines and cocaine. Not only has this public health crisis resulted in large increases in overdose deaths, but also tens of thousands of viral hepatitis infections annually and stalled progress made in HIV prevention.^{43,44,45} Outbreaks of hepatitis C, hepatitis B and HIV infections associated with injection drug use continue to occur.^{46,47} Invasive Methicillin-Resistant Staphylococcus Aureus (MRSA) infection rates related to injection drug use have increased 100 percent between 2012 and 2018. Rates of infective endocarditis, a life-threatening infection of the heart valves that can occur in people who inject drugs, have also increased.^{48,49} Since 2019, CDC’s program to address the infectious diseases associated with substance use focuses on four key strategies.

Increase testing and linkage to care in local communities

CDC has intensified efforts to test people who inject drugs for hepatitis B and hepatitis C and to link those who test positive to care and treatment. Leveraging funds from Infectious Diseases and the Opioid Epidemic and Viral Hepatitis, nine jurisdictions received a total of \$3.5 million in FY 2019 to focus screening efforts in high-impact settings, including syringe service programs (SSPs). Between September 2019 - March 2020, 2,179 people were tested for hepatitis B infection and 92 percent of those confirmed with hepatitis B infection were linked to care and treatment. Additionally, 17,251 people were tested for hepatitis C infection and of the 3,842 who tested HCV-antibody positive, 52 percent were diagnosed with hepatitis C infection.

Ensure implementation of and access to high quality syringe services programs nationwide

Nearly thirty years of research proves that comprehensive syringe services programs are safe, effective, and cost-saving. Additionally, they do not increase illegal drug use or crime and play an important role in reducing the transmission of viral hepatitis, HIV and other infections. As of January 2021, 44 states and Washington D.C., Cherokee Nation (Oklahoma), and Puerto Rico have conducted CDC-guided data collection confirming the need to support syringe service programs. Results from a recent study indicate that syringe services programs in Philadelphia and Baltimore averted 10,582 (Philadelphia) and 1,891 (Baltimore) HIV diagnoses in a 10-year period. The 1-year return on investment in syringe services programs in Philadelphia were \$243.4 million and in Baltimore were \$62 million respectively.⁵⁰ CDC continues to fund organizations that provide technical assistance to strengthen the capacity and improve the performance for syringe services programs and implement data management for syringe services programs. In the first two years, CDC has:

- Established the National Harm Reduction Technical Assistance Center, a nationwide technical assistance (TA) program for states and local jurisdictions developing or implementing syringe services programs. In the first six months, 33 TA requests were fielded to support, reaching 25 organizations. CDC has expanded the Center's capacity in year two by adding two new technical assistance providers.
- Funded eight SSPs to implement patient navigation programs with the first cohort enrolling 288 clients; more than 100 clients receiving navigation services to medications for opioid use disorder or another

⁴³ Centers for Disease Control and Prevention. (2018). Drug overdose death data.

⁴⁴ Centers for Disease Control. (2018). Surveillance for Viral Hepatitis — United States, 2016.

⁴⁵ Centers for Disease Control and Prevention. (2016). Vital signs: HIV and injection drug use.

⁴⁶ Comer M, Matthias J, Nicholson G, Asher A, Holmberg S, Wilson C. Notes from the field: Increase in acute hepatitis B infections — Pasco County, Florida, 2011–2016. *MMWR Morb Mortal Wkly Rep* 2018;67:230–231. DOI: <http://dx.doi.org/10.15585/mmwr.mm6707a6>.

⁴⁷ Harris AM, Iqbal K, Schillie S, et al. Increases in acute hepatitis B virus infections — Kentucky, Tennessee, and West Virginia, 2006–2013. *MMWR Morb Mortal Wkly Rep* 2016;65:47–50. <http://dx.doi.org/10.15585/mmwr.mm6503a2>.

⁴⁸ Data from ~800 hospitals representing 20% of U.S. hospital discharges showed rates of admissions for endocarditis associated with substance use disorder increased by 225% from 2012 to 2017, with 39.4% of endocarditis admissions in 2017 having a diagnosis of substance use disorder.

⁴⁹ McCarthy NL et al, Bacterial Infections Associated with Substance Use Disorders, Large Cohort of United States Hospitals, 2012-2017. *CID*. Published online ahead of print 2021. <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa008/5697426>.

⁵⁰ Ruiz MS, O'Rourke A, Allen ST, et al. Using interrupted time series analysis to measure the impact of legalized syringe exchange on HIV diagnoses in Baltimore and Philadelphia. *J Acquir Immune Defic Syndr*. 2019;82(suppl 2):S148–S154.

substance use treatment program, and almost 70 clients receiving services related to HIV or viral hepatitis care and treatment.

- Developed and disseminated guidance on how SSPs can provide services amid the COVID-19 pandemic.

Increase state and local capacity to detect and respond to infectious disease clusters and prevent further transmission

In FY 2020, CDC leveraged funding for viral hepatitis surveillance, outbreak response, and prevention services for people who inject drugs in 50 jurisdictions. Additionally, CDC awarded funding to the seven rural states affiliated with the Ending the HIV Epidemic. CDC, in collaboration with partners, convened state health officials and teams from Kentucky, Ohio, and West Virginia to identify cross-jurisdiction coordination strategies and tactics to support a tri-state response framework for infectious diseases associated with substance use. CDC funding supports the development of an algorithm to guide cross-jurisdictional data sharing related to infectious diseases associated with injection drug use.

Increase linkage to substance use disorder treatment at healthcare encounters for IDU related infections

In FY 2020, CDC initiated two projects focused on accelerating progress toward linking to substance use disorder treatment at healthcare encounters and preventing the spread of and treating those with bacterial infectious diseases associated with injection drug use. Efforts include tracking infective endocarditis at the national and sub-national levels to improve healthcare quality and target interventions and assessing risk factors, complications, management and outcomes to identify linkage to care and prevention services opportunities.

Budget Request

CDC’s FY 2022 request of **\$19,500,000** for Infectious Diseases and the Opioid Epidemic is **\$6,500,000** above the FY 2021 Enacted. In FY 2022, increased CDC funding will provide critical support for:

- Testing, diagnosis, linkage to care and treatment for infectious diseases related to injection drug use
- Implementation of and access to high-quality syringe services programs nationwide
- State and local capacity to detect and respond to infectious disease clusters and prevent transmission
- Linkage to SUD treatment at healthcare encounters for injection drug use related infections

CDC will maintain support for jurisdictions to implement comprehensive, outcome-focused approaches to preventing infections associated with injection drug use, reducing overdose deaths, and linking people to substance use disorder treatment. CDC efforts will leverage existing partnerships in high-impact settings, including syringe services programs and in healthcare encounters for injection drug use related infections. FY 2022 investments will also support education and training to ensure providers and health systems are testing, managing, and treating patients for infections and monitoring their care. In FY 2022, CDC will expand support for syringe services programs and will continue to raise awareness on how communities can play a role in preventing overdoses and infectious diseases, while also addressing stigma.

CDC-Wide HIV/AIDS Funding

Fiscal Year	Domestic HIV/AIDS Prevention and Research (Infectious Disease)	Global HIV/AIDS Program	CDC-Wide HIV Total
2013 ¹	\$768.635	\$125.254	\$893.889
2014	\$786.712	\$128.420	\$915.132
2015	\$786.712	\$128.421	\$915.133
2016	\$788.712	\$128.421	\$917.133
2017	\$786.868	\$128.120	\$914.988
2018	\$786.101	\$127.985	\$914.086
2019	\$788.712	\$128.421	\$917.133
2020	\$928.712	\$128.421	\$1,057.133
FY 2021 Enacted	\$964.712	\$128.421	\$1,093.133
FY 2022 President's Budget	\$1,064.712	\$128.421	\$1,193.133

¹ FY 2013 levels comparably adjusted to reflect the FY 2014 BSS transfer to implement the Working Capital Fund.

State Table: Integrated HIV Prevention and Surveillance Funding ^{1,2,3,4}

	FY 2020 Final	FY 2021 Enacted⁴	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$8,300,812	\$8,305,800	TBD	TBD
Alaska	\$1,033,859	\$1,033,859	TBD	TBD
Arizona	\$8,304,250	\$8,180,643	TBD	TBD
Arkansas	\$3,973,178	\$3,972,483	TBD	TBD
California	\$30,397,683	\$30,392,562	TBD	TBD
Colorado	\$5,217,100	\$5,217,100	TBD	TBD
Connecticut	\$4,472,957	\$4,469,420	TBD	TBD
Delaware	\$1,353,327	\$1,353,327	TBD	TBD
Florida	\$49,371,623	\$49,366,864	TBD	TBD
Georgia	\$23,340,465	\$23,336,661	TBD	TBD
Hawaii	\$1,676,489	\$1,676,489	TBD	TBD
Idaho	\$1,054,018	\$1,054,018	TBD	TBD
Illinois	\$4,962,660	\$4,955,966	TBD	TBD
Indiana	\$6,055,623	\$6,055,623	TBD	TBD
Iowa	\$1,621,114	\$1,617,925	TBD	TBD
Kansas	\$1,233,569	\$1,233,569	TBD	TBD
Kentucky	\$4,352,612	\$4,352,612	TBD	TBD
Louisiana	\$10,477,213	\$10,477,213	TBD	TBD
Maine	\$1,070,549	\$1,075,537	TBD	TBD
Maryland	\$11,627,380	\$11,659,220	TBD	TBD
Massachusetts	\$9,448,037	\$9,448,037	TBD	TBD
Michigan	\$8,327,694	\$8,327,694	TBD	TBD
Minnesota	\$2,985,919	\$2,984,325	TBD	TBD
Mississippi	\$5,365,071	\$5,365,071	TBD	TBD
Missouri	\$7,220,560	\$7,220,560	TBD	TBD
Montana	\$1,029,059	\$1,029,059	TBD	TBD
Nebraska	\$1,103,683	\$1,103,683	TBD	TBD
Nevada	\$5,408,291	\$5,410,161	TBD	TBD
New Hampshire	\$1,063,128	\$1,062,781	TBD	TBD
New Jersey	\$17,799,326	\$17,798,631	TBD	TBD
New Mexico	\$1,306,349	\$1,306,349	TBD	TBD
New York	\$14,874,693	\$14,874,693	TBD	TBD
North Carolina	\$13,543,064	\$13,543,064	TBD	TBD
North Dakota	\$1,000,000	\$1,000,000	TBD	TBD
Ohio	\$11,994,794	\$11,994,794	TBD	TBD
Oklahoma	\$4,173,748	\$4,173,748	TBD	TBD
Oregon	\$2,500,170	\$2,500,170	TBD	TBD
Pennsylvania	\$6,929,484	\$6,929,484	TBD	TBD
Rhode Island	\$1,419,305	\$1,419,305	TBD	TBD
South Carolina	\$8,675,541	\$8,675,541	TBD	TBD
South Dakota	\$1,026,481	\$1,026,481	TBD	TBD
Tennessee	\$8,805,169	\$8,805,169	TBD	TBD
Texas	\$26,685,198	\$26,680,896	TBD	TBD
Utah	\$1,151,670	\$1,151,670	TBD	TBD
Vermont	\$1,000,000	\$1,000,000	TBD	TBD
Virginia	\$8,275,532	\$8,273,795	TBD	TBD
Washington	\$7,424,923	\$7,424,923	TBD	TBD
West Virginia	\$1,096,121	\$1,095,774	TBD	TBD
Wisconsin	\$2,884,088	\$2,884,088	TBD	TBD
Wyoming	\$1,015,468	\$1,015,468	TBD	TBD

	FY 2020 Final	FY 2021 Enacted⁴	FY 2022 President's Budget	FY 2022 +/- FY 2021
Cities				
Baltimore	\$6,938,438	\$6,938,438	TBD	TBD
Chicago	\$11,887,395	\$11,887,396	TBD	TBD
Houston	11,313,963	\$11,313,963	TBD	TBD
Los Angeles	\$22,146,754	\$22,146,754	TBD	TBD
New York City	\$44,171,783	\$44,173,235	TBD	TBD
Philadelphia	\$9,936,954	\$9,936,954	TBD	TBD
San Francisco	\$9,747,418	\$9,747,071	TBD	TBD
Washington, D.C.	\$9,076,686	\$9,084,168	TBD	TBD
Territories				
Puerto Rico	\$8,412,408	\$8,536,319	TBD	TBD
Virgin Islands	\$1,029,968	\$1,029,968	TBD	TBD
Subtotal States	\$365,429,047	\$365,312,305	TBD	TBD
Subtotal Cities	\$125,219,391	\$125,227,979	TBD	TBD
Subtotal Territories	\$9,442,376	\$9,566,287	TBD	TBD
Total Resources	\$500,090,814	\$500,106,571	TBD	TBD

¹ CFDA NUMBER: 93-940 [Discretionary]

² This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/>

³ Additional resources requested for FY 2021 will be awarded through a different mechanism.

⁴ FY 2021 Enacted totals include Ending the HIV Epidemic (EHE) awards level with FY 2020 Final.

State Table: Sexually Transmitted Disease Prevention ^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$1,702,436	\$1,617,314	\$1,551,532	-\$65,782
Alaska	\$359,617	\$360,614	\$362,385	\$1,771
Arizona	\$1,849,284	\$1,903,322	\$1,928,157	\$24,835
Arkansas	\$1,054,250	\$1,001,537	\$984,677	-\$16,860
California	\$7,385,729	\$7,719,732	\$7,856,912	\$137,180
Colorado	\$1,317,681	\$1,343,820	\$1,357,540	\$13,720
Connecticut	\$827,427	\$827,128	\$830,372	\$3,244
Delaware	\$384,107	\$398,257	\$404,357	\$6,100
Florida	\$5,232,840	\$5,348,104	\$5,406,277	\$58,173
Georgia	\$3,403,310	\$3,417,435	\$3,435,711	\$18,276
Hawaii	\$440,141	\$450,023	\$454,977	\$4,954
Idaho	\$363,470	\$370,344	\$374,021	\$3,677
Illinois	\$2,299,555	\$2,308,938	\$2,321,235	\$12,297
Indiana	\$1,699,970	\$1,716,275	\$1,728,377	\$12,102
Iowa	\$724,102	\$735,102	\$741,561	\$6,459
Kansas	\$730,832	\$738,096	\$743,380	\$5,284
Kentucky	\$1,084,483	\$1,123,144	\$1,139,949	\$16,805
Louisiana	\$1,984,984	\$1,885,735	\$1,855,032	-\$30,703
Maine	\$310,067	\$300,000	\$300,000	\$0
Maryland	\$1,332,369	\$1,342,023	\$1,350,504	\$8,481
Massachusetts	\$1,587,012	\$1,611,405	\$1,625,651	\$14,246
Michigan	\$2,530,085	\$2,506,109	\$2,508,612	\$2,503
Minnesota	\$1,269,071	\$1,299,323	\$1,314,170	\$14,847
Mississippi	\$1,231,090	\$1,169,536	\$1,144,760	-\$24,776
Missouri	\$1,645,859	\$1,691,390	\$1,712,669	\$21,279
Montana	\$310,067	\$300,000	\$300,000	\$0
Nebraska	\$499,281	\$508,998	\$514,136	\$5,138
Nevada	\$926,535	\$959,926	\$974,400	\$14,474
New Hampshire	\$310,067	\$300,000	\$300,000	\$0
New Jersey	\$2,288,069	\$2,173,665	\$2,080,155	-\$93,510
New Mexico	\$694,178	\$709,517	\$717,249	\$7,732
New York	\$2,424,079	\$2,456,730	\$2,477,009	\$20,279
North Carolina	\$2,998,621	\$3,041,937	\$3,067,964	\$26,027
North Dakota	\$310,067	\$300,000	\$300,000	\$0
Ohio	\$3,113,614	\$3,119,968	\$3,134,577	\$14,609
Oklahoma	\$1,147,956	\$1,171,634	\$1,183,879	\$12,245
Oregon	\$1,012,244	\$1,054,275	\$1,071,872	\$17,597
Pennsylvania	\$2,228,372	\$2,256,839	\$2,274,984	\$18,145
Rhode Island	\$356,233	\$362,506	\$365,959	\$3,453
South Carolina	\$1,525,661	\$1,526,303	\$1,532,667	\$6,364
South Dakota	\$336,500	\$343,130	\$346,619	\$3,489
Tennessee	\$1,870,676	\$1,818,678	\$1,809,512	-\$9,166
Texas	\$7,399,106	\$7,551,349	\$7,630,153	\$78,804
Utah	\$654,416	\$672,485	\$680,935	\$8,450
Vermont	\$310,067	\$300,000	\$300,000	\$0
Virginia	\$2,097,312	\$2,113,635	\$2,127,347	\$13,712
Washington	\$1,836,434	\$1,812,891	\$1,812,734	-\$157
West Virginia	\$520,648	\$494,616	\$469,885	-\$24,731
Wisconsin	\$1,319,991	\$1,326,488	\$1,333,903	\$7,415
Wyoming	\$310,067	\$300,000	\$300,000	\$0

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Cities				
Baltimore	\$1,046,952	\$994,604	\$944,874	-\$49,730
Chicago	\$1,864,775	\$1,813,690	\$1,804,793	-\$8,897
Los Angeles	\$3,266,404	\$3,324,265	\$3,356,049	\$31,784
New York City	\$4,578,451	\$4,349,529	\$4,132,052	-\$217,477
Philadelphia	\$1,810,300	\$1,719,785	\$1,633,796	-\$85,989
San Francisco	\$1,121,030	\$1,116,104	\$1,119,045	\$2,941
Washington, D.C.	\$893,484	\$848,810	\$806,370	-\$42,440
Territories				
Puerto Rico	\$1,016,685	\$976,937	\$968,263	-\$8,674
Virgin Islands	\$300,000	\$300,000	\$300,000	\$0
Subtotal States	\$79,550,032	\$80,160,276	\$80,538,757	\$378,481
Subtotal Cities	\$14,581,396	\$14,166,787	\$13,796,979	-\$369,808
Subtotal Territories	\$1,316,685	\$1,276,937	\$1,268,263	-\$8,674
Total Resources	\$95,448,111	\$95,604,000	\$95,604,000	\$0

¹ CFDA NUMBER: 93-977 [Discretionary]

² Amounts reflect new assistance and include HIV/STD coinfection funds

³ This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

State Table: TB Prevention and Control ^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$1,096,200	\$1,096,200	\$1,096,200	\$0
Alaska	\$571,779	\$571,779	\$571,779	\$0
Arizona	\$1,613,779	\$1,613,779	\$1,613,779	\$0
Arkansas	\$652,746	\$652,746	\$652,746	\$0
California	\$8,807,703	\$8,807,703	\$8,807,703	\$0
Colorado	\$535,492	\$535,492	\$535,492	\$0
Connecticut	\$555,766	\$555,766	\$555,766	\$0
Delaware	\$181,503	\$181,503	\$181,503	\$0
Florida	\$4,960,858	\$4,960,858	\$4,960,858	\$0
Georgia	\$2,504,121	\$2,504,121	\$2,504,121	\$0
Hawaii	\$1,003,699	\$1,003,699	\$1,003,699	\$0
Idaho	\$187,520	\$187,520	\$187,520	\$0
Illinois	\$1,481,231	\$1,481,231	\$1,481,231	\$0
Indiana	\$839,058	\$839,058	\$839,058	\$0
Iowa	\$415,248	\$415,248	\$415,248	\$0
Kansas	\$405,046	\$405,046	\$405,046	\$0
Kentucky	\$628,065	\$628,065	\$628,065	\$0
Louisiana	\$945,655	\$945,655	\$945,655	\$0
Maine	\$250,332	\$250,332	\$250,332	\$0
Maryland	\$1,406,578	\$1,406,578	\$1,406,578	\$0
Massachusetts	\$1,709,981	\$1,709,981	\$1,709,981	\$0
Michigan	\$1,061,690	\$1,061,690	\$1,061,690	\$0
Minnesota	\$1,365,142	\$1,365,142	\$1,365,142	\$0
Mississippi	\$646,182	\$646,182	\$646,182	\$0
Missouri	\$702,194	\$702,194	\$702,194	\$0
Montana	\$181,940	\$181,940	\$181,940	\$0
Nebraska	\$259,365	\$259,365	\$259,365	\$0
Nevada	\$664,919	\$664,919	\$664,919	\$0
New Hampshire	\$171,423	\$171,423	\$171,423	\$0
New Jersey	\$2,192,732	\$2,192,732	\$2,192,732	\$0
New Mexico	\$357,686	\$357,686	\$357,686	\$0
New York	\$1,522,455	\$1,522,455	\$1,522,455	\$0
North Carolina	\$1,679,562	\$1,679,562	\$1,679,562	\$0
North Dakota	\$186,048	\$186,048	\$186,048	\$0
Ohio	\$1,080,561	\$1,080,561	\$1,080,561	\$0
Oklahoma	\$611,649	\$611,649	\$611,649	\$0
Oregon	\$619,132	\$619,132	\$619,132	\$0
Pennsylvania	\$900,925	\$900,925	\$900,925	\$0
Rhode Island	\$190,622	\$190,622	\$190,622	\$0
South Carolina	\$859,457	\$859,457	\$859,457	\$0
South Dakota	\$197,868	\$197,868	\$197,868	\$0
Tennessee	\$1,035,673	\$1,035,673	\$1,035,673	\$0
Texas	\$7,883,899	\$7,883,899	\$7,883,899	\$0
Utah	\$279,266	\$279,266	\$279,266	\$0
Vermont	\$161,543	\$161,543	\$161,543	\$0
Virginia	\$1,540,577	\$1,540,577	\$1,540,577	\$0
Washington	\$1,566,912	\$1,566,912	\$1,566,912	\$0
West Virginia	\$174,253	\$174,253	\$174,253	\$0
Wisconsin	\$570,307	\$570,307	\$570,307	\$0
Wyoming	\$155,691	\$155,691	\$155,691	\$0

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Cities				
Baltimore	\$196,706	\$196,706	\$196,706	\$0
Chicago	\$1,027,052	\$1,027,052	\$1,027,052	\$0
Houston	\$1,677,097	\$1,677,097	\$1,677,097	\$0
Los Angeles	\$4,559,479	\$4,559,479	\$4,559,479	\$0
New York City	\$4,479,967	\$4,479,967	\$4,479,967	\$0
Philadelphia	\$591,378	\$591,378	\$591,378	\$0
San Diego	\$1,968,551	\$1,968,551	\$1,968,551	\$0
San Francisco	\$846,917	\$846,917	\$846,917	\$0
Washington, D.C.	\$323,411	\$323,411	\$323,411	\$0
Territories				
Puerto Rico	\$537,026	\$537,026	\$537,026	\$0
Virgin Islands	\$118,000	\$118,000	\$118,000	\$0
Subtotal States	\$59,572,033	\$59,572,033	\$59,572,033	\$0
Subtotal Cities	\$15,670,558	\$15,670,558	\$15,670,558	\$0
Subtotal Territories	\$655,026	\$655,026	\$655,026	\$0
Total Resources	\$75,897,617	\$75,897,617	\$75,897,617	\$0

¹ CFDA NUMBER: 93-116 [Discretionary]

² Amounts reflect new assistance and include HIV/TB coinfection funds. Amounts do not include funding under Direct Assistance.

³ This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

State Table: Viral Hepatitis Surveillance and Prevention ^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$252,875	\$315,000	TBD	\$0
Alaska	\$252,875	\$315,000	TBD	\$0
Arizona	\$254,000	\$315,000	TBD	\$0
Arkansas	\$255,125	\$315,000	TBD	\$0
California	\$515,250	\$315,000	TBD	\$0
Colorado	\$255,126	\$315,000	TBD	\$0
Connecticut	\$267,500	\$315,000	TBD	\$0
Delaware	\$196,970	\$315,000	TBD	\$0
Florida	\$499,237	\$617,983	TBD	\$0
Georgia	\$543,253	\$338,873	TBD	\$0
Hawaii	\$199,070	\$238,500	TBD	\$0
Idaho	\$163,515	\$315,000	TBD	\$0
Illinois	\$0	\$315,000	TBD	\$0
Indiana	\$490,602	\$627,010	TBD	\$0
Iowa	\$262,142	\$601,228	TBD	\$0
Kansas	\$0	\$315,000	TBD	\$0
Kentucky	\$537,907	\$605,648	TBD	\$0
Louisiana	\$823,557	\$339,926	TBD	\$0
Maine	\$212,210	\$315,000	TBD	\$0
Maryland	\$252,875	\$315,000	TBD	\$0
Massachusetts	\$715,250	\$625,696	TBD	\$0
Michigan	\$508,500	\$315,000	TBD	\$0
Minnesota	\$257,235	\$315,000	TBD	\$0
Mississippi	\$252,875	\$315,000	TBD	\$0
Missouri	\$252,876	\$257,824	TBD	\$0
Montana	\$125,000	\$315,000	TBD	\$0
Nebraska	\$213,956	\$255,392	TBD	\$0
Nevada	\$252,764	\$314,366	TBD	\$0
New Hampshire	\$255,125	\$315,000	TBD	\$0
New Jersey	\$599,572	\$339,831	TBD	\$0
New Mexico	\$223,295	\$315,000	TBD	\$0
New York	\$0	\$315,000	TBD	\$0
North Carolina	\$604,000	\$340,000	TBD	\$0
North Dakota	\$184,780	\$315,000	TBD	\$0
Ohio	\$435,976	\$323,484	TBD	\$0
Oklahoma	\$505,092	\$334,738	TBD	\$0
Oregon	\$513,103	\$601,228	TBD	\$0
Pennsylvania	\$265,250	\$315,000	TBD	\$0
Rhode Island	\$505,126	\$601,228	TBD	\$0
South Carolina	\$512,868	\$315,000	TBD	\$0
South Dakota	\$0	\$0	TBD	\$0
Tennessee	\$605,121	\$340,000	TBD	\$0
Texas	\$255,126	\$315,000	TBD	\$0
Utah	\$445,813	\$455,437	TBD	\$0
Vermont	\$188,180	\$315,000	TBD	\$0
Virginia	\$261,037	\$315,000	TBD	\$0
Washington	\$661,128	\$638,761	TBD	\$0
West Virginia	\$790,843	\$393,182	TBD	\$0
Wisconsin	\$254,488	\$315,000	TBD	\$0
Wyoming	\$194,161	\$310,910	TBD	\$0

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Cities				
Baltimore	\$0	\$601,228	TBD	\$0
Chicago	\$218,047	\$315,000	TBD	\$0
Dallas	\$0	\$315,000	TBD	\$0
Houston	\$0	\$315,000	TBD	\$0
Los Angeles	\$0	\$601,228	TBD	\$0
New York City	\$498,450	\$601,228	TBD	\$0
Philadelphia	\$200,000	\$601,228	TBD	\$0
San Francisco	\$0	\$315,000	TBD	\$0
Washington, D.C.	\$502,875	\$315,000	TBD	\$0
Territories				
Puerto Rico	\$0	\$315,000	TBD	\$0
Subtotal States	\$17,072,622	\$12,744,661	TBD	\$0
Subtotal Cities	\$1,419,372	3,664,912	TBD	\$0
Subtotal Territories	\$0	\$315,000	TBD	\$0
Total Resources	\$18,491,994	\$16,724,573	TBD	\$0

¹ CFDA NUMBER: 93-270

² This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial awardees). For a more comprehensive view of grant and cooperative agreement funding to awardees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

³ Table reflects viral hepatitis resources and additional resources provided to states from the Infectious Disease Consequences of the Opioid Epidemic.

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EMERGING AND ZONOTIC INFECTIOUS DISEASES

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$583.772	\$596.272	\$626.272	+\$30.000
PPHF	\$52.000	\$52.000	\$52.000	+\$30.000
Total Request	\$635.772	\$648.272	\$678.272	+\$30.000
FTEs	1,339	1,508	1,508	0
-- Antibiotic Resistance Initiative	\$170.000	\$172.000	\$172.000	\$0
-- Vector-borne Diseases	\$38.603	\$42.603	\$42.603	\$0
-- Lyme Disease	\$14.000	\$16.000	\$16.000	\$0
-- Prion Disease	\$6.000	\$6.500	\$6.500	\$0
-- Chronic Fatigue Syndrome	\$5.400	\$5.400	\$5.400	\$0
-- Emerging Infectious Diseases ¹	\$190.997	\$192.997	\$192.997	\$0
-- <i>Mycotic Diseases (non-add)</i>	\$2.000	\$4.000	\$4.000	\$0
-- Food Safety	\$63.000	\$65.000	\$65.000	\$0
-- National HealthCare Safety Network	\$21.000	\$21.000	\$21.000	\$0
-- Quarantine ¹	\$42.772	\$42.772	\$72.772	+\$30.000
-- Advanced Molecular Detection (AMD)	\$30.000	\$30.000	\$30.000	\$0
-- Harmful Algal Blooms	\$2.000	\$2.000	\$2.000	\$0
-- <i>Epi and Lab Capacity program (PPHF)</i>	\$40.000	\$40.000	\$40.000	\$0
-- <i>Healthcare-Associated Infections (PPHF)</i>	\$12.000	\$12.000	\$12.000	\$0

¹ FY 2020 Final Level is comparably adjusted to reflect Congressionally accepted budget alignments between accounts.

Enabling Legislation Citation: PHS A § 264, PHS A § 301, PHS A § 304, PHS A § 307, PHS A § 308, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317P*, PHS A § 317R*, PHS A § 317S*, PHS A § 317T*, PHS A § 319, PHS A § 319D*, PHS A § 319E*, PHS A § 319F, PHS A § 319G*, PHS A § 321, PHS A § 322, PHS A § 325, PHS A § 327, PHS A § 352, PHS A § 353, PHS A § 361-369, PHS A § 399V-5, PHS A § 1102, PHS A § 2821*, Bayh-Dole Act of 1980 (Pub. L. 96-517).

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural, Contracts, and Competitive Grants/Cooperative Agreements

CDC defends the country against public health threats by preventing and controlling a wide range of infectious diseases. These threats include diseases caused by bacteria (like anthrax or *Salmonella*), by viruses (like Zika or Ebola), or by fungi (like Valley fever). CDC prevents and controls zoonotic disease outbreaks using a One Health approach that brings together human, animal, and environmental health sectors. Three out of every four new or emerging infectious diseases in people comes from animals. Factors like climate change, travel, migration, and disruption to the natural environment contribute to our increasing contact with animals. CDC’s world-class scientists, researchers, laboratorians, and emergency responders reduce illness and death associated with these infectious diseases, whether spread intentionally or unintentionally, through several core functions:

- **Outbreak response:** Providing rapid scientific and technical support during outbreaks of infectious disease. This includes unique scientific expertise for more than 800 pathogens as well as technical expertise to support critical elements of an outbreaks, such as the COVID-19 pandemic response. Historical examples include yellow fever in Angola and Brazil, Zika in the western hemisphere, Ebola in the Democratic Republic of the Congo (DRC), emerging and resistant infections like *Candida auris* and carbapenemase-producing *Enterobacteriaceae* pathogens (i.e. CRE), and numerous foodborne outbreaks in the United States.

- **Surveillance:** Operating disease surveillance systems that serve as early warning systems, enabling rapid response of CDC’s experts to detect and protect the public. CDC systems cover well-known infectious diseases and less familiar, but equally dangerous, threats and are critical to help target and monitor prevention efforts. Surveillance is critical to identifying emerging threats and controlling outbreaks.
- **Laboratory expertise:** CDC labs advance disease detection and identification, providing early warning for emerging or changing germs, and serve as reference laboratories for the United States and world. Our labs develop state-of-the-art diagnostic tools, research new targets for drug and vaccine development, and house pathogens for research that do not exist elsewhere in the United States, such as smallpox.
- **Promoting health equity and addressing disparities in emerging infectious diseases:** CDC works to reduce and prevent infectious diseases that disproportionately affect American Indian and Alaska Native people. This includes work in Rocky Mountain spotted fever, Hantavirus, and prevention of healthcare-associated infections. The Arctic Investigations Program (AIP) particularly focuses on infectious disease in Alaska Native populations.
- **Support to state and local health departments:** The Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) program works to reduce illness and deaths caused by a wide range of infectious diseases. The ELC cooperative agreement is one of CDC’s key mechanisms providing direct financial support to all 50 states, several cities, and U.S. territories and affiliates for surveillance, detection, response, and prevention of infectious diseases and offering recipients strategic direction and technical assistance.

These core functions were critical to CDC’s quick initial domestic response to the COVID-19 pandemic. As of November 20, 2020, over 1,500 employees from CDC’s National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) have provided direct support for COVID-19 response efforts, such as tracking COVID-19 infections in nursing home facilities through the National Healthcare Safety Network (NHSN), sequencing the DNA of viruses through Advanced Molecular Detection (AMD), and managing 20 U.S. quarantine stations and travel guidance. With funding from the Paycheck Protection and Health Care Enhancement Act, the Coronavirus Response and Relief Supplemental Appropriations Act of 2021, and the American Rescue Plan of 2021, CDC has invested nearly \$40 billion for testing, contact tracing, surveillance, and related activities, including testing in schools. Of this, the largest single investment for any one CDC program—over \$19.11 billion of COVID-19 emergency supplemental funding—was dispersed through the ELC cooperative agreement to all 64 recipients, to help states and localities support COVID-19 needs and activities.

CDC’s FY 2022 request of **\$678,272,000** for Emerging and Zoonotic Infectious Diseases, including **\$52,000,000** from the Prevention and Public Health Fund, is **\$30,000,000** above the FY 2021 Enacted level. The COVID-19 pandemic has demonstrated the need to rapidly respond to the spread of communicable diseases by travelers. CDC will modernize public health programs that protect U.S. communities from infectious diseases and scale-up migration systems that will protect the United States during future international outbreaks and pandemics, including but not limited to, an expanded quarantine network with 24/7 coverage at the most heavily trafficked airports and land border crossings, a modernized and flexible traveler management program, increased capacity for health screening and traveler education at U.S. airports during emergencies, and an enhanced CDC maritime public health surveillance systems that would allow CDC to rapidly identify and respond to maritime public health risks.

NATIONAL CENTER FOR EMERGING AND ZOO NOTIC INFECTIOUS DISEASES

BY THE NUMBERS

- **>800**—Pathogens NCEZID protects against, including ones transmitted via food, water, or vector animals; bioterror threats like anthrax; infections spread in healthcare settings; and drug-resistant threats.
- **>\$238 million**—non-COVID funds awarded to state, local, and territorial health departments through the ELC cooperative agreement in FY 2020 to strengthen jurisdictions' core and cross-cutting epidemiology, laboratory, and health information systems capacity.¹
- **760,000**—People screened at U.S. airports and CDC Quarantine stations for SARS-CoV-2.
- **>290**—CDC expanded operations at specific quarantine stations to ensure nationwide, continuous availability and access to IV artesunate to minimize deaths from severe malaria in returning U.S. travelers. Between April 2019 and July 2020, CDC quarantine stations distributed the lifesaving medication to over 290 critically ill people.
- **15**—Airports where CDC worked quickly to screen travelers and collect their contact data so that state and local health departments could potentially monitor for symptom development to reduce the risk of onward transmission of SARS-CoV-2 in local communities.
- **270,000**—Foodborne illnesses prevented every year by PulseNet, saving the economy at least \$500 million dollars. By using whole genome sequencing to find clusters of diseases, CDC disease detectives are better able to find the outbreak sources, alert the public sooner, and uncover gaps in our food safety systems.²
- **>40**—New diagnostic tests for rare and/or deadly pathogens developed in the last two years, including a new molecular test for detecting the rabies virus that is more accurate and faster than other currently available tests.
- **9,500**—To date, the AR Laboratory Network has detected more than 9,500 alerts across One Health regarding unusual resistance that often require a containment response.³
- **~37,000**—Healthcare facilities actively reporting patient safety and/or COVID-19 data to CDC's National Healthcare Safety Network (NHSN), the nation's most widely used healthcare quality improvement system. For the first time, all of the more than 15,400 CMS-certified nursing homes in the country reported essential COVID-19 resident, staff, and supply data to the federal government through NHSN.
- **382**—Published Travel Health Notices for cruise ships and domestic travel to reduce the risk of SARS-CoV-2 transmission.
- **~\$11 billion**—One-time supplemental funds awarded to state, local, and territorial health departments through the ELC cooperative agreement for COVID-19 testing, surveillance, contact tracing and other response efforts and to strengthen public health surveillance.

*References:

¹ <https://www.cdc.gov/ncezid/dpei/epidemiology-laboratory-capacity.html>

² Scharff, R. L., Besser, J., Sharp, D. J., Jones, T. F., Peter, G. S., & Hedberg, C. W. (2016, May). An Economic Evaluation of PulseNet: A Network for Foodborne Disease Surveillance. <https://www.ncbi.nlm.nih.gov/pubmed/26993535/>

³ <https://www.cdc.gov/drugresistance/solutions-initiative/ar-lab-networks.html>

*Unless otherwise noted, all information and calculations are from CDC program data.

Emerging and Zoonotic Infectious Diseases Funding History	
Fiscal Year	Dollars (in millions)
2018 (BA)	\$552.702
2018 (PPHF)	\$52.000
2019 (BA)	\$571.859
2019 (PPHF)	\$52.000
2020 (BA)	\$583.772
2020 (PPHF)	\$52.000
2021 Enacted (BA)	\$596.272
2021 Enacted (PPHF)	\$52.000
2022 President's Budget (BA)	\$626.272
2022 President's Budget (PPHF)	\$52.000

Vector-Borne Diseases Budget Request

The United States is increasingly vulnerable to vector-borne disease threats. These diseases are caused by viral, bacterial, or parasitic pathogens transmitted by the bite of an infected arthropod, such as ticks, mosquitoes, fleas, and other insects. These infected vectors transmit the pathogens that cause tickborne Lyme disease and Rocky Mountain spotted fever (RMSF), mosquito-borne West Nile, Zika, and dengue viruses, and flea-borne plague. Together, vector-borne diseases account for 17 percent of the estimated global burden of all infectious disease. Climate change is likely to have a significant impact on the incidence and distribution of diseases carried by vectors. Longer and warmer summers, shorter and milder winters, fewer frost days, and increased frequency of severe and unpredictable weather events mean mosquitoes become active earlier in the season and populations may increase more rapidly.

Nationally, there has been a steady increase in the incidence of vector-borne disease, causing illness and death in every state and territory in the United States. These trends strain health departments charged with implementing prevention and control strategies, and 84 percent of local health departments report missing critical capacities to respond to vector-borne disease threats.

- Since 2004, vector-borne disease cases have tripled, marked by mosquito-borne outbreaks and a doubling of reported cases of tickborne disease. The total number of the most common vector-borne diseases cases is estimated to be as much as 10 times higher than the number reported.
- More than 763,000 cases of vector-borne disease have been reported to CDC from 2004-2018, and more vector-borne disease pathogens continue to be identified.

A major contributor to increases in vector-borne disease is the geographic expansion of mosquitoes and ticks across the United States. *Aedes aegypti* and *Ae. albopictus* mosquitoes are the primary vectors for Zika, dengue, and chikungunya and are now established throughout much of the United States and its territories. *Ae. aegypti* also transmits yellow fever. Species of ticks have moved further north, west, and south in recent years. The tick spreading the bacteria that cause Lyme disease and six other pathogens, *Ixodes scapularis*, is now found in nearly half of all counties in the United States.

Compounding the risks associated with the geographic expansion of mosquito and tick vectors is the increasing number of domestic vector-borne disease pathogens. In the last 13 years, 10 new vector-borne pathogens were identified in the United States, including chikungunya and Zika viruses, the first human case of Keystone virus, and the discovery of seven new tickborne pathogens.

CDC's vector-borne diseases program is the bedrock of the nation's ability to detect, control, and prevent the spread of bacteria and viruses by vectors. CDC's vector-borne disease scientists serve as global experts with deep expertise in entomology, microbiology, and public health that does not exist elsewhere. In FY 2019, CDC provided funding to all 50 states, five large cities (including Washington, D.C.), five U.S. territories and jurisdictions, and other domestic and international partners to support activities that protect the health of Americans from vector-borne diseases. Recent increased investments in vector-borne disease prevention and control have better positioned CDC and state and local health departments to build public prevention and control capacity and enhance surveillance for vector-borne diseases' spread. These activities include:

Developing and supporting clinician and laboratory capacity to rapidly diagnose vector-borne diseases

CDC supports domestic and international diagnostic laboratories by developing guidelines for performing tests, distributing testing reagents and supplies, and performing confirmatory testing for difficult or complex cases. In 2019, CDC improved testing speed, accuracy, and reliability for vector-borne diseases.

- **Laboratory testing:** CDC produced and shipped reagents to perform or facilitate more than 1,342,031 tests in 2019 to diagnose vector-borne bacterial and viral infections worldwide.

- **Arboviral disease diagnostics:** In 2019, scientists ran over 18,000 sequencing reactions (e.g., viruses, clones, antibodies, etc.), performed over 15,800 tests in-house, and facilitated over 642,000 tests. These activities ensure that public health departments can identify the presence of endemic and emerging viruses and respond as early as possible.
- **Lyme disease diagnostics:** CDC continues development of a new diagnostic tests for all stages of Lyme disease. These efforts include improvements to existing blood tests as well as the evaluation of innovative molecular and RNA-based diagnostics.

Developing innovative technologies and discovering new solutions

CDC developed and evaluated innovative technologies to prevent and control the spread of diseases from mosquitoes, ticks, and fleas. Recent innovations include:

- **Registration of nootkatone, a new compound for use in insecticides and repellents:** On August 10, 2020, the U.S. Environmental Protection Agency (EPA) announced registration of the CDC-discovered and CDC-developed compound for manufacturing use in insecticides and repellents. Nootkatone works as well as—or better than—other EPA-registered active ingredients in use and appears to kill biting pests in a unique way. This means that insecticides made with nootkatone can help the fight against mosquitoes that have become resistant to current insecticides.
- **Discovering Lyme disease prevention tools:** Only one in 10 Lyme disease cases are reported to CDC by state health departments. CDC scientists have been working to understand the complex interactions between ticks, animals, and people, including understanding disease risk and burden, developing alternative surveillance strategies, improving early and accurate diagnosis and treatment, and building effective collaborations with prevention partners. CDC supports the development and identification of promising Lyme disease prevention tools through the Emerging Infections Program and the Vector-Borne Disease Regional Centers of Excellence (COEs). CDC is evaluating commercially available tick control or tick bite prevention products, including permethrin-treated clothing, household pesticides, and chemical and non-chemical pesticides, including a fungus, that can be used as part of an integrated tick management approach.
- **Enhancing local capacity and discovering local solutions:** The five Vector-Borne Disease Regional COEs build capacity in health departments and the vector control workforce by applying innovative research and training and strengthening collaboration with partners. Between 2018 and 2020, all five COEs engaged modelers and vector control decision-makers to participate in the *Aedes* Forecasting Challenge 2019, which was an open forecasting challenge to predict the monthly presence of *Ae. aegypti* and *Ae. albopictus* in a subset of U.S. counties during the 2019 calendar year.
- **Discovery of new tickborne pathogens:** In 2020, CDC scientists announced that two bacterial species were identified in humans for the first time: a relapsing fever *Borrelia* and a species of *Anaplasma*. In partnership with the Minnesota Department of Health, the Mayo Clinic, and Vanderbilt University Medical Center, CDC conducted this research using a new AMD method called 16S metagenomics to identify if there were any specific tickborne bacteria that could have caused illness in 13,000 patients who were suspected of having tickborne illnesses. This success highlights the value of AMD methods to discover new, medically relevant bacteria, enhance detection and discovery of tickborne pathogens, and simplify diagnostic testing for tickborne diseases. These results may be used in the future to develop diagnosis and treatment protocols for these two new tickborne pathogens.

Conducting surveillance to quickly detect disease vectors and cases of disease

Vector surveillance systems allow for national, state, and local-based monitoring of specific vectors that pose risks for outbreaks in people, which inform vector control and management activities within states and localities. CDC operates three vector or vector-borne disease surveillance systems:

- **ArboNET:** The national surveillance system for arboviruses, ArboNET, is implemented in all 50 states, territories, and affiliated states and supports human case investigations, collecting and testing of mosquitoes, and promoting laboratory testing nationwide. In addition to human disease cases, ArboNET maintains data on arboviral infections among blood donors, veterinary disease cases, mosquitoes, dead birds, and sentinel animals.
- **MosquitoNET:** A web-based data system for participating states and local vector control agencies to report on the presence of mosquitoes and the results of insecticide resistance testing. MosquitoNET enables CDC and states to regularly demonstrate where mosquito vectors can be found throughout the United States and its territories, informing prevention and control efforts.
- **TickNET:** A collaborative public health effort that includes laboratory surveys, high-quality prevention trials, and pathogen discovery. TickNET fosters surveillance, research, education, and prevention of tickborne diseases.

In 2020, CDC continued to work with state and local health departments to provide Zika testing validation panels to ensure testing capacity in state health department laboratories and provide confirmatory testing at CDC. Through this testing, CDC was able to test and rule out Zika virus infections in 80 pregnant people who were considered probable cases by states. These negative results were able to reassure pregnant people, their clinicians, and local public health officials and ensure proper clinical care. Throughout the year, ArboNET data were used to track reported Zika virus disease cases or asymptomatic infections in blood donors or pregnant people and was shared with partners on a bi-weekly basis. No confirmed local Zika virus disease cases reported in United States during 2020.

In 2021, CDC will continue to offer enhanced diagnostic testing and assistance with surveillance to ensure that timely testing and surveillance are available to detect and control vector-borne diseases throughout the United States.

Increased funding in FY 2020 provided through the ELC cooperative agreement now supports tick surveillance and pathogen detection in 25 jurisdictions. Approximately 15,000 ticks were tested by CDC for five human pathogens since 2018. CDC uses these data to update tick and tickborne pathogen distribution maps for medically important ticks in the United States. In addition, to better support tick surveillance in states and local communities, CDC developed and new guidance was released in 2020 on non-Ixodes hard ticks (metastriate ticks). These resources all provide practical guidance to public health professionals as they characterize their tickborne disease risk and develop prevention and control plans.

With increased FY 2021 funding, CDC will continue to work with states to balance vector-borne disease staffing needs and ensure continued expansion of state and local capacity for vector-borne disease prevention and control through the Epidemiology and Laboratory Capacity for Prevention and Control of Emerging and Infectious Diseases cooperative agreement.

Responding quickly to outbreaks and emerging vector-borne disease threats

CDC is committed to stopping the spread of contagions, including vector-borne diseases. For example, 2019 saw the greatest number of confirmed cases of eastern equine encephalitis in 50 years (38 cases, 15 deaths); CDC has been working closely with states to monitor the emergence of the disease in the United States. Other response activities include:

- **Implementing novel vector control strategies for dengue prevention:** In 2020, the number of dengue outbreaks around the world increased dramatically, including an increase of cases in U.S. territories. As of November 2020, 436 cases of locally acquired dengue in Puerto Rico were reported to CDC, which is the largest number reported during this period in the territory in more than five years. There were also 68 cases of locally acquired dengue in Florida, which is the highest number of this type of cases reported to CDC from Florida since 2010. In response, CDC collaborated with the Puerto Rico Vector Control Unit

to implement a new technology recently approved by the EPA for demonstration projects in Puerto Rico. This new technology releases sterile, non-biting male mosquitoes. When these mosquitoes mate with wild females, their eggs do not hatch. Releasing large numbers of these mosquitoes over time has been shown to dramatically reduce numbers of *Ae. aegypti* mosquitoes in communities. This non-chemical strategy for reducing numbers of mosquitoes may protect people in high-risk areas from mosquito bites, and the strategy is currently being evaluated for its impact on mosquito-borne disease prevention in southern Puerto Rico.

- **Monitoring and preparing for an emerging tickborne disease vector:** CDC continues to collaborate with U.S. Department of Agriculture, state public health departments, and CDC's Regional Vector-Borne Disease COEs to monitor the expansion of the invasive Asian longhorned tick, *Hemaphysalis longicornis*. The tick was first found in the United States in 2017. To date, the tick has been found in 14 states. The Asian longhorned tick causes massive infestations and is a known vector of several pathogens throughout the world. Soon after discovery in the United States, CDC established an Asian longhorned tick colony and conducted laboratory studies to determine if this tick can spread pathogens to people. These studies suggest that this tick is unlikely to transmit the bacteria that causes Lyme disease in the United States, but it can transmit *Rickettsia rickettsii*, the bacteria that causes the potentially deadly tickborne disease Rocky Mountain spotted fever. CDC has also provided technical assistance to states as requested, including deploying CDC experts to train and support staff in Asian long horned tick surveillance and vector-borne disease prevention and control efforts.

Increased funding in FY 2021 (\$4,000,000 for Vector-Borne Diseases and \$2,000,000 for Lyme disease and related disorders) will make possible additional investments in the priority activities authorized by the Kay Hagan TICK Act P.L. 116-94. The additional resources will be used to conduct a variety of extramural activities, including:

- Expanding state and local capacity for vector-borne disease prevention and control through the Epidemiology and Laboratory Capacity for Prevention and Control of Emerging and Infectious Diseases cooperative agreement,
- Conducting applied research through research contracts and by providing additional funding to the Centers of Excellence in Vector-Borne Diseases, which support applied research to inform the prevention of Lyme disease and other tickborne diseases;
- Collaborating with the Office of the Assistant Secretary for Health, other federal agencies, and the Tick-borne Disease Working Group to produce a National Strategy for Vector-Borne Disease Prevention and Control in Humans; and
- Increasing clinical and public education outreach on the prevention, diagnosis, and treatment of Lyme disease and other tickborne diseases.

These additional resources will be used to advance intramural priority activities to: develop and implement methods to improve surveillance and accurately report to tickborne disease burden; support syndromic surveillance activities as an indicator of real time data for reporting tickborne disease risk; generate estimates of the prevalence of Post-Treatment Lyme Disease Syndrome; identify improved diagnostics for tickborne diseases; and launch additional public and clinician education for tickborne disease prevention, diagnosis, and treatment.

Budget Request

CDC's FY 2022 request of **\$58,603,000** for Vector-Borne Diseases is level with FY 2021 Enacted. Specifically, CDC will continue efforts to address critical needs in the nation's vector control system, by:

- Improving and developing diagnostic tests, including tests that diagnose Lyme and other tickborne diseases at every stage of disease, and collaborating with research institutions to monitor the emergence of new vectors and diseases. Innovation in disease diagnostics could improve the

performance of existing tests, decrease cross-reactivity across multiple pathogens, and improve detection at multiple stages of illness.

- Providing support for tickborne and other vector-borne disease prevention and control to 64 jurisdictions through the ELC cooperative agreement, with enhanced support to select states at high risk for vector-borne disease outbreaks. Each enhanced vector-borne disease program includes increased state entomological expertise, as well as increased laboratory activities, case and outbreak investigations, and surveillance and management. CDC will sustain FY 2020 efforts to increase support to states and territories at high risk for tickborne disease to ensure they can detect and respond to tickborne diseases, informed by best practices.
- Working with state and local partners to evaluate and implement prevention strategies (such as pesticides and repellents).
- Prioritizing prevention by developing better vector control tools, vaccines, and other prevention tools; implementing studies to evaluate these tools; and providing education to the public and healthcare providers.

Advanced Molecular Detection (AMD) Budget Request

The Advanced Molecular Detection (AMD) program is a cross-cutting and collaborative program that introduces and helps establish biotechnology-focused innovation to public health programs. The AMD program works with disease-specific programs throughout CDC, including viral diseases such as COVID-19 and influenza, to help adapt innovative biotechnologies to public health applications, then pilot and scale up those applications—giving programs a pathway to implement AMD technologies within their fields. The AMD program provides key shared technology services as well as workforce development programs at CDC and in state and local health departments to prepare microbiologists and epidemiologists to take on biotechnology-driven innovations. Innovative biotechnology-driven methods such as microbial genomics will ensure that CDC receives and produces higher quality data, detects outbreaks sooner, and responds more effectively—ultimately saving lives and reducing costs. Additionally, AMD technologies are helping CDC to understand, characterize, and control antibiotic resistance (AR) and develop and target prevention measures, including vaccines.

Once COVID-19 cases appeared in the United States, CDC began sequencing and doing SARS-CoV-2 Strain Surveillance to build a collection of virus specimens and sequences to support public health response. Routine analysis of these available genetic sequence data enables a targeted approach to identify variant viruses for further characterization. In May 2020, the AMD program initiated the Sequencing for Public Health Emergency Response, Epidemiology and Surveillance (SPHERES) consortium, joining more than 150 different institutions across the United States that were sequencing SARS-CoV-2 in the pursuit of strengthening the response to COVID-19. SPHERES labs have submitted many of the U.S. SARS-CoV-2 genetic sequences published in publicly available databases. As a collection, virus genome sequences have been utilized to characterize and track the evolution of the SARS-CoV-2 virus during transmission within communities, hospitals, managed care facilities and other areas where outbreaks have frequently occurred. To further participation of public health laboratories in these efforts, the AMD program released \$15,000,000 in supplemental funding in December to support SARS-CoV-2 sequencing. The data provided through these efforts allow the national to track variants and are a key component of monitoring diagnostics and vaccines. Sequencing during the COVID-19 pandemic shows how genomics can be a driving force in future response and mitigation efforts.

CDC's AMD program supports state public health laboratories through grants for equipment, supplies, and training. In addition, it assists state and local public health laboratories to perform microbial genomics testing to detect and characterize pathogens. For example, as a result of AMD support in 2019, the Florida Department of Health increased microbial genomic sequencing efforts for three additional pathogens, thereby expanding the laboratory's capability to detect and characterize microbes causing meningitis, Legionnaires' disease and tuberculosis. Additionally, the Wisconsin State Laboratory of Hygiene provided training, computational resources, and ad-hoc analyses that impacted public health in the Midwest Region, including investigating COVID-19. In fact, AMD-supported regional collaborations enabled several state public health laboratories to start sequencing SARS-CoV-2 specimens very early on in the COVID-19 pandemic response.

Many AMD-supported state public health laboratories have established collaborative relationships with academic groups. These collaborations encourage and enable transfer of biotechnology expertise and capability into the public health laboratory as well as provide enhanced capacity for microbial genomics. For example, in 2019, the Georgia Public Health Laboratory partnered with CDC's Emerging Infections Program colleagues and Emory University to sequence *Haemophilus influenzae* isolates to confirm an emerging strain of non-typeable *Haemophilus influenzae* in HIV-positive patients. During the COVID-19 pandemic, the Virginia Division of Consolidated Laboratory Services, working alongside CDC and international public health and university partners, became one of the first state public health labs to use specialized equipment and computer software to piece together the genetic makeup of SARS-CoV-2. Similarly, the Washington Public Health Laboratory has been working with the University of Washington and the Fred Hutchinson Cancer Research Center to create microbial sequencing capacity. To date, this collaborative sequencing group has publicly shared over 4,000 SARS-CoV-2 sequences related to outbreaks in managed care facilities and in the community. The Minnesota

Department of Health’s Public Health Laboratory—one of the first state public health laboratories to sequence and assemble the whole genome of SARS-CoV-2—is now working to establish the Minnesota molecular surveillance of SARS-CoV-2 initiative by teaming up with University of Minnesota, Mayo Clinic and other clinical facilities in Minnesota to perform near-real time outbreak and exposure investigation.

Through investments in AMD technologies, CDC is producing improvements in both public health outcomes and preparedness in dozens of areas such as foodborne disease, influenza, antibiotic resistance, hepatitis, pneumonia, and meningitis. One example of how AMD investments are being leveraged is in foodborne illness. The AMD program has partnered with CDC’s PulseNet, a national laboratory network that connects foodborne illness cases to detect outbreaks using a microbial genomics technology called whole genome sequencing to detect and help solve outbreaks. The network’s 83 public health and food regulatory laboratories use whole genome sequencing to characterize foodborne pathogens such as *Salmonella*, *Shigella*, *Listeria*, and *Campylobacter*. As a result of existing capability, several state public health laboratories quickly transferred whole genome sequencing capacity to work on COVID-19 at the beginning of the pandemic, thereby leveraging five years of AMD investment.

Budget Request

CDC’s FY 2022 request for **\$30,000,000** for Advanced Molecular Detection and Response to Infectious Disease Outbreaks is level with the FY 2021 Enacted. In FY 2022, the AMD program will continue to focus on five key areas:

- **Innovating through research and development:** The AMD program serves as a model for how CDC can rapidly take advanced, complex technologies (i.e. next-generation sequencing and bioinformatics), bring them into the U.S. public health system, and rapidly implement them to protect the health of Americans. Using this model and through COVID-19 supplements, AMD was able to support several new COVID-19-focused research projects that aim to integrate various sources of genomic data to better understand patient risk factors, clinical outcomes, and transmission dynamics. Investments in this type of innovation could strengthen, modernize, and innovate tools for gathering, interpreting, and sharing data for a variety of pathogens.
- **Deploying AMD technologies across a wider range of diseases:** The program has supported adoption of AMD technologies at state and local health departments in many disease areas including COVID-19, foodborne illness, hepatitis C, influenza, meningitis, and Legionnaires’ disease, but there remain many more areas where the technologies are applicable and can create efficiencies. This technology will almost certainly play a role in responding to the next emerging infectious disease threat, as it has in recent outbreaks of coronaviruses, Ebola, Zika, and *C. auris*.
- **Enhancing technological infrastructure:** Application of sequencing and related technologies requires access to infrastructure such as high-performance computing and expertise in specialized areas, including bioinformatics. In 2018, CDC developed a regional network of state-based bioinformatics experts to make this happen. Such an approach promotes collaboration among states and is leading to a robust, resilient infrastructure. This infrastructure has been repeatedly utilized during the COVID-19 pandemic and allows states and communities to better support COVID-19 response and mitigation efforts. The rapid increase in sequencing currently under way in state health departments will require expansion of existing services to maintain system reliability and rapid turnaround time.
- **Modernizing the workforce:** Although AMD technologies carry great potential, sufficient laboratory and bioinformatics capacities, along with highly skilled staff, are essential to extract and interpret relevant information from the massive amount of sequencing data rendered. Training CDC scientists and state public health staff in methods for pathogen genetic sequencing, analysis, and interpretation is critical. To this end, CDC’s AMD program offers molecular epidemiology training to state epidemiologists. From January to July 2020, virtual training/learning sessions related to scientific computing and bioinformatic had record levels of participation. To support the COVID-19 response, the AMD program developed a

collection of short training modules, the “COVID-19 Genomic Epidemiology Toolkit,” for use by epidemiologists in state and local health departments.

- **Enhancing opportunities for collaborative investigations:** The AMD program recently implemented a collaborative initiative between universities/research institutions and state and local public health departments to improve public health capacity and improving U.S. public health. By utilizing COVID-19 supplemental funding, AMD can establish national and regional baselines for sequence-based surveillance for the continued assessment of risk profiles of circulating virus variants. Future investments can adapt and expand this work beyond the COVID-19 pandemic to respond to other public health outbreaks.

The AMD program has developed microbial genomics capacity throughout the U.S. public health system for over 13 years. The COVID-19 pandemic has highlighted the importance of laboratory capacity and the need for an adept, adaptive laboratory workforce to respond to emerging infections and apply novel technologies, such as next-generation sequencing. Next-generation sequencing and related technologies are continuing to advance at an astounding pace—much faster than the rapid rate of advances in other technological areas, such as computer processing. This technologic revolution is showing no signs of slowing down, resulting in greater capacity, lower costs, and increased automation, all of which are opening opportunities both in the private sector and in public health. Continued investment to keep up with ongoing, rapid changes in physical technology and innovation in public health will be crucial to ensuring CDC’s ability to take advantage of these advances while also ensuring ongoing, dedicated support for innovation both at CDC and at state and local public health laboratories.

Emerging Infectious Diseases

Protecting Americans from zoonotic and emerging infections—infections that have increased recently or are threatening to increase in the near future—necessitate a broad range of public health activities, including prevention, preparedness, and response, at many levels (local, state, national, and global) because diseases and people move across borders. CDC's investments to address infectious diseases aim to:

- Create, support, and maintain disease tracking systems.
- Support modern and efficient laboratories with well-trained scientists.
- Prepare and equip outbreak investigation and response teams.
- Develop tools for effective epidemiologic, statistical, analytic, policy, and communication approaches.
- Support a public health workforce with deep expertise across a broad range of pathogens.

Controlling High-Consequence Pathogens and Zoonotic Disease

CDC conducts disease detection and control activities that protect the United States from dangerous viral, bacterial, and unknown infectious agents, both at home and abroad. Some of these pathogens occur naturally in the United States, like hantavirus, anthrax, rabies, brucellosis, and leptospirosis, while others emerge globally yet pose a threat to health security everywhere, such as Ebola, Nipah virus, Rift Valley Fever, and monkeypox. Many of these pathogens are considered bioterrorism threats and are regulated as Tier 1 select agents. From 2018 to 2020, CDC worked with international partners to respond to the 10th outbreak of Ebola in the Democratic Republic of the Congo (DRC), the world's second largest outbreak of Ebola. Despite security challenges hampering direct deployment to the field, CDC helped bring the outbreak to an end by developing tools that improved our understanding of the chains of transmission, and by drafting field guidance for Ebola rapid diagnostic tests to help quickly detect new cases in the community. CDC implemented similar tools and best practices from recent responses to the 11th outbreak in DRC. By containing outbreaks like Ebola at their source, CDC helps stop these dangerous diseases from causing illness in the United States.

Responding to the challenge of these new diseases requires an understanding of where pathogens reside, and how people become infected. CDC works to improve the understanding the natural sources of these deadly diseases. CDC researchers work around the globe to investigate the sources of disease outbreaks, developing and deploying science-based approaches to preventing new outbreaks from occurring and controlling outbreaks where they start:

- **Viral Hemorrhagic Fevers (VHFs):** The 11th outbreak of Ebola in DRC was reported in June 2020. Genetic sequencing determined that the outbreak was due to a new spillover event from wildlife, unrelated to prior Ebola outbreaks in the region. CDC plays a critical role in the public health response, building on existing capacity in the DRC and surrounding regions. CDC deployed staff to support the DRC Ministry of Health, including building a remote laboratory to support testing needs at the source.
- **Chapare virus:** In the summer of 2019, Bolivia experienced an outbreak of a then-unknown hemorrhagic fever. CDC's investigation with the Bolivian Center for Tropical Diseases established that the outbreak was caused by Chapare virus, a recently discovered arenavirus spread by rodents. To help respond to future outbreaks of Chapare and other arenaviruses, CDC created a series of diagnostic and biosafety trainings with the Governments of Bolivia, Argentina, and the Pan-American Health Organization.
- **Rabies:** Globally, the canine rabies virus variant (CRVV) is responsible for 98 percent of the estimated 59,000 human rabies deaths each year. In September 2007, HHS/CDC declared the United States to be free of CRVV. However, this rabies virus variant remains a serious public health threat in many other countries. CDC works with countries affected by rabies to control, track, provide education, and prevent this fatal disease. Using the Stepwise Approach towards Rabies Elimination (SARE), CDC experts help countries evaluate their rabies control programs and develop a clear and actionable roadmap to achieve long-term goals.

Emerging Infectious Disease Preparedness and Response

CDC's laboratory, scientific, and medical expertise keeps Americans safe by reducing the threat of high consequence pathogens within and outside our borders, working around the clock to track infections and investigate new outbreaks. CDC provides laboratory reference and diagnostic support for state and local health departments and other federal agencies, including through the Laboratory Response Network for Biological Threats (LRN-B). CDC also investigates all suspect domestic cases of known high-consequence pathogens and cases of unknown infectious diseases reported to CDC by state and local health departments. Examples of recent and ongoing work to fight infectious disease threats include:

- CDC staff work with the FDA and other partners to ensure appropriate regulatory mechanisms and utilization plans regarding medical countermeasures are in place for high-consequence pathogens, such as anthrax and smallpox, in the event of a bioterrorism incident. In 2019, CDC scientists evaluated the use of a third-generation vaccine (Jynneos) against smallpox to assess its effectiveness in preventing monkeypox virus infection in people. It is the only currently FDA-approved vaccine for the prevention of monkeypox disease.
- In collaboration with BARDA, CDC's Smallpox Research Agenda investigates new treatments, vaccines, and diagnostic tests used against the virus. As a result, the FDA recently approved TPOXX® (tecovirimat) for treatment of smallpox infection. As one of only two laboratories in the world qualified to work with live smallpox virus, CDC used next-generation genetic sequencing and bioinformatics to confirm that the drug is effective against all known smallpox virus strains. However, the drug is not foolproof. A small mutation of the virus could make it resistant to TPOXX's anti-viral effect. Recent synthesis of horsepox virus by Canadian scientists demonstrates that there is still considerable need to develop other medical countermeasures against smallpox.
- CDC is one of the only agencies in the world with the scientific expertise to address outbreaks of unknown and emerging pathogens. CDC staff regularly identify causes of unexplained illnesses and death, discover new and emerging pathogens, and investigate unconventional diseases and syndromes. When a new disease like COVID-19 emerges, understanding how it affects the body is important to patient care and developing treatments that could block its deadly effects. CDC's pathology lab has conducted over 5,900 tests on specimens from over 250 autopsies submitted by states. In addition, CDC experts have responded to inquiries from state health departments, medical examiners, coroners and other health care professionals regarding collection and submission of autopsy tissues and postmortem swab specimens for SARS-CoV-2 testing. CDC's support and findings help states determine causes of death and offer more clues about how COVID-19 kills.

Water, Mycotics, and Harmful Algal Blooms

Domestic Water, Sanitation and Hygiene: In 2020, CDC conducted multiple investigations of emerging illnesses and outbreaks associated with environmental transmission, including antibiotic-resistant *Pseudomonas* in drinking water, cases of enteric disease like *E. Coli* in leafy greens in Salinas Valley, *Naegleria fowleri* (the "brain-eating" amoeba), and *Cryptosporidium*, a parasite responsible for a multitude of outbreaks from recreational water venues, childcare settings, and animal contact.

Mycotic Diseases: CDC works across the United States to conduct surveillance, educate the public and healthcare providers, and explore new ways to control and prevent the spread of fungal diseases, which are often misdiagnosed and mistreated. Climate change may be affecting fungi that live in soil or other parts of the natural environment that cause diseases like Valley fever and histoplasmosis. In FY 2020, CDC partnered with health departments in California and Arizona to gather and analyze specimen data from air filters to better understand the fungus that causes Valley fever. Paired with other data tracking cases in the same region, epidemiologists are learning more about where Valley fever is most prevalent and the relationship between the number of cases diagnosed each year and the relative concentration of the fungus in the environment.

Harmful Algal Blooms (HABs): The rapid growth of algae can produce toxins that harm local ecology and cause illness in people, companion animals, livestock, and wildlife when they have direct contact with contaminated water. Warmer water due to climate change might cause HABs to occur more often, in more waterbodies, and to be more intense. The illnesses and symptoms in humans and animals exposed to HABs vary depending on how they were exposed, how long they were exposed, and the HAB toxin involved. CDC supports states' efforts to track and understand the public health and economic impacts of HABs, especially in states such as Florida and Oregon, which have declared emergencies to address this growing problem. In addition, Ohio, Michigan, and other states in the Great Lakes region have experienced HABs events during recent summers.

Laboratory Capacity

CDC maintains world-class laboratories that conduct ground-breaking research to protect Americans against health threats and continue to develop better tools to keep ahead of evolving pathogens. Many of the pathogens studied in CDC labs can be lethal and have no vaccine or treatment, so CDC maintains regulated biosafety level (BSL)-3 and -4 laboratories that support a variety of research. CDC's BSL-4 laboratory, reference collections, and skilled laboratorians provide a unique opportunity to test new tools and treatments in ways that cannot be evaluated anywhere else, such as with smallpox. The BSL-3 and 4 laboratories require sophisticated engineering to ensure the biosafety and biosecurity of the local environment. These labs run 24/7 to ensure CDC responds quickly and safely to public health emergencies.

Preventing infectious diseases in Alaska Native people

CDC's Arctic Investigations Program (AIP) serves to prevent infectious diseases in people of the Arctic and sub-Arctic, with a special emphasis on diseases that disproportionately impact Alaska Native and other northern Indigenous peoples. CDC's laboratory located on the Alaska Native Medical Center in Anchorage leverages advanced diagnostic technologies to enhance surveillance and better understand the genetic diversity of *H. Pylori*, *Haemophilus influenzae* and *Streptococcus pneumoniae* and develop strategies to reduce the number of infections. For example, in 2020, the AIP worked with Alaska tribal health partners to begin using genetic sequencing data to identify markers that could explain why *H. Pylori* causes disproportionately high rates of gastric cancer in Alaska Native people.

Budget Request

CDC's FY 2022 request of **\$192,997,000** for Emerging Infectious Diseases is level with FY 2021 Enacted. In FY 2022, CDC will improve CDC's laboratory capacity to respond to outbreaks for a range of emerging and critical pathogens, including Ebola, anthrax, antibiotic resistance, smallpox, plague, rabies, and Zika; improve laboratory data science proficiency, including incorporation of epidemiologic and genomics data; ensure that CDC laboratories can keep pace with innovation and quality initiatives; and provide training to CDC laboratory scientists. Enhanced data science proficiency—including efforts to support Advanced Molecular Detection and integrate existing epidemiologic and genomic data—will allow CDC and other public health agencies to maximize the usefulness of data. In addition, CDC will continue its progress through the following actions:

High-Consequence Pathogens and Zoonotic Diseases

- Continue to protect Americans by responding to outbreaks of high-consequence pathogens, working to stop diseases spread within the United States and around the world. Through training and sharing of scientific knowledge, improve the capacity of other countries to quickly identify and respond to outbreaks of high-consequence pathogens, so outbreaks can be stopped before pathogens can threaten our borders.
- Utilize a One Health approach to address the complex interplay between human health, animal health, and the environment by integrating surveillance and response strategies.
- Continue to support the Emerging Infections Program (EIP)—a network of 10 state public health departments (CA, CO, CT, GA, MD, MN, NM, NY, OR, and TN) and their academic partners which conduct disease surveillance, epidemiology studies, and prevention research. The EIP network quickly translates surveillance and research in four programs—Active Bacterial Core surveillance (ABCs), FoodNet, Influenza projects, and Healthcare Associated Infections—into informed policy and public health practice. Going forward, EIP seeks to leverage advances in informatics and data sciences to further enhance its impact and address pressing public health concerns related to opioid use and infectious disease, One Health, and persons experiencing homelessness and other groups that have been marginalized.

Emerging Infectious Disease Preparedness and Response

- Maintain technical subject matter expertise and world-class facilities to provide epidemiologic and gold-standard laboratory capabilities to rapidly identify and respond to dangerous emerging public health threats.
- Continue to help diagnose rare and unusual infections faster and more efficiently and solving medical mysteries by determining the causes of unexplained illnesses and deaths.
- Use innovative tools to help diagnose high-consequence infections (including rabies, leptospirosis, anthrax, viral hemorrhagic fevers, and monkeypox) more quickly and effectively
- Continue to improve diagnostic tests for high-consequence pathogens. As genomic surveillance improves for many of these diseases, continue to identify needs for diagnostic assay refinement. Some examples include species-specific orthopoxvirus tests, and pan-Lassa fever diagnostics.
- Continue to develop medical and public health interventions such as antivirals and new vaccines for high consequence pathogens, including monkeypox and viral hemorrhagic fevers like Ebola.

Water, Mycotics, and Harmful Algal Blooms

CDC's FY 2022 request of **\$2,000,000** for Harmful Algal Blooms (HABs) is level with FY 2021 Enacted. CDC will continue to support states to build capacity for health surveillance, event response, and mitigation of the health effects of HABs, including health communication work. CDC will continue to engage with federal agencies and other partners to understand and address health concerns related to HABs.

CDC will continue to implement and expand its new National Wastewater Surveillance System to improve health department capacity to estimate the burden of COVID-19 in community and institutional settings. This effort will create the framework for a robust surveillance system that can help epidemiologists and laboratorians detect early community spread of COVID-19 and other infectious disease outbreaks early before positive tests are conducted and may be reported. Future mycotics activities could include continuing surveillance and education related to Valley Fever, monitoring for cases of aspergillosis in healthcare settings including those related to COVID, and working to contain multi-drug resistant *C. auris* in different regions across the nation.

Laboratory Capacity

As the reference laboratory for the world, CDC must maintain state-of-the-art laboratory capacity and keep pace with laboratory technology. CDC's infectious disease laboratories also maintain a vast reference library of pathogens that help laboratories from around the world identify dangerous microbes. The budget request will help CDC quickly provide laboratory testing and results to local, state, and international partners, including through electronic laboratory reporting; and investigate unknown and emerging cases of death and illness.

Chronic Fatigue Syndrome (CFS)

CDC's FY 2022 request of **\$5,400,000** for Chronic Fatigue Syndrome is level with FY 2021 Enacted. Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) is a severely debilitating illness which affects an estimated 836,000 to 2.5 million Americans. At least one in four ME/CFS patients is bed- or house-bound for long periods during their illness, leading to an annual estimated cost of \$17 to \$24 billion in medical bills and lost income.

CDC's ME/CFS program conducts and supports innovative research to integrate the clinical presentation and management of patients. The program provides technical support for educational initiatives that help healthcare providers diagnose and treat the illness. CDC leverages its expertise in health statistics to track the prevalence of ME/CFS through large national systems such as the Behavioral Risk Factor Surveillance System and the National Health Interview Survey. CDC also capitalizes on its collaborations on syndromic surveillance to gather data on risk factors, description of patients with new onset of ME/CFS, and management strategies that favor improvement through the CDC Emerging Infections Program.

In FY 2022, CDC will continue to conduct surveillance and clinical studies to better understand the prevalence, onset, and course of ME/CFS. As part of the COVID-19 response, CDC is also examining the relationship of fatiguing illnesses following SARS-CoV-2 infection (colloquially known as "Long COVID") to ME/CFS. Studies are planned with the Emerging Infections Program and academic partners to gather prospective data on patients as they present with new onset ME/CFS-like illness. CDC will also continue to work with public health and medical organizations to improve clinical care of persons living with ME/CFS and to address critical shortage of healthcare providers. In coordination with federal partners in the Interagency ME/CFS Working Group, CDC will work to align each agency's initiatives to improve access to care and to coordinate research on the causes of and treatments for ME/CFS.

Prion Diseases

CDC's FY 2022 request of **\$6,500,000** for Prion Diseases level with FY 2021 Enacted. Prion diseases are a group of rare brain diseases affecting humans and animals that are uniformly fatal. CDC works with state and local health departments to investigate suspected human prion disease cases and to monitor for the possible emergence of zoonotic prion diseases in humans. CDC provides funds and expertise to support medical personnel and health authorities with state-of-the-art-laboratory diagnostics to confirm human prion diseases through the National Prion Disease Pathology Surveillance Center (NPDPS). The tissues collected at this Center enable rapid evaluation of new diagnostics and provide valuable support for other prion disease research. CDC conducts surveillance of prion diseases among groups who may be at higher risk for infection. CDC's prion program also collaborates with animal health experts to track the spread of chronic wasting disease, a prion disease which affects deer, elk, and moose. To date, CDC has found no definite chronic wasting disease infections in people. However, chronic wasting disease strains evolve, and some animal studies suggest that some strains of the disease pose a risk to certain types of non-human primates, which raise concerns that there may also be a risk to people.

In FY 2022, CDC will continue to conduct U.S. mortality surveillance and fund laboratory-based surveillance for prion diseases. CDC will continue to investigate possible prion diseases by supporting medical personnel and

state and local health officials with expert consultation and state-of-the-art diagnostics. CDC will continue to enhance surveillance among groups placed at highest risk of exposure to chronic wasting disease.

Antibiotic Resistance Budget Request

Antibiotic resistance (AR)—when bacteria or fungi do not respond to the drugs designed to kill them—is a threat to lives, modern medicine, and the healthcare, veterinary, and agriculture industries. Life-saving treatments such as surgery and chemotherapy depend on effective antibiotics to reduce or even prevent the risk of infections. New antibiotics improve our chances of survival, but they do not guarantee it. AR infections are difficult to treat and add considerable burden to patients and to the U.S. healthcare system. Each year, CDC estimates that more than 2.8 million illnesses and about 35,000 deaths are caused by AR in the United States alone, leading to billions in excess costs to the U.S. healthcare system.⁵¹ The U.S. toll of AR threats exceed three million infections and 48,000 deaths when including *Clostridioides difficile* (*C. difficile*), an infection associated with antibiotic use. CDC’s 2019 Antibiotic Resistance (AR) Threats Report described deaths overall from antibiotic resistance decreased by 18 percent between 2013 and 2019, and nearly 30 percent in hospitals alone. However, data analyzed during the pandemic highlight that this progress may have been reversed and many AR threats have been compounded with the challenges of the pandemic.

Preventing infection in the first place and stopping the chain of transmission is the only way to guarantee survival from these resistant pathogens. In addition, using antibiotics only when necessary ensures their effectiveness to treat infections and decreases the risk of adverse events related to antibiotic use. Effectively combating AR bacteria and improving antibiotic use and prescribing practices are parts of CDC’s broader efforts to mitigate the clinical and public health impacts of the COVID-19 outbreak. Diminished capacity to find resistance due to competing priorities during the COVID-19 pandemic and increases in hospitalizations and ventilator use could lead to the further spread of antibiotic-resistant pathogens in healthcare settings and communities. More information is needed to better understand the full impact of the COVID-19 pandemic on the threat and spread of AR infections and the use of antibiotics. CDC is supporting research and other opportunities to ensure we have a full understanding of these challenges.

CDC is leading the United States’ public health response to combat AR as a part of the Combating Antibiotic Resistant Bacteria National Action Plan. In the fall of 2020, the United States released a new National Action Plan for Combating Antibiotic-Resistant Bacteria (CARB) 2020-2025, presenting coordinated, strategic actions that the U.S. government will take across One Health in the next five years to improve the health and well-being of all Americans by changing the course of antibiotic resistance. This plan is based on the U.S. government’s 2014 National Strategy for Combating Antibiotic-resistant Bacteria, and builds on the first National Action Plan (2016 – 2020) released in 2015, by expanding CDC’s successful activities that are stopping the spread of antibiotic resistance, such as improving the use of antibiotics and increasing infection prevention and control. CDC’s AR work provides the United States with the crucial situational awareness about new and known domestic AR threats. CDC also provides the strategies, expertise, and resources for states and regions to adequately respond to these critical threats. The strategic leadership and investments of CDC’s AR Solutions Initiative helps the nation respond better and faster to AR threats.

Further research is crucial to discover new ways to protect people from AR infections and prevent their spread. This includes exploring ways that the microbiome can be used to predict and prevent infections caused by drug-resistant organisms. Applied research into infection control strategies is also essential to combat unknown or emerging threats like *C. auris* and CRE. Further, research is needed to identify and fill gaps in knowledge related to the development and spread of resistance, such as the role of the environment in AR.

CDC continues to protect patients and communities from the AR threats through:

- Improved tracking, faster and more effective response, prevention, and containment

⁵¹ <https://www.cdc.gov/drugresistance/pdf/threats-report/2019-ar-threats-report-508.pdf>.

- Sustained core laboratory and epidemiological capacity in all 50 states, several local health departments, and Puerto Rico, Guam and the U.S. Virgin Islands to address AR infections related to healthcare, foodborne, and community infections.
- The Antibiotic Resistance Laboratory Network (ARLN), via a 50-state investment in PulseNet, performs whole genome sequencing on Salmonella, Campylobacter, and E. coli isolates, and monitors them for resistance genes.
- Supporting the ARLN's seven AR Regional Laboratories to assist state outbreak response, rapidly detect existing and emerging resistance, and support innovations in antibiotic and diagnostic development
- Strengthening national tuberculosis (TB) surveillance and infrastructure by establishing the National TB Molecular Surveillance Center, which will perform whole genome sequencing of Mycobacterium TB to help target public health interventions and identify new AR TB strains as they emerge. The National TB Molecular Surveillance Center of the ARLN is now sequencing 100 percent of the TB isolates in the United States, approximately 9,000 annually.
- Improving antibiotic use by:
 - Collaborating with acute care facilities to implement Antibiotic Stewardship Programs, with nearly 90 percent of acute care hospitals meeting all of CDC's Core Elements of Hospital Antibiotic Stewardship Programs.
 - Implementing *Be Antibiotics Aware: Smart Use, Best Care*, a national educational effort for healthcare professionals, patients, and their families to help improve antibiotic prescribing and use. CDC is developing new educational resources and ensuring that the antibiotic use messaging aligns and complements other CDC efforts (e.g., sepsis).
- Supporting alternative treatment and prevention options that may be as or more effective as antibiotics in fighting AR (e.g. vaccines, diagnostics, and other therapeutics). Since 2016, CDC has invested in nearly 100 institutions to research innovative approaches to addressing antibiotic resistant infections.

Budget Request

CDC's FY 2022 request of **\$172,000,000** for the Antibiotic Resistance program is level with FY 2021 Enacted. In FY 2022, CDC will continue to work with state and local health departments and partners globally to protect Americans from the growing threat of antibiotic resistance, focusing on the highest priority activities. CDC defends against AR threats through support for critical public health capabilities and specialized programs to address AR pathogens like carbapenem-resistant Enterobacteriaceae (CRE), *C. auris*, and resistant Salmonella domestically and around the world. For example, CDC's AR Lab Network supports labs nationwide to rapidly detect AR in healthcare, food, and the community, and inform local responses to prevent spread and protect people. The AR Lab Network includes seven regional labs, the National Tuberculosis Molecular Surveillance Center, and labs in 50 states, several large cities, Puerto Rico, Guam and the U.S. Virgin Islands. CDC supports state and local AR activities through the ELC cooperative agreement.

CDC will also leverage successes achieved through the first CARB National Action to meet goals outlined in the second iteration of the plan to further the national and global capacity to detect, respond, and contain emerging AR threats. CDC's continued AR investments will provide limited support to implement the strategies under the newly released CARB 2.0 action plan. These pilots will include efforts to address AR globally and in the environment.

National Healthcare Safety Network (NHSN) Budget Request

CDC's National Healthcare Safety Network (NHSN) is the nation's most comprehensive and widely used system for healthcare quality measurement and improvement. Since its inception in 2005, the program's coverage has increased to around 37,000 U.S. healthcare facilities, including nearly every hospital (~6,200), ambulatory surgery center (~4,660), dialysis facility (~7,500), and nursing home (~15,400) in the country. NHSN drives quality improvement and patient safety by enabling healthcare facilities to track, report, assess gaps, and take quality improvement actions related to a range of urgent health threats, including healthcare-associated infections (HAIs), antibiotic resistant (AR) infections, antibiotic use, and emerging pathogens like SARS-CoV-2.

In March 2020, CDC built upon the existing NHSN infrastructure to rapidly develop and deploy a new COVID-19 hospital reporting module, which was a reporting option for hospitals from March through July 2020. In April 2020, CDC augmented NHSN to support COVID-19 reporting for nursing homes to report cases and deaths among residents and staff, and shortages of healthcare personnel and PPE. These data provided the first and only consistent national stream on the burden of COVID-19 in nursing homes. As part of the whole of government response, CDC also worked closely with the Centers for Medicare and Medicaid Services (CMS) to mandate reporting for all ~15,400 nursing homes certified by CMS. Within weeks, CDC enrolled more than 12,000 nursing homes in NHSN for the first time, and more than 99 percent of nursing homes began reporting these essential data to NHSN.

NHSN's COVID-19 data analysis quickly became an essential component of the U.S. government response at the federal, state, and local levels. Data were integrated daily into the data aggregation system maintained by the Department of Health and Human Services, and CDC developed and distributed analytic reports six days per week for use across the U.S. government response. Additionally, NHSN data dashboards and dynamic visualizations were immediately available to healthcare facilities and state and local health departments for real-time situational awareness, and CDC distributed analytic reports specific to each state. These reports helped states take actions to protect nursing home residents and staff.

Beyond COVID-19, the comprehensive NHSN program continues to demonstrate success and has dramatically improved patient outcomes and stopped the spread of infections. Hospitals and other healthcare facilities continue to use NHSN HAI and AR data and accompanying CDC technical assistance to take immediate action and improve the quality of care for hundreds of thousands of patients. CDC's 2019 Antibiotic Resistance Threats Report showed that prevention efforts nationwide have reduced deaths from antibiotic-resistant infections by 18 percent overall and by nearly 30 percent in hospitals.

Budget Request

CDC's FY 2022 request of **\$21,000,000** for the National Healthcare Safety Network is level with the FY 2021 Enacted.

The FY 2022 budget request will support NHSN reporting in healthcare facilities to protect patients and improve healthcare across the continuum of care, including acute care hospitals, critical access hospitals, dialysis facilities, nursing homes, and ambulatory surgery centers, enabling CDC to continue efforts to increase NHSN uptake in healthcare facilities, modernize the NHSN infrastructure, and prepare for other emerging pathogens.

Increase NHSN uptake to protect patients

Prior to the COVID-19 pandemic, approximately 3,000 nursing homes actively used NHSN to track *Clostridioides difficile* infections and improve antibiotic use in their facilities as part of a voluntary CMS quality improvement program. Currently, all ~15,400 CMS-certified nursing homes are enrolled in NHSN and use it at least weekly to report COVID-19 data. CDC will collaborate with nursing homes, nursing home associations, and other partners to increase the facilities' participation in other quality improvement programs beyond COVID-19 reporting, such as the CMS program described above.

In FY 2022, CDC will also continue to work with partners—including hospitals, nursing homes, and other clinical partners—to promote the use of the NHSN Antimicrobial Use and Resistance (AUR) module to assess antibiotic prescribing for facilities in support of national HAI/AR prevention goals. Currently, more than 2,000 hospitals from all 50 states, Washington, D.C., and Puerto Rico, as well as Pacific and European military hospitals, use NHSN to track antibiotic use. CDC intends to increase the number of facilities that utilize the NHSN AUR module and take advantage of this machine-to-machine reporting to provide more essential data while reducing reporting burden.

CDC will continue to support health department and healthcare system NHSN access to drive HAI prevention, enhance outbreak response, and improve quality of care. CDC will continue to promote the use of the Targeted Assessment for Prevention (TAP) Strategy by facilities, health systems, health departments, and federal quality improvement organizations to target and tailor prevention efforts. NHSN's TAP reports alert providers and public health professionals about healthcare facilities and units with more infections so they can immediately target prevention efforts in these areas. CDC intends to continue analytic work to identify hotspots of infections within the healthcare system, respond to future emergencies, and aid other U.S. government agencies, state and local health departments, and individual healthcare facilities.

Modernize NHSN infrastructure and reduce reporting burden

CDC-led efforts are underway to increase automation of data collection and reporting by healthcare facilities that participate in NHSN. The near-term objectives for NHSN are to achieve important new benefits for reporting timeliness, comprehensiveness, accuracy, and level of effort. The overarching goals are to strengthen the efficiency, effectiveness, and sustainability of this widely used public health platform, particularly to provide the highest caliber data in responses to the current pandemic and other large-scale emergencies. CDC's expansion and enhancements for NHSN are designed to facilitate healthcare facility participation in the system, improve the system's scope and functionality, and deliver data for analysis and action at all geographic levels. In FY 2022, CDC will continue to promote the use of automated data capture from electronic health records and electronic data exchanges with NHSN as alternatives to manual processes. Currently, more than 8,800 facilities participating in NHSN use electronic data capture and reporting methods to report HAI and AR data. CDC will continue efforts to increase machine-to-machine reporting, capture of data from electronic health records, and implementation of Health Level Seven (HL7) international standards. These modernization efforts will increase efficiency and reduce burden on healthcare facilities. Each of these efforts will reduce manual data entry burden on the 37,000 healthcare facilities that report a variety of conditions to NHSN, including COVID-19, HAIs, AR infections and antibiotic prescribing. The increased automation will also allow NHSN to pivot more rapidly during emergency responses to collect urgent data while minimizing any increased burden on healthcare facilities.

Combating AR infections and preparing for emerging pathogens

CDC will continue outreach to healthcare facilities, clinicians, and other partners to increase voluntary reporting of AUR data. CDC will intensify its engagements with clinical partners at the forefront of antimicrobial stewardship programs—which are now required by CMS in hospitals—to ensure that the NHSN AUR data are fully used to improve antimicrobial prescribing and curb antimicrobial resistance. To bolster these efforts, CDC will add data elements and data details to its AUR surveillance that enable more rapid identification and more specific targeting of antimicrobial overuse and resistance problems.

Food Safety Budget Request

CDC works to prevent the estimated 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths each year caused by pathogens in contaminated food. Although one in six Americans gets sick from contaminated foods or beverages every year,⁵² significant progress has been made in reducing human illness caused by three major bacteria associated with foodborne illness. However, progress in reducing foodborne illnesses caused by other common bacteria has been mixed: the incidence of *Salmonella* and *Listeria* have stayed roughly the same since 2008, and the incidence of *Campylobacter* has increased by 54%. Only *E. coli* O157 has seen a significant decrease (29.5 percent). These numbers indicate an increased need to focus on preventing foodborne illness and stopping outbreaks.

CDC has a unique role in detecting and investigating foodborne illness and outbreaks and attributing them to specific foods and settings. CDC provides the vital link between illness in people and the food safety systems of government agencies and food producers. CDC collaborates closely with FDA, USDA, state and local health departments, and food industries to protect Americans from food contaminated with dangerous pathogens.

A key tool in this work is PulseNet, a network of public health and food safety laboratories in all 50 states and Washington, D.C. that detects outbreaks of foodborne disease. In FY 2019, CDC completed the modernization of PulseNet's core technology by increasing food safety support to state health departments for the roll-out of whole genome sequencing (WGS) at state public health labs. In 2020, CDC completed a major software enhancement that will assist with the identification of similar strains of bacteria found in clinical isolates, speeding up the investigation process. Apart from laboratory advancements, CDC increased support for state and local epidemiology capacity to investigate illnesses and solve foodborne outbreaks, as well as support to the Integrated Food Safety Centers of Excellence for improved surveillance and response training for other states.

Budget Request

CDC's FY 2022 request of **\$65,000,000** for Food Safety is level with FY 2021 Enacted. CDC will continue supporting the nation's food safety system, focusing on food safety priority areas at CDC and at state and local health departments. CDC will achieve these priorities in part through programs that enhance state and local public health capacity to support vital national surveillance, improve foodborne outbreak detection and investigations, enhance food safety prevention efforts, and maintain vigilance for emerging threats to our nation's food supply.

Innovating to better detect, stop, and prevent outbreaks

For more than 20 years, CDC's PulseNet laboratory system has been a cost-effective tool for detecting foodborne disease outbreaks and correcting problems in the food production chain. Every year, PulseNet prevents approximately 270,000 illnesses and saves at least half a billion dollars in medical costs and lost productivity. For every \$1 invested into PulseNet, \$70 are saved.⁵³ Each state has at least one public health laboratory linked into PulseNet, which enables state health departments and CDC to identify ill people infected by bacteria with the same DNA fingerprint and to uncover potential foodborne outbreaks. Innovations, such as WGS technology, are now deployed at CDC and state public health laboratories and are revolutionizing PulseNet and foodborne outbreak investigations. These innovations allow PulseNet laboratories to reveal important genetic material of a bacterium, including its AR characteristics, in one efficient process. In July 2019, WGS technology officially became the standard for PulseNet to detect foodborne outbreaks at CDC and state public health laboratories. Implementation of WGS is already greatly improving the ability to detect and investigate

⁵² E. Scallan, R.M. Hoekstra, F.J. Angulo, et al. Foodborne illness acquired in the United States - major pathogens *Emerg Infect Dis*, 17 (1) (2011), pp. 7-15 https://wwwnc.cdc.gov/eid/article/17/1/p1-1101_article.

⁵³ Robert L. Scharff, John Besser, Donald J. Sharp, Timothy F. Jones, Gerner-Smidt Peter, Craig W. Hedberg, An Economic Evaluation of PulseNet: A Network for Foodborne Disease Surveillance, *American Journal of Preventive Medicine*, Volume 50, Issue 5, Supplement 1, 2016, Pages S66-S73, ISSN 0749-3797, <http://www.sciencedirect.com/science/article/pii/S0749379715006108>.

widespread problems in the food supply. In July 2020, CDC identified a cluster of Salmonella Newport illnesses, which became the fourth largest salmonellosis outbreak in the United States since 1986. Through swift federal coordination, CDC investigated and controlled the outbreak in approximately half the time needed to control outbreaks of this scale in the past. During a separate nationwide outbreak linked to romaine lettuce, CDC used novel water sampling technologies developed by CDC, combined with WGS, to identify the outbreak strain of *E. coli* O157 in an irrigation canal. This discovery prompted the leafy greens industry to revise its food safety guidelines around the treatment and use of irrigation water for lettuce and leafy greens production. As WGS continues to be routinely used in PulseNet, CDC expects to identify more clusters of disease and solve more foodborne disease outbreaks. By continuing core support to state PulseNet laboratories, enhanced investigation tools, and epidemiologists, outbreak detection and investigation will be improved throughout the country.

A rapidly emerging threat to PulseNet and CDC's ability to identify foodborne disease outbreaks is the increased adoption of culture-independent diagnostic test (CIDT) technologies used in clinical laboratories (e.g., laboratories which serve hospitals and clinics). CIDTs use simplified methods to detect bacteria directly from patient samples, like stool, to determine whether a patient has been infected with a foodborne pathogen. While useful for patient diagnosis, CIDTs do not provide state public health departments and CDC all the genetic information about the foodborne bacteria making patients sick that is needed to connect cases of ill people and detect outbreaks. This critical information is obtained through traditional microbiological techniques such as bacterial culture, followed by DNA sequencing. Until new AMD technologies, such as metagenomics, are available that provide the information directly from stool and other clinical samples, CDC is working with partners to ensure that cultures remain available to preserve the effectiveness of PulseNet. To support the continuing function of PulseNet laboratories, with the FY 2022 budget request CDC will:

- Track adoption of new CIDTs in clinical laboratories and analyze their impact on foodborne disease surveillance.
- Help public health laboratories collect bacterial isolates for PulseNet to preserve the ability to detect and control outbreaks until new laboratory technologies are developed.
- Work to develop metagenomic technologies to determine the DNA makeup of bacteria directly from stool and other human samples to enable better detection of outbreaks.

To address the expected increased detection of foodborne disease outbreaks by PulseNet using WGS, CDC will:

- Develop methods to triage and prioritize outbreaks so limited state and local health department resources can be deployed effectively.
- Evaluate new methods and technologies for conducting more rapid and complete interviews of patients to determine what they ate that made them sick.

Supporting capabilities of state and local health departments to detect and solve foodborne outbreaks

CDC will continue to support, coordinate, and enhance the state epidemiology, laboratory, and environmental health capacity. Through ELC cooperative agreements, CDC funds all 50 states, six local, and three territorial health departments to strengthen their ability to rapidly detect, investigate, and solve outbreaks and to accelerate data reporting. Outbreak data reported to CDC from state and local health departments is crucial in helping CDC to identify and coordinate responses to large and multi-state outbreaks, prevent further illnesses, and provide critical insight to prevent future outbreaks.

CDC also drives improvements in foodborne outbreak detection and response at the state level through the Integrated Food Safety Centers of Excellence. CDC's five Food Safety Centers of Excellence (located in CO, MN, NY, TN, and WA) provide assistance and training to other state and local public health programs to build their capacity to track and investigate foodborne disease.

In FY 2022, CDC will:

- Improve disease detection and outbreak response by further integrating new WGS technology into routine public health practice.
- Support state and local capacity for monitoring foodborne illness and response to outbreaks.
- Train state public health personnel in best practices for foodborne disease detection, surveillance, pathogen identification, outbreak investigation, and control.
- Implement more widely state and local program metrics that identify strengths, weaknesses, and progress in upgrading illness tracking and outbreak response.
- Continue Integrated Food Safety Centers of Excellence regional support for state and local food safety programs.

Driving prevention with data and analysis

Tracking trends in foodborne infections each year uncovers problems and identifies potential solutions to foodborne illnesses. CDC leads foodborne illness surveillance through robust, state-based systems that track specific illnesses, attributes them to sources, monitor foodborne outbreaks, and detect emerging AR among bacteria that cause foodborne infections. In particular, the collaborative FoodNet sentinel surveillance system tracks the trends, and provides public health and regulatory agencies with accurate information on progress in prevention. CDC, the FDA, and the Food Safety and Inspection Service (FSIS) of the USDA created the Interagency Food Safety Analytics Collaboration (IFSAC) to determine the amount of foodborne illness caused by various categories of food. This information helps industry, consumers, and regulatory partners focus actions on identifying high-risk foods to prevent illnesses and track progress of prevention measures. In FY 2022, CDC will:

- Monitor foodborne diseases through population surveys to determine the burden of foodborne illness and frequency of consuming specific foods, collect and analyze foodborne outbreak data, and evaluate WGS technologies to monitor emerging antibiotic resistance.
- Assess trends in foodborne illness, identify high-risk foods, and evaluate the effectiveness of prevention strategies, through the IFSAC.
- Further explore the use of WGS to better define the reservoirs of the germs that make foods unsafe, to help focus prevention efforts.
- Improve data integration, analysis, usability, and sharing with food safety partners and the public.
- Reduce data gaps and improve linkage across surveillance systems by working with FDA and USDA's FSIS to improve targeting of prevention efforts.

Quarantine and Migration Budget Request

Modern air and maritime travel have enabled extraordinary global interconnectivity, providing economic, cultural, and social benefits. However, these connections also allow an infected person to fly or sail to any location in the world, often in less time than it takes to develop symptoms of disease. The emergence of COVID-19 demonstrates that novel pathogens and disease outbreaks in distant locations are only a flight or two away from communities in the United States. In addition, the COVID-19 pandemic illustrated the importance of collaboration between public and private sectors.

Air and maritime travel facilitated the continued introduction of SARS-CoV-2 from outside the United States. As such, public health steps to mitigate continued importations of the virus were quickly implemented. In March 2020, CDC posted a Level 3 Global Pandemic Notice, advising travelers to avoid all nonessential international travel to foreign countries and U.S. territories around the world due to widespread, ongoing transmission of COVID-19. As the situation changed in destinations around the world, CDC replaced the global travel notice with destination-specific COVID-19 Travel Health Notices. CDC also expanded screening and public health risk assessment of travelers in priority U.S. airports and at CDC's Quarantine Stations as the pandemic evolved. CDC screened over 760,000 people arriving in the United States from 31 countries. The CDC Director also issued a No Sail Order for cruise ships, suspending operation in U.S. waters. This was followed by a Conditional Sale Order issued on October 30, 2020, which announced a framework for a phased resumption of cruise ship passenger operations.

CDC's global migration and quarantine activities work to create a multi-layered system of public health defenses to mitigate the risk of communicable disease spreading into and within the United States. These layers seek to expand the perimeter of U.S. public health security and surveillance to other countries where diseases may originate and where interventions are often more cost-effective. They also ensure that U.S. public health authorities and partners have multiple, early opportunities to intervene and protect public health, rather than wait until travelers arrive in the United States with communicable diseases.

Improving the health of globally mobile populations abroad reduces the risk of disease importation. Measures such as exit screening were effective during the recent Democratic Republic of Congo and Guinea Ebola outbreaks, reducing the risk of the outbreaks crossing borders and spreading beyond the affected country. Further, CDC's cutting-edge understanding of global travel data and social networks helps determine where the risks exist and where to deploy public health resources efficiently and effectively. Advances in the CDC Technical Instructions provided to more than 750 panel physicians across the world improved immigration medical exams to ensure the health of individuals who come to live and work in the United States. For example, the improvements to the Technical Instructions have been shown to reduce the number of immigrants and refugees who arrive with infectious tuberculosis.

Targeted risk and health communication encourages people to travel safely, while illness reporting from partners provides CDC an early warning in the event a returning traveler is sick. CDC's partnerships with travel health physicians around the world provide key intelligence concerning disease hot spots. CDC leverages its expertise and these partnerships to inform alerts, recommendations, and education for travelers and healthcare providers, and to prevent travelers from falling ill and spreading disease. Strengthened public health regulations requiring the collection of key contact information from travelers during air or maritime travel enable CDC to respond more quickly to ill and exposed persons arriving in the United States.

Domestically, CDC stands ready to respond to illnesses at U.S. ports of entry and to assist in preventing the spread of communicable disease. CDC's 20 quarantine stations positioned at key points of entry detect and respond to reports of illness, strengthening public health security at the border. During emergencies, CDC coordinates with state health departments to investigate ill travelers and their contacts, as well as distribute lifesaving drugs. CDC partners with the Department of Homeland Security to administer the Public Health Do

Not Board list to prevent individuals with certain infectious diseases from boarding commercial aircraft and potentially infecting other travelers.

Throughout the COVID-19 pandemic, CDC focused on reducing further spread of disease by improving the ability of quarantine stations to complete screening, developing educational resources such as travel health notices to inform travelers of the risks associated with travel, and instituting travel restrictions for countries with widespread sustained transmission. CDC will continue important collaborations with state and local health departments, airlines, cruise lines, and Federal partners, including the Department of Transportation, Department of State, Department of Homeland Security, and Customs and Border Protection.

Budget Request

CDC's FY 2022 request of **\$72,772,000** for Quarantine and Migration is **\$30,000,000** above the FY 2021 Enacted level. CDC will use these funds to modernize public health programs that protect U.S. communities from infectious diseases and scale-up migration systems that will protect the United States during future international outbreaks and pandemics. CDC will expand our quarantine network to include additional quarantine stations and extend CDC response capabilities to achieve 24/7 coverage at the most heavily trafficked airports and land border crossings. This expanded capacity will greatly improve CDC's illness response capabilities at ports of entry and bolster CDC's ability to swiftly surge at ports of entry in response to future public health emergencies.

CDC will sustain investments made with COVID-19 supplements for innovative solutions focused on travelers to build and enhance a modernized and flexible traveler management program. COVID-19 supplemental funds were awarded to state and local health departments to improve data sharing, improve communication with travelers, and provide oversight of public health activities at U.S. ports of entry and other travel hubs. CDC will build upon lessons learned and apply a standardized methodology to develop, pilot, and evaluate innovative methods to better communicate directly with travelers and link them into a traveler management system. This program will work towards enhancing the agency's capacity to engage travelers before, during, and after travel. The past decade has clearly shown the important linkage between travel and the spread of communicable diseases (including COVID-19, Ebola, Zika, and measles), and the need for CDC to increase its capacities for ensuring safe travel during a pandemic or any outbreak scenario.

CDC's quarantine stations also ensure animals and animal products coming to the United States do not spread disease. The proximity of CDC quarantine stations to airports also enables CDC to rapidly respond in emergency situations, such that they can provide essential drugs to hospitals to save the life of someone with malaria, botulism, or diphtheria.

The COVID-19 pandemic response has highlighted gaps in CDC's ability to respond to outbreaks of communicable diseases of public health concern onboard cruise ships. Additional funding will be used to accelerate infrastructure development to expand the scope of CDC's Maritime activities, allowing CDC to rapidly identify and respond to maritime public health risks. CDC will expand networks between CDC's Maritime program and industry partners that would allow for streamlined public health surveillance and data-sharing. These modernized data networks will improve the CDC's ability to proactively make decisions to best protect travelers and the people who work in travel and tourism industries.

CDC will also continue to fund domestic and international partners through existing and new cooperative agreements. These awards protect the health of U.S. communities, the health of people coming to live and work in the United States, and the health of international travelers; improve the tracking of disease outbreaks and trends; and build epidemiologic and public health capacity to respond to public health emergencies. Within the requested amount, up to \$1.0 million is to remain available until expended for initial expenses for isolation or quarantine-related medical and transportation costs of travelers with highly contagious diseases, such as multi-drug resistant (MDR) tuberculosis.

Healthcare-Associated Infections

CDC plays a critical role in preventing infections in our healthcare system, including those caused by antibiotic resistant (AR) pathogens, emerging pathogens such as SARS-CoV-2, and sepsis. Healthcare-associated infections (HAIs) are infections people get while receiving medical care in any healthcare setting. In hospitals alone, one in 31 hospitalized patients has at least one HAI at any given time, with more than 680,000 infections and billions of dollars in excess healthcare costs occurring across the United States every year.^{54,55} Many of these HAIs are caused by AR pathogens. While CDC has made great progress preventing HAIs in the United States, more action is needed to save lives and reduce unnecessary healthcare costs.⁵⁶

HAIs and other infections can lead to sepsis, the body's extreme response to an infection. Each year, at least 1.7 million adults in the United States develop sepsis and nearly 270,000 die as a result.⁵⁷ To address the large national burden of sepsis, CDC focuses on four key areas: tracking sepsis; preventing infections that can lead to sepsis, including HAIs; early detection and diagnosis; and appropriate treatment. CDC activities include defining the magnitude of the burden and the impact of our interventions, preventing HAIs and infections caused by antibiotic resistant pathogens that might lead to sepsis, educating clinicians and the public about the importance of early recognition and detection of sepsis through the *Get Ahead of Sepsis* national education campaign; and finally, antibiotic stewardship efforts help preserve antibiotics as critical, life-saving tools.

The COVID-19 pandemic has focused attention on the need to improve infection control practices in hospitals, outpatient clinics, and nursing homes. CDC has taken action to keep new COVID-19 infections out of nursing homes; identify new infections early; and limit transmission. To achieve these three goals, CDC has developed and implemented infection prevention and control (IPC) guidance specific to nursing homes; deployed staff to assist nursing homes; remote technical assistance to complement in-person deployments; and extensive disease surveillance across all ~15,400 CMS-certified nursing homes in the country.

With support from COVID-19 emergency supplemental funding, CDC has deployed more than 75 IPC teams to nursing homes across 37 states, tribal nations, and Washington, D.C. CDC leveraged lessons learned in the field to advise health department and facility policies; develop and regularly update nursing home IPC and healthcare personnel guidance; assist in monitoring implementation of CDC guidance; implement test-based strategies to reduce transmission in nursing homes; and optimize personal protective equipment supply. CDC also launched a national IPC training collaborative, Project Firstline, which seeks to provide every person working in a U.S. healthcare facility, including nursing homes, the opportunity to have a foundational understanding of infection control.⁵⁸

CDC also leveraged existing resources to meet the demands of the pandemic. For example, CDC converted existing Infection Control Assessment and Response (ICAR) tools to develop Tele-Infection Control Assessment and Response (Tele-ICAR), a tool for health departments to remotely assess IPC practices and guide quality improvement activities. CDC has trained health departments on this novel approach and assisted in conducting over 807 nursing home Tele-ICAR assessments across 22 jurisdictions as of November 2020. CDC will expand this tool to additional healthcare settings, additional types of infections, and for use in other quality assessments.

CDC's continued efforts to improve public access to state and national HAI and AR data through the Antibiotic Resistance & Patient Safety Portal (AR&PSP). The AR&PSP is an interactive, web-based application that innovatively displays data collected through CDC's National Healthcare Safety Network (NHSN) and other

⁵⁴ <https://health.gov/hcq/prevent-hai-action-plan.asp>.

⁵⁵ <https://www.nejm.org/doi/full/10.1056/NEJMoa1801550>.

⁵⁶ These activities complement and are informed by CDC's National Healthcare Safety Network (NHSN) reporting capabilities.

⁵⁷ <https://www.cdc.gov/sepsis/datareports/index.html>.

⁹ <https://www.cdc.gov/infectioncontrol/projectfirstline/index.html>.

sources. The AR&PSP allows users to view enhanced data visualizations on antibiotic resistance, antibiotic use, and stewardship datasets as well as HAI data for the nation and states. Recently released updated data from 2015-2019 demonstrated significant progress in preventing most infections in acute care hospitals, including 31 percent reduction in central line-associated blood stream infections (CLABSI); 26 percent reduction in catheter-associated urinary tract infections (CAUTI); 18 percent reduction in Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia; and 42 percent reduction in *Clostridioides difficile* (*C. difficile*) events.

While CDC has made progress in reducing infections in healthcare settings, more work needs to be done. CDC has seen slower change in the rates of community-associated infections caused by pathogens that are known to spread in healthcare settings, like MRSA. To continue reductions in HAIs overall, it is necessary to prevent these infections in the community.

Budget Request

FY 2022 request of **\$12,000,000** for Healthcare-Associated Infections is level with FY 2021 Enacted. CDC will continue its progress preventing and responding to HAIs and other adverse events in healthcare, including sepsis.

This funding will support CDC's ongoing efforts to prevent HAIs during the COVID-19 pandemic. For example, CDC will scale up and accelerate delivery of tools and expertise provided during the COVID-19 response, including the use of remote Infection Control Assessment and Response (Tele-ICAR). Project Firstline will be a critical tool in delivering fundamental infection control capabilities to frontline healthcare and public health staff so they can stop infections from spreading in healthcare settings.

With this funding, CDC will continue to provide national leadership and scientific expertise in HAI-AR prevention, identify emerging threats, and protect patients through outbreak response, detection, infection control, and innovation across all healthcare settings and related communities. This includes working with health departments and healthcare facilities when problems arise, engaging other public and private health partners to prevent healthcare infections, and supporting other federal agencies through provision of data and technical expertise.

CDC will continue serving as the nation's gold standard laboratory to identify emerging and untreatable pathogens in healthcare settings; develop and evaluate new tests; and use applied research and best practice from outbreak response to enhance strategies and tools to prevent transmission of infections, AR, and future outbreaks. Interventions to improve patient care will be informed by data from surveillance that monitors healthcare safety and quality trends. CDC will prioritize resources to prevent infections in the healthcare and community settings and align those efforts with current HHS initiatives and Administration priorities, including combating AR, improving organ transplantation safety, and the *Advancing American Kidney Health* Initiative. Finally, CDC will continue to engage public health partners and healthcare providers to promote the Sepsis Surveillance Toolkit, increase awareness of sepsis, and better integrate sepsis early recognition and management to routine clinical practices.

Epidemiological and Laboratory Capacity Program

CDC's FY 2022 request of **\$40,000,000** for Epidemiological and Laboratory Capacity Program is level with FY 2021 Enacted. CDC will continue its support and technical assistance to all jurisdictions specifically to help strengthen cross-cutting surveillance and health information systems. This includes support for a skilled public health workforce and systems that can maintain critical flexibility to address emergent infectious disease threats and outbreaks—ensuring that the United States can limit pathogen exposures, prevent disease, and keep Americans safe.

The Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) cooperative agreement is the mechanism by which CDC provides support to all 50 states, six large cities, and eight U.S. territories to prevent, detect, respond to, and control the growing threats posed by infectious diseases. Beginning with just 10 recipients and less than \$2 million in 1995, the ELC program has expanded and matured. It now awards more than \$200 million each year and serves as the primary mechanism to support emerging infectious disease epidemiology and laboratory capacity in the United States. ELC brings together infectious disease activities funded from across CDC's budget, supported by cross-cutting, dedicated ELC funding. In 2019, CDC awarded a new competitive 5-year cooperative agreement, that incorporated feedback from recipients and partners to improve coordination and support growth, while maintaining valued flexibility. The cooperative agreement established stronger focus on public health programs (e.g. Food and Water or Vector-borne) while retaining the ability for recipients to work on discrete projects important to the health and wellness of their populations (e.g. legionella). The ELC affords recipients the flexibility to meet program goals and milestones, while allowing them to find approaches that incorporate unique jurisdictional needs. The ELC program is currently working with jurisdictions to help manage over \$30 billion in supplemental COVID-19 funding to state and local health departments for activities including testing, contact tracing and disease investigation, infection control and prevent, and surveillance.

The ELC has provided critical and strategic investments to strengthen recipient's cross-cutting surveillance and health information systems. These investments have built a foundation that will be enhanced by additional funding provided as part of the data modernization initiative. The ELC's collaborative approach ensures that health information system experts from different CDC programs can work together to support recipients in a coordinated approach. Supporting recipients' efforts to collect racial and ethnic data for infectious diseases is an area of increasing focus for the ELC program as well. Accurate data to describe and guide efforts will be essential to address inequities and promote health equity.

Over more than 25 years, the ELC program has built a mechanism and program that allows jurisdictions to rapidly mobilize and effectively respond to emerging threats, including Ebola in 2015, Zika virus in 2016 and now COVID-19. Beginning in 2019, the ELC included funding to support the Laboratory Response Network, providing small investments for public health laboratory emerging infectious disease response capabilities. Other ELC resources also provide vital support for addressing outbreaks among groups that have been marginalized, such as hepatitis A outbreaks in multiple states, particularly among people experiencing homelessness, and an outbreak of mumps in an Arkansas Marshallese community.

State Table: Epidemiology and Laboratory Capacity

	FY 2020 Base Awards¹	FY 2020 COVID-19 Awards	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$2,851,412	\$125,506,014	TBD	TBD	TBD
Alaska	\$2,360,438	\$59,485,700	TBD	TBD	TBD
Arizona	\$4,139,917	\$163,894,700	TBD	TBD	TBD
Arkansas	\$2,516,785	\$86,493,113	TBD	TBD	TBD
California	\$10,242,112	\$546,608,498	TBD	TBD	TBD
Colorado	\$6,022,658	\$171,893,028	TBD	TBD	TBD
Connecticut	\$3,519,939	\$192,403,689	TBD	TBD	TBD
Delaware	\$1,779,045	\$73,352,759	TBD	TBD	TBD
Florida	\$6,365,179	\$453,724,171	TBD	TBD	TBD
Georgia	\$4,427,697	\$280,113,023	TBD	TBD	TBD
Hawaii	\$3,297,631	\$57,369,228	TBD	TBD	TBD
Idaho	\$1,578,749	\$61,838,301	TBD	TBD	TBD
Illinois	\$4,304,384	\$306,126,464	TBD	TBD	TBD
Indiana	\$3,491,559	\$196,387,436	TBD	TBD	TBD
Iowa	\$3,752,691	\$109,630,947	TBD	TBD	TBD
Kansas	\$2,619,389	\$89,523,215	TBD	TBD	TBD
Kentucky	\$3,371,323	\$107,386,636	TBD	TBD	TBD
Louisiana	\$2,594,140	\$200,973,032	TBD	TBD	TBD
Maine	\$2,631,866	\$58,756,337	TBD	TBD	TBD
Maryland	\$5,378,313	\$219,190,281	TBD	TBD	TBD
Massachusetts	\$6,032,616	\$389,158,942	TBD	TBD	TBD
Michigan	\$6,567,202	\$333,955,716	TBD	TBD	TBD
Minnesota	\$9,314,432	\$146,382,918	TBD	TBD	TBD
Mississippi	\$2,110,093	\$98,744,354	TBD	TBD	TBD
Missouri	\$2,016,161	\$147,714,009	TBD	TBD	TBD
Montana	\$1,919,473	\$55,957,161	TBD	TBD	TBD
Nebraska	\$3,315,399	\$78,119,939	TBD	TBD	TBD
Nevada	\$2,939,527	\$97,471,288	TBD	TBD	TBD
New Hampshire	\$2,729,758	\$67,531,558	TBD	TBD	TBD
New Jersey	\$3,513,962	\$631,485,857	TBD	TBD	TBD
New Mexico	\$3,233,913	\$85,328,516	TBD	TBD	TBD
New York	\$10,328,731	\$723,055,680	TBD	TBD	TBD
North Carolina	\$4,204,577	\$206,291,277	TBD	TBD	TBD
North Dakota	\$1,651,350	\$58,651,648	TBD	TBD	TBD
Ohio	\$4,539,634	\$257,881,624	TBD	TBD	TBD
Oklahoma	\$2,078,703	\$96,583,725	TBD	TBD	TBD
Oregon	\$3,912,941	\$96,302,257	TBD	TBD	TBD
Pennsylvania	\$4,785,075	\$322,378,446	TBD	TBD	TBD
Rhode Island	\$2,396,464	\$93,077,178	TBD	TBD	TBD
South Carolina	\$3,449,783	\$130,152,245	TBD	TBD	TBD
South Dakota	\$1,388,902	\$63,949,967	TBD	TBD	TBD
Tennessee	\$8,475,276	\$168,518,684	TBD	TBD	TBD
Texas	\$5,137,816	\$516,539,011	TBD	TBD	TBD
Utah	\$6,176,813	\$96,341,250	TBD	TBD	TBD
Vermont	\$2,032,816	\$61,408,272	TBD	TBD	TBD
Virginia	\$4,463,581	\$229,932,474	TBD	TBD	TBD
Washington	\$9,412,090	\$193,525,388	TBD	TBD	TBD
West Virginia	\$1,720,094	\$63,721,574	TBD	TBD	TBD
Wisconsin	\$7,672,498	\$150,902,505	TBD	TBD	TBD
Wyoming	\$1,921,785	\$55,823,606	TBD	TBD	TBD
Cities					

	FY 2020 Base Awards¹	FY 2020 COVID-19 Awards	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Chicago	\$2,206,179	\$199,359,863	TBD	TBD	TBD
Houston	\$2,697,022	\$68,876,821	TBD	TBD	TBD
LA County	\$4,945,876	\$312,300,873	TBD	TBD	TBD
New York City	\$8,355,609	\$828,571,731	TBD	TBD	TBD
Philadelphia	\$1,796,063	\$96,973,837	TBD	TBD	TBD
Washington, D.C.	\$2,564,102	\$91,123,627	TBD	TBD	TBD
Territories					
American Samoa	\$237,373	\$4,380,909	TBD	TBD	TBD
Federated States of Micronesia	\$216,665	\$4,966,249	TBD	TBD	TBD
Guam	\$3,849,939	\$6,289,596	TBD	TBD	TBD
Marianna Islands	\$1,348,475	\$4,426,933	TBD	TBD	TBD
Marshall Islands	\$499,085	\$4,351,825	TBD	TBD	TBD
Republic of Palau	\$511,662	\$3,990,500	TBD	TBD	TBD
U.S. Virgin Islands	\$1,194,312	\$5,277,998	TBD	TBD	TBD
Puerto Rico	\$1,453,865	\$76,021,428	TBD	TBD	TBD
Subtotal States	\$206,686,692	\$9,277,543,641	TBD	TBD	TBD
Subtotal Cities	\$22,564,851	\$1,597,206,752	TBD	TBD	TBD
Subtotal Territories	\$9,311,376	\$109,705,438	TBD	TBD	TBD
Total Resources	\$238,562,919	\$10,984,455,831	TBD	TBD	TBD

¹ Includes funding from multiple infectious disease programs, awarded through the ELC grant mechanism.

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CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$984.964	\$1,021.714	\$1,197.714	+\$176.000
PPHF	\$254.950	\$254.950	\$254.950	\$0
Total Request	\$1,239.914	\$1,276.664	\$1,452.664	+\$176.000
FTEs	829	836	866	+30
-- Tobacco	\$101.400	\$109.400	\$109.400	\$0
-- <i>Tobacco (PPHF)</i>	<i>\$128.600</i>	<i>\$128.100</i>	<i>\$128.100</i>	<i>\$0</i>
-- Nutrition, Physical Activity and Obesity	\$56.920	\$56.920	\$56.920	\$0
-- School Health	\$15.400	\$15.400	\$15.400	\$0
-- Health Promotion	<u>\$29.100</u>	<u>\$35.600</u>	<u>\$35.600</u>	<u>\$0</u>
-- Glaucoma	\$4.000	\$4.000	\$4.000	\$0
-- Vision and Eye Health	\$1.000	\$1.000	\$1.000	\$0
-- Alzheimer's Disease	\$15.500	\$20.500	\$20.500	\$0
-- Inflammatory Bowel Disease	\$1.000	\$1.000	\$1.000	\$0
-- Interstitial Cystitis	\$1.100	\$1.100	\$1.100	\$0
-- Excessive Alcohol Use	\$4.000	\$4.000	\$4.000	\$0
-- Chronic Kidney Disease	\$2.500	\$2.500	\$2.500	\$0
-- Chronic Disease Education and Awareness	N/A	\$1.500	\$1.500	\$0
-- Prevention Research Centers	\$26.461	\$26.961	\$26.961	\$0
-- Heart Disease and Stroke	\$85.030	\$86.030	\$86.030	\$0
-- <i>Heart Disease and Stroke (PPHF)</i>	<i>\$57.075</i>	<i>\$57.075</i>	<i>\$57.075</i>	<i>\$0</i>
-- Diabetes	\$95.854	\$95.854	\$95.854	\$0
-- <i>Diabetes (PPHF)</i>	<i>\$52.275</i>	<i>\$52.275</i>	<i>\$52.275</i>	<i>\$0</i>
-- National Diabetes Prevention Program	\$27.300	\$29.300	\$29.300	\$0
-- Cancer Prevention and Control	\$381.049	\$385.799	\$385.799	\$0
-- Oral Health	\$19.500	\$19.500	\$19.500	\$0
-- Safe Motherhood/Infant Health	\$58.000	\$63.000	\$89.000	+\$26.000
-- <i>Maternal Mortality Review Committees (non-add)</i>	<i>\$12.000</i>	<i>\$17.000</i>	<i>\$43.000</i>	<i>+\$26.000</i>
-- <i>Preterm Birth (non-add)</i>	<i>\$2.000</i>	<i>\$2.000</i>	<i>\$2.000</i>	<i>\$0</i>
-- Arthritis	\$11.000	\$11.000	\$11.000	\$0
-- Epilepsy	\$9.500	\$10.500	\$10.500	\$0
-- National Lupus Patient Registry	\$8.500	\$9.500	\$9.500	\$0
-- Racial and Ethnic Approach to Community Health	\$59.950	\$63.950	\$63.950	\$0
-- <i>Good Health and Wellness in Indian Country (non-add)</i>	<i>\$21.000</i>	<i>\$22.000</i>	<i>\$22.000</i>	<i>\$0</i>
-- Social Determinants of Health	N/A	\$3.000	\$153.000	+\$150.000
-- <i>Million Hearts (PPHF)</i>	<i>\$4.000</i>	<i>\$4.000</i>	<i>\$4.000</i>	<i>\$0</i>
-- <i>National Early Child Care Collaboratives (PPHF)</i>	<i>\$4.000</i>	<i>\$4.000</i>	<i>\$4.000</i>	<i>\$0</i>
-- <i>Hospitals Promoting Breastfeeding (PPHF)</i>	<i>\$9.000</i>	<i>\$9.500</i>	<i>\$9.500</i>	<i>\$0</i>

Enabling Legislation Citation: PHS A § 301, PHS A § 307, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317D*, PHS A § 317H*, PHS A § 317K*, PHS A § 317L*, PHS A § 317M*, PHS A § 317P*, PHS A § 330E*, PHS A § 398A, PHS A § 398B, PHS A § 399B, PHS A § 399C, PHS A § 399D, PHS A § 399E, PHS A § 399F*, PHS A § 399Q*, PHS A § 399R, PHS A § 399V-3*, PHS A § 399V-6, PHS A § 399W*, PHS A § 399X*, PHS A § 399Y*, PHS A § 399Z*, PHS A § 399LL*, PHS A § 399LL-1, PHS A § 399NN*, PHS A § 417E, PHS A § 1501–1510*, PHS A § 1706*, Comprehensive Smoking Education Act of 1984, Comprehensive Smokeless Tobacco Health Education Act of 1986, Federal Cigarette Labeling and Advertising Act, Fertility Clinic Success Rate And Certification Act of 1992 (P. L. 102-493), Firefighter Cancer Registry Act of 2018 (Pub. L. 115-194)*

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/expiring noted with *

Allocation Methods: Direct Federal Intramural; Competitive Cooperative Agreements/Grants, including Formula Grants; and Competitive Contracts

Chronic diseases—such as heart disease, cancer, chronic lung diseases, stroke, and diabetes—account for most deaths in the United States and globally, and are the major drivers of sickness, disability, and health care costs in the nation: they are responsible for 7 of 10 deaths among Americans each year, and they are leading drivers of the nation’s \$3.8 trillion in annual health care costs.⁵⁹

While chronic diseases affect all populations, they are not evenly distributed. Disease rates vary by race, ethnicity, education, and income level, with the most disadvantaged Americans often suffering the highest burden of disease. For example, African American women had a 39 percent higher rate of breast cancer deaths (27.6 per 100,000) than White women (19.8 per 100,000) in 2017. Diagnosed diabetes in adults is 65 percent higher among Hispanic and Latino persons, and twice as high among American Indians and Alaska Native persons, than non-Hispanic White persons. Cigarette smoking prevalence varies by education. In 2019, 35.3% of adults with a general education development diploma (GED) were current cigarette smokers, compared to 6.9% of adults with a bachelor’s degree.²

CDC’s Framework for Chronic Disease Prevention

Domain	Domain Description
Epidemiology and surveillance	Provides robust data and information to understand chronic diseases and risk behaviors, inform interventions, and track progress in addressing them
Environmental approaches	Supports and reinforces healthy behaviors in communities, workplaces, and schools
Health care system interventions	Increases the effective delivery and use of clinical and other preventive services
Community programs linked to clinical services	Ensures people with or at high risk for chronic conditions have the support they need to reduce their risks, manage their conditions, and improve their quality of life

⁵⁹ National Health Care Spending In 2019: Steady Growth For The Fourth Consecutive Year. Anne B. Martin, Micah Hartman, David Lassman, Aaron Catlin, and The National Health Expenditure Accounts Team. Health Affairs 2021 40:1, 14-24. <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2020.02022>.

⁵⁹ Cornelius ME, Wang TW, Jamal A, Loretta C, Neff L. Tobacco Product Use Among Adults - United States, 2019. Morbidity and Mortality Weekly Report (MMWR). November 2020.

CDC's chronic disease prevention framework⁶⁰ guides its efforts to build and strengthen the systems and environments that help Americans take charge of their own health. Work in each domain contributes to CDC's goals of preventing and reducing chronic diseases, conditions, and associated risk factors and behaviors; promoting health; and eliminating health disparities.

The COVID-19 pandemic has underscored the importance of addressing chronic diseases and underlying factors. CDC's chronic disease program recipients are using funding flexibilities to address COVID-19 within the scope of their activities. For example, one Racial and Ethnic Approaches to Community Health (REACH) recipient has reported shifting resources to support the demands of the local and state COVID-19 response while still attending to the main objective of addressing disparities in preventable chronic disease risk factors. Because of its established community relationships, the program is well-positioned to share messages around increased risk of severe COVID-19 in racial and ethnic minority groups.

In another example of the utility of COVID-19 supplemental funds, CDC's Healthy Schools is working with all 16 funded states and five nongovernmental organizations to quickly adapt and promote evidence-based strategies and tools that can promote healthy learning and habits for students as schools are negatively impacted by COVID-19.

CDC's FY 2022 request of **\$1,452,664,000** for the Chronic Disease Prevention and Health Promotion program is **\$176,000,000** above the FY 2021 Enacted level.

The request increases resources to support states, tribes, and territories to address key variables that contribute to chronic disease health disparities where people live, work, and play, and with a particular focus on improving pregnancy and postpartum outcomes.

In FY 2022, CDC will continue to lead U.S. efforts to prevent and control chronic diseases and associated risk factors through evidence-based strategies:

- Supporting a robust public health response at all levels by implementing focused chronic disease prevention interventions through state, tribal, local, and territorial health departments; community-based organizations; and nongovernmental partners.
- Monitoring chronic diseases, conditions, and risk factors to track national trends and evaluate effective interventions.
- Conducting and translating public health research and evaluation to improve the uptake of effective public health strategies.
- Providing national leadership and technical assistance to build the evidence for effective prevention programs.
- Communicating to partners and the general public about chronic disease burden, risks, and prevention opportunities.
- Informing sound public health policies that reduce rates of chronic diseases and associated risk factors.

⁶⁰ Bauer UE, Briss PA, Goodman RA, Bowman BA. Prevention of chronic disease in the 21st century: elimination of the leading preventable causes of premature death and disability in the USA. *Lancet* 2014;384:45-52.

CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

BY THE NUMBERS

Chronic diseases are the leading causes of death and disability, and a major driver of health care spending in the United States: more than half of adults have a chronic disease and 33.8% of adults have two or more chronic diseases.^{1*} Poor nutrition, lack of physical activity, and tobacco use are key risk factors. CDC programs produce lasting change when it comes to addressing these costly conditions. Based on the most recent data available:

- **Over 2.9 million**—People who have better access to healthy foods and beverages because of Racial and Ethnic Approaches to Health (REACH) program activities from 2014 to 2018.
- **19%**—Approximate prevalence of obesity among children and adolescents ages 2–19 years. More than 40% of adults have obesity,² increasing risks for high blood pressure, heart disease, many cancers, and type 2 diabetes.
- **6%**—Increase over 5 years in blood pressure control rates among adults receiving care in health systems participating in CDC-funded state programs.
- **Over 500,000**—People reducing or reversing their risk of type 2 diabetes by participating in CDC’s National Diabetes Prevention Program between 2012–2020.
- **Almost 1 million**—Annual number of people with diabetes who receive diabetes self-management education and support services supported by CDC-funded state programs, reducing their risk for diabetes complications.
- **Almost 1 million**—Cavities prevented in children living in low-income households as a result of dental sealants supported by CDC grant programs. About one in six children ages six to 11 years have had tooth decay.³
- **47**—States that adopted a policy that supports farm-to-school or farm-to-early care and education (ECE) providers, from 2002 to 2017.⁴
- **45%**—Proportion of schools that, with support from CDC, provide access to physical activity spaces and facilities for community residents outside of the school day. CDC investments also helped 36 states and Washington, D.C. adopt state Complete Streets policies that make it easier to cross the street, walk to shops, and bicycle to work.^{5,6}
- **3.6 million**—U.S. youth who used e-cigarettes in 2020, a decline of about 1.8 million youth from 5.4 million in 2019.⁷
- **2.97 million**—Children with improved access fruits and vegetables from 2010 to 2020, partially due to CDC’s membership as a founding partner of the Salad Bars to Schools Program. This program donated 5,946 salad bars to schools around the U.S.
- **About 1 million**—Adults who quit smoking with the help of the CDC’s Tips from Former Smokers media campaign, from 2012 to 2018.⁸
- **12 percentage points**—Average increase in screening rates among clinics recruited in the first year of the Colorectal Cancer Control Program (CRCCP). The median rate rose from 42.9% in 2016 to 55.2% in 2019. This translates to 95,504 additional screenings.
- **50**—Number of states plus Washington, D.C. that use the Whole School, Whole Child, Whole Community model to improve health outcomes for over 10 million students.
- **\$5.6 billion**—Medical costs averted by Million Hearts during its first five years, most of it in Medicare savings.
- **135,000**—Cardiac events prevented by Million Hearts during its first five years.

CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

BY THE NUMBERS...

***References:**

¹ Falci L, Shi Z, Greenlee H. Multiple Chronic Conditions and Use of Complementary and Alternative Medicine Among US Adults: Results from the 2012 National Health Interview Survey. *Prev. Chronic Dis.* 13, E61.

² Hales CM, Carroll MD, Fryar CD, Ogden CL. Prevalence of obesity among adults and youth: United States, 2015–2016. NCHS data brief, no 288. Hyattsville, MD: National Center for Health Statistics. 2017. <https://www.cdc.gov/nchs/data/databriefs/db288.pdf>.

³ Centers for Disease Control and Prevention. Oral Health Surveillance Report: Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism, United States, 1999–2004 to 2011–2016. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2019

⁴ <https://www.saladbars2schools.org/>

⁵ Centers for Disease Control and Prevention. Results from the School Health Policies and Practices Study. 2016.

https://www.cdc.gov/healthyouth/data/shpps/pdf/shpps-results_2016.pdf

⁶ Smart Growth America. Complete Streets Policy Atlas. Accessed 8/17/2020 at <https://smartgrowthamerica.org/program/national-complete-streets-coalition/publications/policy-development/policy-atlas/>.

⁷ Wang, TW, Gentzke, AS, Creamer, MR et al. Tobacco Product Use and Associated Risk Factors Among Middle and High School Students – United States, 2019. *MMWR Surveill Summ* 2019; 68(No. 12)

⁸ <https://www.cdc.gov/tobacco/campaign/tips/about/impact/campaign-impact-results.html>

⁹ Youth Risk Behavior Surveillance — United States, 2017, *Surveillance Summaries* / June 15, 2018 / 67(8);1–114

https://www.cdc.gov/mmwr/volumes/67/ss/ss6708a1.htm?s_cid=ss6708a1_w

*Unless otherwise noted, all information and calculations are from CDC program data

Chronic Disease Prevention and Health Promotion Funding History	
Fiscal Year	Dollars (in millions)
2018 (BA)	\$912.307
2018 (PPHF)	\$247.550
2019 (BA)	\$929.637
2019 (PPHF)	\$254.950
2020 (BA)	\$984.964
2020 (PPHF)	\$254.950
2021 Enacted (BA)	\$1,021.714
2021 Enacted (PPHF)	\$254.950
2022 President’s Budget (BA)	\$1,197.714
2022 President’s Budget (PPHF)	\$254.950

Social Determinants of Health Budget Request

Factors in the places where people live, learn, work and play, called social determinants of health (SDOH), affect a wide range of health risks and outcomes. Differences in SDOH contribute to the stark and persistent chronic disease and other health disparities in the United States among racial, ethnic, and socioeconomic groups, systematically limiting opportunities for members of some groups to be healthy. Interventions targeting SDOH have tremendous potential to narrow disparities across many chronic diseases by removing systemic barriers to practicing healthy behaviors.

Though CDC has always worked to address and improve structural and environmental factors that relate to health outcomes, the agency supported its first Social Determinants of Health pilot program in FY 2020. Resources provided in the FY 2021 appropriation are being used to build upon those pilots and enable recipients across the country to identify domains of concern that contribute to chronic disease and other health disparities in their communities. Recipient jurisdictions are coordinating multisectoral partnerships and developing SDOH accelerator plans to improve health and resilience among populations adversely affected by characteristics of the built environment, food security, clinical-community linkages, social connectedness, and other SDOH domains.

CDC will leverage and coordinate efforts currently underway across the agency to ensure that drivers of health inequity are addressed in our scientific and intervention planning, implementation, and evaluation activities.

COVID-19 has highlighted the importance of clinical-community linkages, particularly among groups historically underrepresented in medical professions, racial and ethnic minority populations, and people in economically disadvantaged circumstances. The recent Community Health Workers for COVID Response and Resilient Communities (CCR) cooperative agreement has sought to improve community health workers' knowledge, skills, and long-term integration into organizations and care teams that improve SDOH and health outcomes among groups affected by systemic inequities. Additional SDOH resources will leverage these efforts and other CDC programs addressing health equity to implement sustainable activities that address SDOH.

Budget Request

CDC's FY 2022 request of **\$153,000,000** for Social Determinants of Health is **\$150,000,000** above the FY 2021 Enacted level. Programs in FY 2022 will expand activities to address SDOH in all States and Territories, including but not limited to expanding and implementing accelerator plans, initiating a SDOH implementation program, providing technical assistance to communities and continuing to build the evidence base through improved data collection to better understand health disparities.

Cancer Prevention and Control Budget Request

Cancer affects every age group and is responsible for more years of life lost than all other causes of death combined. It is the second leading cause of death in the United States, resulting in over 598,000 deaths annually—more than 1,630 deaths each day.

While advances in cancer detection and treatment help reduce the proportion of people who die from cancer, significant disparities in cancer prevention, screening, early detection, and quality of care persist. As the U.S. population ages, more people will be at risk for developing cancer. CDC works with state, tribal, and territorial health departments, and nongovernmental organizations to improve cancer prevention and early detection. The COVID-19 pandemic has had a significant impact on in-person services like cancer screening and proper follow-up. CDC is committed to assisting partners and states to increase access to screenings and other critical cancer-related services.

Budget Request

CDC's FY 2022 request of **\$385,799,000** for Cancer Prevention and Control is level with FY 2021 Enacted. In FY 2022, the budget request includes dedicated funding to support the following programs.

National Breast and Cervical Cancer Early Detection Program (NBCCEDP)

In 2017, more than 250,000 women were diagnosed with breast cancer and more than 42,000 died from this disease. Cervical cancer is preventable, yet in 2017, more than 12,800 women were diagnosed and about 4,200 women died from the disease. Breast and cervical cancer screening are proven methods to find cancers early when treatment is more effective. Unfortunately, screening rates remain low in some population subgroups, such as the uninsured, resulting in diagnosis at later stages and more preventable deaths.

CDC's [National Breast and Cervical Cancer Early Detection Program \(NBCCEDP\)](https://www.cdc.gov/cancer/nbccedp/index.htm)⁶¹ provides direct cancer screening and diagnostic services to uninsured or underinsured women in 50 States, Washington, D.C., 13 tribes/tribal organizations, and six U.S. territories. Since 1991, the NBCCEDP has served more than 5.8 million women and diagnosed more than 71,107 cases of invasive breast cancer, 4,863 cases of invasive cervical cancer, and 222,091 precancerous cervical lesions.

Funded programs implement proven strategies that increase health system delivery of services, such as patient and provider reminder systems or patient navigation, to increase the number of individuals who complete the screening process, particularly among those who have never or rarely been screened, or those who are in an age bracket that puts them at greater risk. For example, the New York State Department of Health's Cancer Services Program partnered with more than 5,000 doctors to educate women and provide cancer screening tests. In a single year (between 2018 and 2019), the program screened 26,126 women and diagnosed 205 with breast cancer or precancerous cells, 118 with cervical cancer or precancerous cells, and 434 with colorectal cancer or precancerous cells. More than 240 adults were enrolled in the State Medicaid Treatment Program.

In FY 2022, CDC anticipates awarding a new five-year cooperative agreement for the NBCCEDP.

Colorectal Cancer Control Program (CRCCP)

Colorectal cancer (CRC) is the second leading cause of death among cancers that affect both men and women. There is strong evidence that screening adults aged 50 to 75 for CRC reduces the number of people getting and dying from the disease. Yet nearly 22 million adults, including those with insurance, are not up-to-date on their colorectal cancer screenings.

⁶¹ <https://www.cdc.gov/cancer/nbccedp/index.htm>.

CDC's [Colorectal Cancer Control Program \(CRCCP\)](#)⁶² funds 35 award recipients: 20 states, eight universities, two tribal organizations, and five other organizations to implement evidence-based interventions in primary care clinics to increase CRC screening rates. From July 2015 to March 2020, awardees partnered with 832 health system clinics that served 1.3 million patients eligible for CRC screening. Among clinics recruited in 2015, screening rates increased more than 12 percentage points from a median rate of 42.9 percent in 2016 to 55.2 percent in 2019.

For example, the Sandhills Medical Foundation is a federally qualified health center with multiple clinics serving four counties in South Carolina, two of which had low colorectal cancer screening rates. The South Carolina CRCCP worked with the clinics to set up provider reminders, establish a standard screening process, and provide professional education to staff. Screening rates increased from 65 percent in 2015 to 83 percent in 2018 at one clinic and from 44 percent in 2015 to 83 percent at the other. The Sandhills Medical Foundation was one of only two health centers in South Carolina to achieve the national goal of getting 80 percent of patients screened for colorectal cancer by 2018.

In FY 2022, the CRCCP will be in the second year of a five-year cooperative agreement. CDC anticipates continuing to fund all 35 award recipients.

National Program of Cancer Registries

CDC's [National Program of Cancer Registries \(NPCR\)](#)⁶³ funds 46 states, Washington, D.C., Puerto Rico, the U.S. Pacific Island jurisdictions, and the U.S. Virgin Islands to collect data about cancer cases and deaths for 97 percent of the population. NPCR coordinates with the National Cancer Institute (NCI) to produce the U.S. Cancer Statistics (USCS), the official federal cancer statistics providing cancer data on 100% of the U.S. population. CDC provides the USCS data through a public use database and a data visualization tool that allows users to customize views of cancer statistics at the national, state, county, and smaller geographic levels.

NPCR is working to develop a single cloud-based computing platform shared by all central cancer registries that can improve efficiency, reduce costs, and ultimately deliver more accurate, comprehensive cancer statistics in real time. These real-time statistics will greatly improve the ability of researchers, clinicians, policy makers, and public health professionals to define and monitor burden; identify trends in incidence; investigate patterns of cancer treatment; and evaluate the effectiveness of investments to prevent cancer.

For example, Arkansas has some of the lowest breast and cervical cancer screening rates among rural counties and has high rates of these cancers. Using mammogram data from national health survey and CDC's National Program of Cancer Registries, the Arkansas BreastCare and Cancer Survivorship Program developed data maps identifying groups or locations with low screening rates or high disease burden. From 2018 to 2019, use of these data maps increased screenings by around 18%; increased use of mobile mammography by around 35 percent, and increased enrollment in the program from about 220 to more than 300. These increases led to 102 cases of precancer being diagnosed.

In FY 2022, CDC anticipates awarding a new five year cooperative agreement for the program.

⁶² <https://www.cdc.gov/cancer/crccp/index.htm>.

⁶³ <https://www.cdc.gov/cancer/npcr/index.htm>.

National Comprehensive Cancer Control Program

At least half of all cancer deaths can be prevented by adopting healthier behaviors. CDC’s [National Comprehensive Cancer Control Program \(NCCCP\)](#)⁶⁴ funds 50 states, Washington, D.C., eight tribal organizations, and seven U.S. territories. Awardees create tailored cancer control plans that support effective strategies to prevent and reduce cancer within their state or jurisdiction. The NCCCP supports policy, systems, and environmental improvements as well as translation of scientific evidence that advance cancer prevention, early detection and treatment, survivor support, and health equity.

For example, the South Dakota Department of Health’s Comprehensive Cancer Control and All Women Count programs partnered to increase human papillomavirus (HPV) vaccination rates in South Dakota. Initially, they funded seven health care facilities to use proven interventions to increase HPV vaccination rates, such as client reminders and provider assessment and feedback. Completion of the three-dose series among adolescents increased by 12 percent at the seven sites in the first year. Adolescents receiving zero doses of HPV vaccine at these sites decreased by 22 percent in the first year. The project was expanded to 39 sites across the state in the second year.

In FY 2022, CDC anticipates awarding a new five-year cooperative agreement for the program.

Breast Cancer Awareness for Young Women

While breast cancer mostly affects older women, 10 percent of all breast cancers in the United States are reported in women younger than 45. Risk for breast cancer among young women varies based on factors such as family and personal history of cancer. CDC’s [Bring Your Brave campaign](#)⁶⁵ is a digital advertising and social media campaign aimed at raising awareness in young women about their risk. The campaign shares the stories of women affected by breast cancer and includes stories about prevention, women’s own history and family history of cancer, and discussions with health care professionals to help women understand and manage their risk.

CDC also provides free continuing medical education (CME) courses to educate health care providers about the frequency of breast cancer diagnosis in women younger than 45, the risk factors associated with early-onset breast cancer, and the steps that can be taken to decrease the risk and monitor for signs of early-onset breast cancer. During 2020, almost 11,000 people registered for these free CME courses. In FY 2022, CDC will expand awareness and prevention messages to target audiences and underserved populations, develop resources for providers and patients, and evaluate funded programs.

Johanna’s Law

[CDC’s Inside Knowledge: About Gynecologic Cancer](#)⁶⁶ campaign supports the Gynecologic Cancer Education and Awareness Act of 2005, or Johanna’s Law. This campaign raises awareness of the five types of gynecologic cancer: cervical, ovarian, uterine, vaginal, and vulvar. The campaign increases gynecologic cancer awareness by providing free videos, print public service announcements (PSAs), and shareable graphics for organizations and individuals to share through various media outlets. The campaign educates health care providers and women of all ages, races, and ethnic groups—especially individuals 35 and older—about the signs, symptoms, risk factors, and prevention strategies related to gynecologic cancers.

Overall, *Inside Knowledge* has generated more than 7.4 billion impressions across search engines, social media, digital display, paid digital advertising, and earned media. These ads have accumulated over 27 million clicks to CDC resources. In FY 2022, CDC will continue to educate women about these five cancers.

⁶⁴ <https://www.cdc.gov/cancer/ncccp/index.htm>.

⁶⁵ https://www.cdc.gov/cancer/breast/young_women/bringyourbrave/about.htm#:~:text=CDC%20launched%20Bring%20Your%20Brave%20in%202015%20to_whose%20lives%20have%20been%20affected%20by%20breast%20cancer.

⁶⁶ <https://www.cdc.gov/cancer/gynecologic/knowledge/index.htm>.

Ovarian Cancer

Ovarian cancer is the second most common gynecologic cancer and the leading cause of death among cancers of the female reproductive system in the United States. Each year, about 20,000 new cases of ovarian cancer are reported and about 14,000 women die of this cancer in the United States. Treatment is most effective when ovarian cancer is found at an early stage. However, given the lack of an effective screening test, it is especially important to recognize warning signs and learn about factors that may reduce risk of getting ovarian cancer. CDC conducts extensive research to better understand patterns of care and disparities among women with ovarian cancer across different regions of the United States. In addition, CDC supports state health departments to develop best practices for increasing referrals to gynecologic oncologists and action plans to help increase the adoption of evidence-based interventions.

In FY 2022, CDC will continue to translate research findings on gynecologic cancers and work with partners to improve quality of life for women diagnosed with ovarian cancer.

Prostate Cancer

Prostate cancer is the second most common cancer among males in the United States. In 2017, 207,430 new cases of prostate cancer were reported, and 30,486 men died of this cancer. CDC works to improve the quality of prostate cancer data in cancer registries, especially information about the grade and stage of prostate cancer at the time of diagnosis, patterns of care, and the race and ethnicity of men with prostate cancer. CDC also sponsors research on men's and health care providers' knowledge and awareness of prostate cancer screening and monitors prostate cancer activities identified in local cancer control plans. To help navigate options for prostate cancer screening and treatment, CDC developed interactive decision aids featuring virtual human simulators:

- The video [Talk to Nathan about Prostate Cancer Screening](#)⁶⁷ can help patients decide whether to get screened.
- [Talk to Someone about Prostate Cancer Treatment](#)⁶⁸ can help patients get ready to talk to their doctor about treatment options.
- [Talk to Someone: Explore Talking to Patients about Prostate Cancer](#)⁶⁹ helps health care providers practice helping patients make decisions about prostate cancer screening and treatment. In FY 2022, CDC will continue to increase sharing of screening-related information between providers and their patients.

Skin Cancer

Skin cancer is the most common cancer in the United States. Each year, more than 5 million people are treated for skin cancer at a cost of about \$8.1 billion. Currently, 22 states and Washington, D.C. prohibit indoor tanning in commercial facilities among minors younger than 18, leading to a more than 50 percent decline in indoor tanning use among high school students since 2009. However, the prevalence of sunburn remains high, and the use of sun protection is too low. CDC uses data, science, and public health programs to empower individuals and their communities to adopt best practices to reduce cancer risk. In FY 2022, CDC will continue to use proven interventions that can lead to lower exposure to UV radiation, the major cause of skin cancer.

⁶⁷ <https://simulations.kognito.com/PROS/PatientScreening/>.

⁶⁸ <https://simulations.kognito.com/PROS/PatientTreatment/>.

⁶⁹ <https://simulations.kognito.com/pros/provider/>.

Cancer Survivorship Resource Center

There are currently more than 15.5 million cancer survivors in the United States, and this number is projected to increase to 26 million by 2040.⁷⁰ CDC addresses the needs of survivors by making the health issues facing cancer survivors a public health priority, conducting epidemiologic and applied research and surveillance, and supporting programs for survivors. The Resource Center complements the NCCCP's work in survivorship and will utilize this program as a key partner in dissemination. CDC will continue to support the Resource Center in FY 2022, including communication initiatives funded through the NCCCP.

⁷⁰ Bluethmann SM, Mariotto AB, Rowland, JH. Anticipating the "Silver Tsunami": Prevalence Trajectories and Comorbidity Burden among Older Cancer Survivors in the United States. *Cancer Epidemiol Biomarkers Prev.* 2016;25:1029-1036.

Diabetes Budget Request

About 34.2 million Americans have diabetes including 210,000 children and adolescents. Each year another 1.5 million Americans aged 18 or older are newly diagnosed. Additionally, CDC estimates that 88 million American adults—more than one in three—have prediabetes, a serious health condition that increases the risk of developing type 2 diabetes, heart disease, and stroke.⁷¹ Diabetes can lead to acute illness requiring hospitalization and premature death. In 2016, a total of 16 million emergency department visits and 7.8 million hospitalizations were reported with diabetes as any listed diagnosis among adults. More than 270,000 people in the United States die from diabetes complications each year.⁷²

Surveillance data reported to CDC from January through May 2020 show that coronavirus disease 2019 (COVID-19) hospitalizations were six times higher and deaths 12 times higher for people with an underlying medical condition, such as diabetes, heart disease, or chronic lung disease.⁷³ In addition, patients hospitalized with COVID-19 were more likely to be readmitted to the same hospital within two months of discharge if they had diabetes or chronic kidney disease.⁷⁴

Diabetes is also expensive. The total estimated cost of diabetes was \$327 billion in 2017, which included \$237 billion in medical costs and \$90 billion for costs due to reduced productivity because of disability, loss of work, and premature death. Between 2012 and 2017, excess medical costs associated with diabetes increased from \$8,417 to \$9,601 per person.⁷⁵

Budget Request

CDC's FY 2022 request for Diabetes of **\$177,429,000**, including **\$52,275,000** from the Affordable Care Act Prevention and Public Health Fund and **\$29,300,000** for the National Diabetes Prevention Program, is level with FY 2021 Enacted.

National Diabetes Prevention Program (National DPP)

CDC works to address the increasing burden of prediabetes and prevent or delay progression to type 2 diabetes. To accomplish this, CDC implements the [National Diabetes Prevention Program \(National DPP\)](#)⁷⁶ and manages cross-cutting cooperative agreements to prevent type 2 diabetes and reduce diabetes-related complications.

The National DPP puts into practice groundbreaking clinical trial findings that type 2 diabetes can be prevented or delayed through a structured lifestyle change program in adults at high risk.⁷⁷ This partnership of public and private organizations provides an opportunity for people with prediabetes to participate in an evidence-based, affordable, and high-quality lifestyle change program. The National DPP lifestyle change program can be delivered in-person, online, by distance learning, and through a combination of these formats to reach more people.

Both [private and public insurers](#)⁷⁸ increasingly cover the National DPP lifestyle change program because it is affordable. The National DPP saves an estimated \$1,146 per participant in [health care costs](#)⁷⁹ for in-person

⁷¹ <https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf>.

⁷² <https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf>.

⁷³ Stokes EK, Zambrano LD, Anderson KN, et al. Coronavirus Disease 2019 Case Surveillance—United States, January 22–May 30, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:759–765. DOI: <http://dx.doi.org/10.15585/mmwr.mm6924e2>.

⁷⁴ Lavery AM, Preston LE, Ko JY, et al. Characteristics of Hospitalized COVID-19 Patients Discharged and Experiencing Same-Hospital Readmission — United States, March–August 2020. *MMWR Morb Mortal Wkly Rep*. ePub: 9 November 2020. DOI: <http://dx.doi.org/10.15585/mmwr.mm6945e2>.

⁷⁵ American Diabetes Association, Economic Costs of Diabetes in the U.S. in 2017. *Diabetes Care* 2018; 41(5):917-928.

⁷⁶ <https://www.cdc.gov/diabetes/prevention/index.html>.

⁷⁷ Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med*. 2002;346(6):393–403. <https://doi.org/10.1056/NEJMoa012512>.

⁷⁸ <https://coveragetoolkit.org/participating-payers/>.

⁷⁹ <https://coveragetoolkit.org/cost-value-elements/>.

group classes and \$618 for online classes over five years.⁸⁰ For the commercially insured population, the return on investment for the National DPP could be as high as 42percent.⁸¹

CDC worked with the Centers for Medicare & Medicaid Services (CMS) to support Medicare coverage for the National DPP lifestyle change program (“Medicare DPP”) based on evidence from a Center for Medicare and Medicaid Innovation model test. About 6,000 Medicare beneficiaries participated in this model test, which was supported by the YMCA of the U.S.A and CDC. Participants who attended at least four sessions had an average weight loss of 4.7percent of their body weight, and those who attended at least nine sessions had an average weight loss of 5.2percent. Medicare could save \$2,650 per Medicare DPP participant over 15 months.⁸²

Since the onset of the COVID-19 pandemic, most CDC-recognized organizations are offering virtual (telehealth) options for the National DPP lifestyle change program. A 2017 study in rural communities found that participants who received the program through telehealth videoconferencing had similar rates of participation and achieved similar weight loss as participants who attended the program in person.⁸³

In FY 2022, CDC will:

- Expand technical assistance and training for the more than 1,700 CDC-recognized program delivery organizations, employers, insurers, health care systems, and other stakeholders through the National DPP Customer Service Center.
- Monitor National DPP delivery organizations through the CDC Diabetes Prevention Recognition Program.
- Support CMS expansion of the Medicare DPP as a covered service for Medicare beneficiaries with prediabetes.
- Collect and analyze timely data through the National DPP Operations Center to help staff and external stakeholders solve programmatic challenges so they can deliver the program.

Cross-Cutting Cooperative Agreements to Prevent Diabetes and Reduce Diabetes-related Complications

In FY 2021, CDC funded four cross-cutting cooperative agreements to support diabetes prevention and management and reduce diabetes-related complications.^{84,85,86,87} These programs implement and evaluate evidence-based strategies to manage diabetes and prevent or delay type 2 diabetes in populations with high rates of the disease; develop new approaches to increase the reach and effectiveness of public health strategies in populations with high rates of diabetes, heart disease, and stroke; and build the National DPP infrastructure in communities that need it most.

In November 2020, CDC expanded the U.S. Diabetes Surveillance System with a new social determinants of health (SDOH) module to help identify under-resourced areas of the United States and assess the impact of health disparities on the rate of diabetes and risk factors.⁸⁸

⁸⁰ Institute for Clinical and Economic Review. Diabetes Prevention Programs: Effectiveness and Value. 2016. https://icer-review.org/wp-content/uploads/2016/07/CTAF_DPP_Final_Evidence_Report_072516.pdf.

⁸¹ Khan T, Tsipas S, Wozniak G. Medical care expenditures for individuals with prediabetes: the potential cost savings in reducing the risk of developing diabetes. *Popul Health Manag.* 2017;20:389–396.

⁸² Spitalnic P. Certification of Medicare Diabetes Prevention Program. 2016. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/ActuarialStudies/Downloads/Diabetes-Prevention-Certification-2016-03-14.pdf>.

²² Vadheim, L. M., Patch, K., Brokaw, S. M., Carpenedo, D., Butcher, M. K., Helgerson, S. D., & Harwell, T. S. (2017). Telehealth delivery of the diabetes prevention program to rural communities. *Translational behavioral medicine*, 7(2), 286–291. <https://doi.org/10.1007/s13142-017-0496-y>

⁸⁴ <https://www.cdc.gov/diabetes/programs/stateandlocal/funded-programs/dp18-1815.html>.

⁸⁵ <https://www.cdc.gov/diabetes/programs/stateandlocal/funded-programs/dp18-1817.html>.

⁸⁶ <https://www.cdc.gov/diabetes/programs/stateandlocal/funded-programs/dp17-1705.html>.

⁸⁷ <https://www.cdc.gov/diabetes/ndwp/about-us/index.html>.

⁸⁸ <https://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>.

In 2017, CDC awarded just over \$14 million to 10 national organizations under [*Scaling the National Diabetes Prevention Program in Underserved Areas*](#),⁸⁹ a five-year cooperative agreement that aims to expand the reach of the National DPP to reach rural areas with fewer resources to address health disparities. CDC provided technical assistance and support to build and sustain the organizations' capacities to deliver the National DPP lifestyle change program beyond the scope of the cooperative agreement. Participant organizations had flexibility to address local needs:

- Developed culturally and linguistically adapted curricula and materials.
- Became Medicare DPP suppliers.
- Created reimbursement agreements with major employers.
- Trained lifestyle coaches to help participants achieve programmatic goals.
- Developed systems and technologies to support bidirectional referrals with health care organizations to support participant enrollment and retention.

As of December 2020, these 10 national organizations were working with more than 110 affiliated sites to deliver the National DPP lifestyle change program in 34 states, Washington, D.C., and 4 U.S.-Affiliated Pacific Islands (USAPI). These sites enrolled over 11,100 eligible participants, with representation from priority populations including Hispanic/Latino, African American, Medicare beneficiaries, American Indian/Alaska Native, Asian American, Pacific Islander, and noninstitutionalized people with visual impairments or physical disabilities. Eligible participants who completed the year-long lifestyle change program and reported physical activity minutes averaged 202 minutes per week. Participants who attended three or more sessions in the first 6 months and stayed in the program for at least 9 full months had an average weight loss of 4.6 percent.

In FY 2022, CDC will continue funding state and local health departments, tribes and tribal organizations, USAPI territories and jurisdictions, and national organizations to implement evidence-based strategies to prevent or delay type 2 diabetes in high-burden populations, improve diabetes care and self-management, and prevent or reduce the severity of diabetes complications by:

- Increasing access to programs to prevent or delay onset of diabetes complications through diabetes self-management education and support (DSMES) services that meet national quality standards.
- Increasing referrals to and enrollment in the National DPP's lifestyle change program.
- Expanding coverage for DSMES and the National DPP's lifestyle change program among private insurers, public insurers like Medicaid, and employer-provided health benefits.
- Reducing barriers to participation and retention in the National DPP's lifestyle change program and DSMES services and expanding their delivery on virtual platforms.

⁸⁹ <https://www.cdc.gov/diabetes/programs/stateandlocal/funded-programs/dp17-1705.html>.

Safe Motherhood and Infant Health Budget Request

For more than 50 years, CDC has worked to support pregnant and postpartum individuals and their babies by promoting optimal and equitable health through surveillance, science, and service. This effort not only supports societal goals but makes financial sense: preterm births (occurring earlier than 37 weeks' gestation) cost the U.S. health care system more than \$26 billion per year, and the annual cost of unintended pregnancy is about \$21 billion.^{90,91}

Budget Request

CDC's FY 2022 request of **\$89,000,000** for Safe Motherhood and Infant Health is **\$26,000,000 above** the FY 2021 Enacted level. CDC will expand its support for Maternal Mortality Review Committees (MMRCs) to implement data collection and data-driven action to prevent maternal deaths and illness. This funding level would expand support to all states and territories, working toward better understanding the causes of pregnancy related death and prevention opportunities. CDC is also conducting [Hear Her](#),⁹² a national campaign to raise awareness of critical warning signs during and after pregnancy, and to improve communication between patients and their health care providers.

In FY 2022, CDC will continue to support Safe Motherhood and Infant Health, including a portfolio of five key activities:

- [Enhancing Reviews and Surveillance to Eliminate Maternal Mortality \(ERASE MM\)](#):⁹³ Increase support to all states and territories for organizations coordinating and managing Maternal Mortality Review Committees to identify, review, and characterize maternal deaths and identify prevention opportunities. This funding will include technical assistance to strengthen regional collaboration and work with tribes to maximize MMRC impacts, and will include limited technical assistance to Puerto Rico and other territories that expressed interest in developing MMRCs.
- [Perinatal Quality Collaboratives \(PQCs\)](#):⁹⁴ Continue to support 13 states to improve maternity care quality and women and newborn health outcomes, including improving treatment for opioid use disorder during pregnancy and reducing hospital stays and length of treatment for newborns with symptoms of drug withdrawal (Neonatal Abstinence Syndrome). PQCs provide infrastructure supporting quality improvement efforts addressing obstetric and neonatal care and outcomes. State-based PQCs are networks of hospitals, patients, public health, and other stakeholders providing opportunities for collaborative learning and quality improvement science to achieve systems-level change. With CDC support, PQCs have contributed to [important changes in health care](#).⁹⁵ For example, the Illinois Perinatal Quality Collaborative improved timely treatment for women with severe high blood pressure, increasing the percentage of patients treated within 60 minutes from 41 percent at baseline to 79 percent in the first year of the project.
- [Sudden Unexpected Infant Death \(SUID\) Case Registry](#):⁹⁶ Support 22 states and jurisdictions, covering about one in three SUID cases in the United States, to provide comprehensive information about the circumstances associated with SUID and sleep-related infant deaths.
- [Monitor Assisted Reproductive Technology \(ART\)](#):⁹⁷ Collect data through the National ART Surveillance System (NASS) from every clinic in the United States that uses ART to treat infertility.

⁹⁰ Behrman RE, and Butler AS. Preterm Birth: Causes, Consequences, and Prevention. Institute of Medicine, 2007.

⁹¹ Sonfield A and Kost K. Public Costs from Unintended Pregnancies and the Role of Public Insurance Programs in Paying for Pregnancy-Related Care: National and State Estimates for 2010, New York: Guttmacher Institute, 2015.

⁹² <https://www.cdc.gov/hearher/index.html>.

⁹³ <https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/index.html>.

⁹⁴ <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pqc.htm>.

⁹⁵ <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pqc/working-together-improve-maternal-outcomes/index.html>.

⁹⁶ <https://www.cdc.gov/sids/case-registry.htm>.

⁹⁷ <https://www.cdc.gov/reproductivehealth/drh/activities/art.htm>.

- [Pregnancy Risk Assessment Monitoring System \(PRAMS\)](#).⁹⁸ Support 48 States, New York City, Washington, D.C., Puerto Rico, and the Great Plains Tribal Chairmen’s Health Board to collect data through PRAMS. PRAMS identifies behavior and health status trends and factors that put women and infants at risk for health problems, monitors access to care and services, and measures progress in improving mother and infant health.

Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM)

(dollars in millions)	FY 2020	FY 2021	FY 2022
	Final	Enacted	President’s Budget
Number of Awards	24*	30	56
- New Awards	0	6	26
- Continuing Awards	24	24	30
Average Award	\$0.378	\$0.377	\$0.343
Range of Awards	\$0.15-0.553	\$0.15– 0.553	\$0.15 – 0.597
Total Awards	\$9.076	\$11.318	\$19.204

*24 awards in FY 2020 supported 25 states, as one award went to a two-state collaborative MMRC.

⁹⁸ <https://www.cdc.gov/prams/index.htm>.

Oral Health Budget Request

Oral health is essential to overall health and well-being. Dental cavities are one of the greatest unmet health treatment needs.⁹⁹ Untreated cavities can lead to abscess (a severe infection) under the gums which can spread in the body and have serious, and in rare cases, fatal results. Among children aged six to eight years, over half (52 percent) have had a cavity in their primary (baby) teeth.²¹ Children from low-income households are twice as likely to have untreated cavities as children from higher-income households.²² Among adults aged 20 and older, about 90 percent have had at least one cavity.²² Dental sealants prevent 80 percent of cavities in the back teeth (where nine in 10 cavities occur). Although the number of students in the United States with sealants has increased over time, children from low-income households are 15 percent less likely to receive sealants and twice as likely to have untreated cavities as children from higher-income households.¹⁰⁰

Applying dental sealants in schools for about 7 million children from low-income families who don't have them could save up to \$300 million in dental treatment costs.

Budget Request

CDC's FY 2022 request of **\$19,500,000** for Oral Health is level with FY 2021 Enacted.

CDC's oral health program supports states and territories to reduce cavity and oral disease rates among different populations, and to integrate oral health programs into chronic disease prevention efforts and medical care services. CDC focuses on dental sealant programs for low-income children at high risk for oral health problems. Providing sealants to the almost seven million low-income children who need them could save up to \$300 million in averted dental treatment costs.²¹ Many school sealant programs were suspended during the early days of the COVID-19 pandemic as school systems pursued alternative learning or virtual schooling. CDC has provided infection prevention and control considerations to oral health programs that continue to offer school sealant programs during the pandemic.

CDC's oral health program has strengthened practice-based evidence by piloting state oral health and other chronic disease program collaborations. Findings from a two-year pilot in six states on integrating oral health with other programs, including tobacco use, diabetes, high blood pressure, nutrition, and obesity shaped a supplemental component of the subsequent five-year state award.

CDC serves as the national leader in infection prevention and control for the dental community, developing and promoting guidelines as well as tools and resources, including trainings and a mobile application to increase adherence to guidelines. With COVID-19, CDC's oral health program was integral in developing tailored COVID-19 guidance for dental health care personnel. Additionally, CDC is the only federal agency to host a dental public health specialty residency program, which produces skilled specialists in dental public health who can work with their public health and dental colleagues in an array of health settings to improve oral health for populations.

In FY 2022, CDC will continue supporting 20 states and one territory, building on successes from prior state awards and a pilot project to test collaboration models between state chronic disease prevention and oral health programs. These resources, plus technical assistance and training, help states and territories promote good oral health, track oral health behaviors and problems, and conduct and evaluate programs.

CDC also will continue to conduct research, analysis, and translation of national and state data on oral disease burden, dental care service use, preventive services, and cost-effectiveness.

⁹⁹ Centers for Disease Control and Prevention. Vital signs: dental sealant use and untreated tooth decay among US school-aged children. *MMWR*. 2016;65(41):1141-1145.

¹⁰⁰ Centers for Disease Control and Prevention. Oral Health Surveillance Report: Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism, United States, 1999–2004 to 2011–2016. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2019.

Heart Disease and Stroke Budget Request

Nothing kills more Americans—men or women—than cardiovascular diseases (CVD). Over 870,000 people die each year of these diseases, which include heart disease and stroke. CVD deaths account for one-third of all deaths—more than cancer and unintentional injuries combined. CDC surveillance data show that 75 million American adults have high blood pressure ($\geq 140/90$ mm Hg) which is a major risk factor for heart disease and stroke. Of concern, the proportion of adults who have their blood pressure controlled has decreased from 45.9 percent in 2010 to 43.9 percent in 2018, demonstrating the importance of interventions to improve blood pressure control. CDC has made improving rates of high blood pressure control the top priority for heart disease and stroke prevention, while continuing to focus efforts on other risk factors like high cholesterol that put millions more in danger.

Black persons are more likely to have high blood pressure and lower rates of control, to develop high blood pressure at younger ages, and to have more organ damage from it than White American persons. Among U.S. adults with high blood pressure, around 80 percent of Hispanic persons (81.6 percent) and Black persons (79.4 percent) have uncontrolled high blood pressure. The goal of reducing health disparities permeates all of CDC's heart disease and stroke prevention efforts. For example, we work with community health centers and other community-based organizations to implement best practices, invest in education in the Mississippi Delta, and translate materials and services into Spanish.

Each year, due to largely preventable CVD, the United States is losing an estimated \$351 billion in health care costs, lost productivity, and premature death; \$1 of each \$7 in health care costs will be spent on CVD. Unless we control key risk factors, the American Heart Association projects the cost will reach \$1.1 trillion per year by 2035.

During the COVID-19 pandemic, heart attacks and strokes are still happening every 20 seconds. A study reported in *Morbidity and Mortality Weekly Report* showed that emergency rooms reported significant nationwide declines in visits for heart attacks and strokes, implying that people may be forgoing care to avoid exposure to COVID-19. In addition, CVD seems to be linked with worse outcomes and increased risk of death in patients with COVID-19, and COVID-19 itself may induce myocardial injury and other cardiovascular problems.

Budget Request

CDC's FY 2022 request of **\$143,105,000** for Heart Disease and Stroke Prevention is level with FY 2021 Enacted and includes **\$57,075,000** from the Affordable Care Act Prevention and Public Health Fund. CDC supports state, local, tribal, and territorial heart disease and stroke prevention programs that help millions of Americans manage and control their high blood pressure and cholesterol; reduce other risk factors for heart disease and stroke; and get the best stroke care. In addition to funding awardees, CDC:

- Conducts surveillance to track illness and death from heart disease and stroke and to measure progress.
- Helps program awardees report, monitor, and track clinical data to better identify, manage, and treat patients with CVD.
- Conducts applied research to support evidence-based practice and evaluates programs and interventions to identify the most efficient and effective strategies.

State and Local Heart Disease and Stroke Cooperative Agreements

In FY 2022, CDC will continue to fund the 50 states, Washington, D.C., and several large cities to prevent and control high blood pressure, high cholesterol, and other heart disease and stroke risk factors by:

- Increasing the number of people with high blood pressure who monitor their own blood pressure regularly and share those measurements with their health care professional.

- Expanding the use of team-based care, in which doctors work with pharmacists, community health workers, and others outside of medical settings to manage a patient's high blood pressure.
- Increasing the use of electronic health records (EHR) and other technology to identify people who have heart disease and stroke risk factors and make sure they get the right treatment.
- Facilitating the referral of people to effective lifestyle programs that can help them learn to be physically active, eat nutritious foods, and monitor and manage their medical conditions.

During the last five-year funding cycle, health systems funded by CDC achieved a nearly 6 percent improvement in rates of high blood pressure control. Funded health care systems using EHR to manage and treat high blood pressure increased by more than 30 percent, supporting 48 million patients, and those with policies promoting team-based care increased 30 percent, supporting 33 million patients. In the current funding cycle, states are continuing to implement innovative approaches to controlling high blood pressure. For example, Pennsylvania is supporting high blood pressure and cholesterol management among 78 primary care sites in 31 health systems. These facilities have improved workflow, use of social determinants of health data, self-measured blood pressure monitoring with clinical support, and cholesterol management training. This effort helps pharmacies submit electronic care (eCare) plans that document medication therapy management and other interventions for managing high blood pressure, high cholesterol, and lifestyle change. Of the eCare plans submitted, 1,710 included referrals to care coordination.

Every year, more than 795,000 Americans have a stroke, and more than 185,000 of them will not survive. Strokes are the leading cause of long-term disability, and they generate more than \$45 billion in costs each year. CDC's Paul Coverdell National Acute Stroke Program funds nine states to collect and analyze stroke care data to identify gaps between recommended treatment guidelines and actual hospital practices. Awardees use these data to develop and improve processes and programs across the continuum of care, from the onset of stroke symptoms through emergency transport, hospitalization, and discharge. In late FY 2021, CDC will fund a new three-year cooperative agreement to support the implementation of comprehensive stroke systems, both for people at highest risk for stroke events and for stroke patients.

Receiving the clot-busting drug tissue plasminogen activator (tPA) greatly improves the chance of recovery for patients with the most common kind of stroke, but only if it is delivered quickly. Among Coverdell Program awardees, the percentage of patients receiving the drug within the national standard of 60 minutes rose from 47 percent in 2012 to 87 percent in 2019. In Georgia, for example, eligible patients receiving tPA within the state's 60-minute standard increased from 63 percent in 2015 to 85 percent in 2019. More than 20,000 stroke patients were treated by Coverdell hospitals in Georgia from July 2018 to June 2019.

Unfortunately, the COVID-19 pandemic has had a substantial impact on the operations and functionality of CDC's heart disease and stroke program awardees, with many programmatic operations being delayed or stopped. Some lack the capacity to conduct programmatic activities at all. These challenges will likely hamper performance and accomplishments in FY 2020 and potentially years beyond. In the meantime, CDC is working with its funded state and local programs to provide specialized technical assistance, offer flexibilities where appropriate, and develop plans for re-engagement when program capacity returns to normal.

Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN)

Heart disease is the number one killer of women. More than 385,000 women die from heart disease and stroke annually, at a cost of tens of billions of dollars. CDC's WISEWOMAN Program assesses low-income, uninsured and underinsured women aged 40 to 64 for CVD disease risk factors and connects them with evidence-based lifestyle programs, individualized health coaching, and community resources to support improved diet, physical activity, tobacco cessation, and medication adherence.

The program focuses on women at highest risk by collaborating with FQHCs, state and local health departments, state Medicaid offices, and primary care practices. Certain awardees receive additional funding to implement

and evaluate innovative strategies designed to reduce risks, complications, and barriers and contribute to evidence to address CVD in underserved communities.

WISEWOMAN made a difference for hundreds of thousands of women. From 2008 to 2018, WISEWOMAN provided 324,435 screenings to 226,461 women and provided nearly 432,000 Healthy Behavior Support Services (HBSS) to help them reduce their risk of heart disease and stroke. In the most recent program year, more than 75% of WISEWOMAN participants received at least one HBSS. For example, Vermont’s program offers 12 HBSS options to women across the state including Weight Watchers, Self-Measured Blood Pressure monitoring with health coaching, and the National Diabetes Prevention Program. Vermont has continued to offer a mix of in-person, online, or by-phone HBSS options to participants. The program has screened 605 women and referred 71 percent to an HBSS, where nearly every woman received at least five sessions during the entire funding cycle. Participants are referred to WISEWOMAN by the Breast and Cervical Cancer program, but, because of COVID-19, many NBCCEDP sites have been shut down or otherwise stopped referring patients.

In FY 2022, CDC will continue to fund 27 states and three tribal-serving organizations to provide screenings and referrals to healthy behavior support services to reduce CVD risk factors in program participants.

Million Hearts®

Million Hearts 2022 is a national initiative co-led by CDC and the Center for Medicare & Medicaid Services, with a goal of preventing one million heart attacks and strokes in five years. CDC provides valuable resources to help partners in public health and health care:

- Keep people healthy with public health efforts to reduce sodium consumption, increase physical activity, and decrease tobacco use.
- Optimize care by using teams, health information technology, and evidence-based processes to improve the ABCS (Aspirin when appropriate, Blood pressure control, Cholesterol management, and Smoking cessation), increasing participation in cardiac rehabilitation, and enhancing heart-healthy behaviors.
- Improve outcomes for priority populations, including African Americans with high blood pressure, people ages 35 to 64, people who have already had a heart attack or stroke, and people with mental health and/or substance use disorders who smoke.

In its first 5 years, Million Hearts:

- Prevented an estimated **135,000** heart attacks, strokes, and related acute cardiovascular events.
- Saved **\$5.6 billion** in direct medical costs, a substantial portion of which was saved by public insurance programs like Medicare and Medicaid

Million Hearts leverages a national network of more than 300 private partner organizations, all 50 states and Washington, D.C., and 20 federal agencies to advance Million Hearts priorities. One notable partnership with the National Association of Community Health Centers was able to generate significant reductions in high blood pressure among African Americans. The project resulted in an average 10 mm Hg decrease in systolic blood pressure over 16 months among more than 20,000 African Americans with uncontrolled high blood pressure.

In FY 2022, CDC will continue to leverage relationships with partner organizations to prevent heart attacks and strokes and by addressing risk factors like hypertension.

Nutrition, Physical Activity, and Obesity Budget Request

In the United States, poor diet and inactivity contribute to the leading causes of disease and death. Good nutrition, starting with breastfeeding, and regular physical activity improve health and overall well-being. Unfortunately, over 42 percent of adults (age 20 years and older) and 19 percent of children (ages two to 19) have obesity, increasing their risk for type 2 diabetes, heart disease, stroke, certain cancers, depression, and early death. The obesity epidemic strains American families, affects overall health, increases health care costs, and harms productivity. Military readiness is affected: about one in four young adults aged 17–24 currently do not meet the U.S. military’s weight and body fat requirements. DNPAO’s science and programs improve the overall health and well-being of across the lifespan, with a focus on promoting health equity. CDC’s conducts a variety of prevention activities connected with nutrition and physical activity:

- Funding and providing technical assistance to increase recipient and partner capacity to implement, evaluate, translate, and expand program activities at state and local levels.
- Facilitating partnerships to develop interventions, research, guidance, and policies.
- Conducting surveillance and research to support health policy, program, and guideline development.
- Sharing effective communication messages with specific audiences to promote priorities, support program efforts, and convey consistent messages, activities, and successes.

Budget Request

CDC’s FY 2022 request of **\$56,920,000** for Nutrition, Physical Activity, and Obesity is level with FY 2021 Enacted.

Cross-Cutting Cooperative Agreements to Enhance Nutrition and Physical Activity and Prevent Obesity

In FY 2020, CDC directed an estimated \$14 million through the [State Physical Activity and Nutrition Program \(SPAN\)](#)¹⁰¹ to support state, local, tribal and territorial grantees to use proven interventions promoting nutrition and physical activity to prevent obesity and other chronic diseases. CDC also directed an estimated \$11 million through the [High Obesity Program \(HOP\)](#)¹⁰² to fund 15 universities to work with community extension services to increase access to healthier foods and safe places for physical activity in counties where more than 40 percent of adults have obesity.

CDC plans to provide similar levels of nutrition and physical activity strategy support in FY 2022 by supporting recipients’ work to:

- Create [activity-friendly routes to everyday destinations](#)¹⁰³ to safely walk, bike, or wheelchair roll (SPAN & HOP).
- Improve food systems to increase access to healthier foods (SPAN & HOP).
- Implement interventions supportive of breastfeeding (SPAN).
- Implement and integrate nutrition and physical activity standards into statewide early care and education (ECE) systems outlined in the [CDC ECE opportunities framework](#)¹⁰⁴ (SPAN).

With CDC resources and assistance, SPAN and HOP recipients are making significant progress in these approaches. SPAN recipients are working in 372 sites or programs to implement or improve programs that support breastfeeding, potentially impacting 131,734 people. HOP recipients’ work to improve food systems increased access to healthier foods for more than 1.5 million people from 2014 to 2018.

¹⁰¹ <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/span-1807/index.html>.

¹⁰² <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/hop-1809/high-obesity-program-1809.html>.

¹⁰³ <https://www.cdc.gov/physicalactivity/activepeoplehealthnation/strategies-to-increase-physical-activity/activity-friendly-routes-to-everyday-destinations.html>.

¹⁰⁴ https://www.cdc.gov/obesity/strategies/early-care-education/pdf/TheSpectrumofOpportunitiesFramework_May2018_508.pdf.

Nutrition and Obesity Prevention

- Farm to Early Care and Education (ECE): CDC works with partners to fund and support state farm-to-ECE policies and practices. With directed funding in FY 2022, Farm to ECE Implementation Grants (FIG) will provide funding and technical assistance to nutrition professionals at the state level to expand farm to ECE programs.
- Strategies to Increase Access to Healthy Food and Beverages such as Food Service Guidelines ([FSGs](#)): *FSGs are voluntary standards for healthier food and beverage service operations developed by CDC and federal partners for use in food service settings like worksites, hospitals, recreation centers, food banks and pantries. The FSG Action Institute helped develop a tailored action plan to make healthier food service and procurement practices a reality in community-based institutions that serve and sell foods to millions of citizens each day. In FY 2022, CDC will continue to promote FSGs to provide healthier options where food is served and sold.*
- Initiatives to Reduce Vitamin and Mineral Malnutrition: Preventable vitamin and mineral deficiencies can have severe consequences including maternal and infant death and serious disease. Since 2000, CDC's International Micronutrient Malnutrition Prevention and Control (IMMPaCt) program has provided technical assistance, training, and/or funding to approximately 60 countries to monitor vitamin and mineral status as well as deliver and evaluate vitamin and mineral interventions. In FY 2022, CDC will continue to strengthen the monitoring of vitamin and mineral status nationally and work with global partners.

Active Living

- [Active People, Healthy NationSM](#)¹⁰⁵ is a CDC-led national initiative to help 27 million Americans become more physically active by 2027 by promoting strategies to improve physical activity. Further strengthening the evidence around physical activity, the initiative released the adult physical inactivity prevalence maps¹⁰⁶ and published research on the health benefits of physical activity.
- [Safe and Accessible Opportunities for Physical Activity](#):¹⁰⁷ In FY 2022, CDC will continue to support states, communities, and organizations with national reach to design communities that make it safe and easy for people of all ages and abilities to be physically active. CDC's investments in walkable communities through transportation and planning have contributed to the proportion of adults meeting aerobic physical activity guidelines, increasing from about 44 percent in 2008 to 54 percent in 2018.

¹⁰⁵ <https://www.cdc.gov/physicalactivity/activepeoplehealthynation/index.html>.

¹⁰⁶ <https://www.cdc.gov/physicalactivity/data/inactivity-prevalence-maps/index.html>.

¹⁰⁷ <https://www.cdc.gov/physicalactivity/activepeoplehealthynation/strategies-to-increase-physical-activity/access-to-places-for-physical-activity.html>.

Hospitals Promoting Breastfeeding and National Early Child Care Collaborative

CDC funding helps children from birth to five years develop healthy eating and physical activity to support healthy growth and development and decrease their risk later in life for obesity and related outcomes, such as type 2 diabetes, disability, and premature death.

Budget Request

CDC's FY 2022 request of **\$13,500,000** for its Hospitals Promoting Breastfeeding and National Early Child Care Collaborative programs is level with FY 2021 Enacted. At this level, CDC will continue to help hospitals and states promote and support breastfeeding. In addition, CDC will monitor and report biennial breastfeeding practice results for all birth hospitals in the United States and its territories. CDC will also continue to support states, localities, and thousands of ECE providers to implement national obesity prevention standards for nutrition, breastfeeding support, physical activity, and screen time.

Hospitals Promoting Breastfeeding

Infants who are breastfed have reduced risks of asthma, obesity, type 1 diabetes, sudden infant death syndrome, and certain infections. Breastfeeding also helps lower a mother's risk of high blood pressure, type 2 diabetes, and some cancers. Promoting breastfeeding and supporting women who breastfeed is a key CDC strategy for the health of mothers and infants. CDC investments in access to breastfeeding have contributed to increased initiation and duration of breastfeeding and have led to over 1 million babies per year (29%) being born in hospitals with supportive breastfeeding practices. In FY 2022, CDC will continue to support birthing hospitals, worksites, and communities in promoting breastfeeding and addressing related racial disparities. CDC is conducting [a biennial census survey](#)¹⁰⁸ of maternity care hospitals in the United States to assess newborn feeding policies.

National Early Child Care Collaboratives

Children with obesity face an increased risk of high blood pressure, high cholesterol, type 2 diabetes, asthma, joint problems, and fatty liver disease. They also tend to have higher rates of depression, low self-esteem, and bullying. Moving to adulthood, they are at an increased risk of adult obesity, heart disease, stroke, type 2 diabetes, and cancer. CDC funds, trains, and provides technical assistance for obesity prevention efforts in childcare or ECE settings based on the [spectrum of opportunities](#),¹⁰⁹ which outlines how a state's ECE system can embed standards and support for obesity prevention and monitor progress. As of September 2020, CDC provided funding and technical assistance to 28 states to implement these standards. From 2017 to 2020 ECE providers received 61,514 training hours on obesity prevention topics. In FY 2022, CDC will expand efforts to deliver training, tools, and resources to state and local health agencies and ECE providers and will support at least 19 states to do systems-level work.

¹⁰⁸ <https://www.cdc.gov/breastfeeding/data/mpinc/index.htm>.

¹⁰⁹ https://www.cdc.gov/obesity/strategies/early-care-education/pdf/TheSpectrumofOpportunitiesFramework_May2018_508.pdf.

Racial and Ethnic Approaches to Community Health (REACH) Budget Request

Disparities in health continue to affect people with lower income and lower education, rural populations, and racial and ethnic minority populations. The Racial and Ethnic Approaches to Community Health (REACH) budget line consists mainly of two initiatives, the REACH Program and Good Health and Wellness in Indian Country (GHWIC). Since 1999, [REACH](#)¹¹⁰ has been at the forefront of CDC's efforts to reduce health disparities, and has increased opportunities for physical activity, healthier food options, and living smoke-free/tobacco-free for millions of Americans.

Budget Request

CDC's FY 2022 request of **\$63,950,000** for the REACH program is level with FY 2021 Enacted. At this funding level, CDC will support 40 recipients to implement culturally tailored interventions to address preventable risk behaviors, including poor nutrition, physical inactivity, and tobacco use, and to increase referral and access to community health programs for chronic disease prevention and treatment.

Racial and Ethnic Approaches to Community Health (REACH)

REACH-funded organizations use community-driven, evidence-based, and culturally tailored interventions to address a range of health conditions. For example, the California REACH program helped re-establish the Madera Neighborhood Farmers Market, which provided low-income Hispanic/Latino residents access to affordable, healthy food and encouraged participation from communities and farmers through the use of Electronic Benefit Transfer (EBT) and WIC Farmers Market Nutrition Program coupons, improving the variety of produce. During COVID-19, REACH recipients are using trusted communication channels to reduce risks of COVID-19 and the disproportionate impact it has on communities of color. The city of Hartford, Connecticut, was able to leverage the Southern Connecticut State University REACH program to quickly share health information and distribute food to over 1,310 households. In FY 2022, CDC's REACH program will continue to support rural, urban, and tribal communities to improve health among racial and ethnic minority populations.

Good Health and Wellness in Indian Country (GHWIC) - Healthy Tribes Programs

Beginning in 2017, the REACH budget line was expanded to provide additional support for American Indian and Alaska Native communities to address major risk factors for chronic disease, initially through the Good Health and Wellness in Indian Country (GHWIC) program. GHWIC is now part of CDC's Healthy Tribes portfolio. Tribal populations have higher rates of disease, disability, injury, and early death compared to other racial and ethnic groups in the United States. American Indians and Alaska Natives are 50% more likely to have obesity than non-Hispanic Whites and are twice as likely to have diagnosed diabetes as non-Hispanic whites (16.1% vs. 7.1%). These and other health problems are driven by social determinants of health, including higher poverty rates, unemployment, and poor housing – also linked to key risk behaviors, like alcohol and tobacco use.

Budget Request

In FY 2022, CDC requests **\$22,000,000**, level with FY 2021 Enacted, to support its current investment in the health of American Indians and Alaska Natives CDC's [Healthy Tribes](#)¹¹¹ programs.

CDC will fund 56 awards to tribes, Alaska Native villages, tribal organizations, and Tribal Epidemiology Centers; 130 smaller tribes are funded through subawards to address leading causes of death and disability. This funding request supports Healthy Tribes programs Tribal Epidemiology Centers for Public Health Infrastructure (TECPHI)

¹¹⁰ <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/reach/>.

¹¹¹ <https://www.cdc.gov/healthytribes/index.htm>.

and Tribal Practices for Wellness in Indian Country (TPWIC) and continues the expansion of Good Health and Wellness in Indian Country (GHWIC).

[Good Health and Wellness in Indian Country](#)¹¹² focuses on cross-cutting activities, listed below, supported with additional funding from the following budget sub-lines: Diabetes, Heart Disease and Stroke, Tobacco Control, and Nutrition, Physical Activity, and Obesity:

- Improve nutrition, physical activity, and breastfeeding
- Reduce commercial tobacco use and exposure
- Strengthen links between community programs and access to clinical services
- Improve self-management of prediabetes and type 2 diabetes
- Improve screening for and self-management of heart disease

For example, through GHWIC, the Catawba Indian Nation increased physical activity opportunities by identifying the Catawba River as an important community asset, and promoted community use through a youth running program, races along the river, and a kayaking program.

[Tribal Epidemiology Centers Public Health Infrastructure](#)¹¹³ (TECPHI) supports Tribal Epidemiology Centers (TECs) and one Network Coordinating Center to improve delivery of public health functions to and with the tribes and villages in their region and build public health infrastructure in tribal communities. TECPHI has supported:

- Modernizing the American Indian Adult Tobacco Survey by adding newer tobacco products, such as e-cigarettes
- Oversampling in the Behavioral Risk Factor Surveillance System in tribal communities
- Reducing racial misclassification via data links
- Preventing chronic disease in tribal communities by strengthening community health capacity
- Providing tools for tribal communities to collaborate across sectors

Tribal Epidemiology Centers for Public Health Infrastructure			
(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Number of Awards	13	13	13
- New Awards	0	0	0
- Continuing Awards	13	13	13
Average Award	\$635,846	\$630,962	\$630,962
Range of Awards	\$323,884 - \$796,875	\$312,548- 768,984	\$312,548- 768,984
Total Awards	\$8,499,998	\$8,202,500	\$8,202,500

The [Tribal Practices for Wellness in Indian Country](#)¹¹⁴ (TPWIC) is an innovative program that funds tribes and urban Indian organizations to strengthen cultural practices that build resilience and connections to community, family, and culture. These activities can reduce risk factors for chronic diseases and expand evidence for cultural adaption of proven public health strategies. They also inform other programs across CDC and the federal government that work with tribes. The CDC Tribal Advisory Committee guided the approach and refined it over years of discussions with Native cultural advisors.

¹¹² <https://www.cdc.gov/healthytribes/ghwic.htm>.

¹¹³ <https://www.cdc.gov/healthytribes/tecphi.htm>.

¹¹⁴ <https://www.cdc.gov/healthytribes/tribalpractices.htm>.

Tribal Practices for Wellness in Indian Country

(dollars in millions)	FY 2022		
	FY 2020 Final	FY 2021 Enacted	President's Budget
Number of Awards	36	36	30
- New Awards	0	0	30
- Continuing Awards	36	36	0
Average Award	\$141,002	\$139,016	\$150,000
Range of Awards	\$122,018 - \$150,000	\$87,831 - \$144,750	\$100,000 - \$160,000
Total Awards	\$4,982,492	\$5,004,576	\$4,700,500

Health Promotion Budget Request

CDC collects health data and conducts epidemiologic research to define the public health impact of chronic disease risk factors and identify how public health agencies can reduce them. These activities complement existing chronic disease programs and support federal, state, tribal and local public health efforts.

Budget Request

CDC's FY 2022 request of **\$35,600,000** for Health Promotion is level with FY 2021 Enacted. CDC will use FY 2022 funding to strengthen the science base for preventing the leading causes of disease, disability, and death. CDC will also assess disease and risk factor trends and identify their relationship to other population trends, such as the aging of the U.S. population. This work will enable the public health community to anticipate future chronic disease burden. In FY 2022, CDC will focus on the following health promotion activities.

Alzheimer's Disease

Alzheimer's disease can seriously impair a person's ability to carry out activities of daily living, resulting in caregiving needs. In 2020, nearly 6 million Americans were living with Alzheimer's disease, and that number is expected to increase to 14 million by 2050. Over 15 million Americans provide 18 billion hours of unpaid care for family and friends with Alzheimer's disease and other dementias. As the COVID-19 pandemic made clear, public health efforts must focus on critical at-risk populations like those affected by Alzheimer's, who are often older adults with additional multiple chronic conditions.

During 2018 and 2019, CDC and its partners released The Healthy Brain Initiative's (HBI) [State and Local Public Health Partnerships to Address Dementia, The 2018–2023 Road Map](#)¹¹⁵ and [The Road Map for Indian Country](#)¹¹⁶ (Road Map Series), which detail key public health activities to address cognitive impairment and caregiving and increase cognitive health awareness. The *Road Map Series* aligns with the U.S. Department of Health and Human Services' [National Plan to Address Alzheimer's Disease](#) and the [Essential Services of Public Health](#),¹¹⁷ ensuring that initiatives to address Alzheimer's can be incorporated efficiently into existing public health initiatives. In FY 2020, with increased appropriations, CDC expanded work to address Alzheimer's disease, as authorized in the [BOLD Act](#) (P.L. 115-406). CDC funded three Public Health Centers of Excellence and 16 Public Health Programs to create a uniform national public health infrastructure with a focus on increasing early detection and diagnosis, reducing risk, preventing avoidable hospitalizations, and supporting dementia caregiving, including addressing social determinants of health.

The additional investment received in FY 2021 funds five additional Building Our Largest Dementia Infrastructure (BOLD) CORE Programs (four states and one city) and increases funding levels to the 16 BOLD Programs that were funded in FY 2020. CDC will also increase evaluation capacity to increase the evidence base for these programs.

In FY 2022, CDC will continue support national organizations to promote implementation of the *Road Map Series* at the national, state, and local levels, and address health disparities among race and ethnicity groups and people with intellectual and developmental disabilities. In FY 2022, funding also will support states and territories to collect, analyze, and disseminate data from CDC's optional Behavioral Risk Factor Surveillance System (BRFSS) cognitive decline and caregiving modules.

¹¹⁵ <https://www.cdc.gov/aging/healthybrain/roadmap.htm>.

¹¹⁶ <https://www.cdc.gov/aging/healthybrain/Indian-country-roadmap.html>.

¹¹⁷ <https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html>.

CDC annually updates its [Alzheimer's Disease and Healthy Aging Data Portal](#)¹¹⁸ to provide easy access to data on key health and well-being indicators for older adults.

Chronic Kidney Disease

Kidney diseases are the ninth leading cause of death in the United States.¹¹⁹ About 37 million Americans have chronic kidney disease (CKD), and most are unaware of their condition. In 2018, treating Medicare beneficiaries with CKD cost \$81.8 billion, and treating people with end-stage kidney disease cost an additional \$36.6 billion.¹²⁰ In the United States, diabetes and high blood pressure are the leading causes of kidney failure, accounting for three in four new cases.¹²¹ In recognition of the growing problem, [CDC's CKD Initiative](#)¹²² is designed to provide public health strategies for promoting kidney health.

In FY 2022, CDC will continue working with partners to strengthen the CKD Surveillance System; raise public awareness of CKD, its risk factors, and complications; promote early diagnosis and treatment of CKD; and conduct additional research on CKD. People with CKD have an increased risk for severe illness from COVID-19, and COVID-19 infection is associated with a greater occurrence of acute kidney injury, a risk factor for developing or worsening CKD.¹²³

Excessive Alcohol Use Prevention

[Excessive alcohol use](#),¹²⁴ [including binge and underage drinking](#),¹²⁵ contributes to more than 95,000 deaths in the United States each year, shortening the lives of those who die by an average of 29 years. CDC strengthens the science for preventing excessive alcohol use. In FY 2021, CDC supported alcohol epidemiology in six state health departments; improved data collection on excessive drinking and related harms; and helped states and communities implement evidence-based strategies to reduce excessive alcohol use. Funding for state alcohol epidemiology capacity led to findings that one in five people who died by drug overdose in New Mexico were intoxicated at time of death and that binge drinking is a risk factor for marijuana use in Colorado. CDC will expand these activities in FY 2022 by supporting alcohol epidemiology capacity in more states and one organization to deliver national technical assistance and training on the prevention of excessive alcohol use.

Inflammatory Bowel Disease (IBD)

CDC supports an epidemiologic research study on IBD, a disease that CDC estimates to affect over 3 million U.S. adults and is associated with poor quality of life, substantial illness, and complications requiring hospitalizations and surgical procedures. In FY 2022 CDC will support an epidemiologic study estimating adult and pediatric incidence, describing the natural history and outcomes of IBD, determining racial/ethnic variation in the detection and management of IBD, and identifying evidence-based strategies to improve disease outcomes.

¹¹⁸ <https://www.cdc.gov/aging/agingdata/index.html>.

¹¹⁹ Heron M. Deaths: Leading causes for 2017. National Vital Statistics Reports; vol 68 no 6. Hyattsville, MD: National Center for Health Statistics. 2019. Available online at https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_06-508.pdf.

¹²⁰ United States Renal Data System. 2020 *USRDS Annual Data Report: Epidemiology of kidney disease in the United States*. National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, MD, 2020. <https://adr.usrds.org/2020>.

¹²¹ Centers for Disease Control and Prevention. Chronic Kidney Disease: Common-Serious-Costly. <https://www.cdc.gov/kidneydisease/prevention-risk/CKD-common-serious-costly.html>. Accessed January 13, 2021.

¹²² <https://www.cdc.gov/kidneydisease/index.html>.

¹²³ Centers for Disease Control and Prevention. Scientific Evidence for Conditions that Increase Risk of Severe Illness. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/evidence-table.html>. Accessed January 14, 2021.

¹²⁴ <http://www.cdc.gov/alcohol/>.

¹²⁵ <http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm>.

Interstitial Cystitis

CDC supports an epidemiologic study on [Interstitial Cystitis \(IC\)](#),¹²⁶ a chronic condition that results in recurring discomfort or pain in the bladder or surrounding pelvic region. In FY 2022, CDC will fund an epidemiologic cohort study to fill knowledge and research gaps by examining the incidence of IC comorbidities; the demographic, treatment, and clinical patterns of IC; health disparities, and IC's impact on health over time. Results from this study will support public health action, including provider awareness and education, patient strategies for improving quality of life, and medical and self-management of IC.

Vision Health and Glaucoma

Vision disability is one of the top 10 disabilities among adults 18 and older and one of the most common disabling conditions among children.¹²⁷ [CDC's Vision Health Initiative \(VHI\)](#)¹²⁸ invests in activities to improve vision and eye health, including collaborating with state and national partners to assess and develop their capacity to integrate vision and eye health into the national, state, and community public health infrastructure. CDC's VHI, developed the [Vision and Eye Health Surveillance System](#)¹²⁹ to assess population estimates, trends, and health disparities related to vision and eye health.

In FY 2022, CDC's VHI will continue to develop states' capacity to integrate vision and eye health into their public health infrastructure. VHI is working with seven states to identify needs and develop state plans to improve vision and eye health. CDC will also continue to support research demonstration projects examining methods to improve glaucoma detection, referral, and treatment for high-risk populations. In FY 2022, CDC's VHI will also continue a five-year project to reach nearby populations at high risk for glaucoma. Using innovative strategies and service delivery models, this project will improve glaucoma detection and management by reaching high-risk populations that lack access to specialized ophthalmic care because of their income or where they live.

Chronic Disease Education and Awareness

Advancing CDC's work with stakeholders on education and outreach for chronic diseases demonstrating a clear disparity in public and professional awareness is critical to advancing public health prevention and treatment efforts. CDC's FY 2022 request of **\$1,500,000** for Chronic Disease Education and Awareness is level with the FY 2021 Enacted Level. In FY22, CDC will continue the competitive grant program to fund national partners to develop and implement public health education and awareness activities for chronic disease conditions and risk factors that do not currently receive dedicated CDC appropriated resources.

¹²⁶ <http://www.cdc.gov/ic/>.

¹²⁷ Centers for Disease Control and Prevention. Vision Health Initiative. <https://www.cdc.gov/visionhealth/basics/ced/fastfacts.htm>. Accessed January 13, 2021.

¹²⁸ <https://www.cdc.gov/visionhealth/index.htm>.

¹²⁹ <https://www.cdc.gov/visionhealth/vehss/index.html>.

School Health Budget Request

CDC's [Healthy Schools Program](#)¹³⁰ plays a unique role in bringing together the education and public health sectors to support physical education, physical activity and healthy nutrition, management of chronic conditions, social-emotional learning and practices that improve the school environment and health services. CDC tools and programs help 132,000 schools in the United States educate and model healthy behaviors for 78 million students.

Budget Request

CDC's FY 2022 request of **\$15,400,000** for Healthy Schools is level with FY 2021 Enacted. With this funding, Healthy Schools (School Health) will continue to support States, schools and school districts, and non-governmental organizations, to improve health outcomes for K–12 students and improve the management of students' chronic conditions. These funds support 16 State Education Agencies with 120 priority school districts. In addition to these funded school districts, CDC tools and training reach approximately 40,000 school staff annually. The [Whole School Whole Community Whole Child \(WSCC\) model](#)¹³¹ [is used in all 50 states to improve student health.](#)

¹³⁰ <https://www.cdc.gov/healthyschools/index.htm>.

¹³¹ <https://www.cdc.gov/healthyschools/wsc/index.htm>.

Prevention Research Centers Budget Request

CDC provides leadership, technical assistance, and oversight to a network of 26 academic [Prevention Research Centers](#)¹³² (PRCs) to conduct innovative public health research at the community level.¹³³ PRCs develop, test, and evaluate public health interventions that can be applied widely, particularly in underserved communities, to address chronic diseases and other leading causes of death and disability in the US. PRC research made a major impact on knowledge, research, and practice nationally. Between 2014 and 2019, PRCs conducted extensive training and outreach:

- Trained over 77,000 persons, producing qualified public health specialists and prevention researchers;
- Published over 2,000+ journal articles, including 47 that PRCs co-authored, and 75+ book or book chapters adding to the evidence-base of public health prevention approaches; and
- Developed 400+ research and practice tools that help public health practitioners adopt and implement evidence-based practices.

Special Interest Projects (SIPs)

SIPs allow additional CDC programs and other federal agencies to leverage PRC expertise and established relationships with community partners. In the 2014-2019 funding cycle, CDC awarded 84 SIPs. During 2019-2020, CDC awarded 29 SIPs. Thematic Research Networks are a type of SIP that funds several PRCs to work together on a specific health issue. There are currently four thematic research networks that focus on: cancer; epilepsy; nutrition and obesity; and physical activity.

Budget Request

CDC's FY 2022 request of **\$27,461,000** for Prevention Research Centers is level with FY 2021 Enacted. In FY 2022, CDC will continue to support 26 PRCs with awards of roughly \$750,000 to quickly leverage research findings to build a collection of proven health interventions addressing a diverse range of public health issues, including chronic diseases. PCR awardees will conduct core research projects in intervention research, to strengthen the evidence base for public health interventions; implementation research, to test the process for translation of proven interventions into public health practice; and public health practice-based evidence research, to examine the effectiveness of strategies and interventions. CDC will also support PRCs in disseminating research findings and expanding translation activities.

¹³² <http://www.cdc.gov/prc/>.

¹³³ Authorized under Public Health Service Act, Section 170.

Arthritis, Lupus, and Epilepsy Budget Request

Arthritis is a leading cause of disability in the US, with more than [54 million adults reporting an arthritis diagnosis](#)¹³⁴ and nearly 24 million reporting being less active because of their arthritis. **Lupus** is a rheumatic autoimmune disease that can cause inflammation and tissue damage to virtually any organ system in the body and result in serious disability, pain, and premature death. Epilepsy, a chronic neurological condition, affects about 3.4 million people in the U.S., including 3 million adults and 470,000 children from birth to 17 years of age. People with epilepsy use health care more often and have higher health care costs than those without the disorder.



Budget Request

CDC's FY 2022 request of **\$31,000,000** for Arthritis, Lupus, and Epilepsy is level with FY 2021 Enacted.

Arthritis

CDC's arthritis program works with state health departments and national organizations to promote dissemination and delivery of evidence-based self-management and physical activity programs to decrease pain and disability and improve functioning among persons with arthritis. In FY 2022, CDC will continue to work with 13 state health departments and 6 national organizations through 21 awards to promote cost-effective, drug-free strategies for arthritis pain management and expand access to COVID-friendly and other, proven interventions such as the [Walk With Ease Self-directed Program](#)¹³⁵, [Toolkit for Active Living with Chronic Disease](#)¹³⁶ and [Better Choices, Better Health, online Chronic Disease Self-management Program](#).¹³⁷ Funded partners will continue to collect data to inform priority setting and decision making, and have access to evidence-based health communications campaigns promoting physical activity for arthritis management. CDC will also continue to work to enhance and increase access to consumer-focused arthritis information and increase collective action to address arthritis through funded partners, the Osteoarthritis Action Alliance and the Arthritis Council. Through the efforts of funded states and national organizations, evidence-based arthritis interventions are now available in all 50 states; and to shape future public health action, CDC and partners released [A National Public Health Agenda For Osteoarthritis, 2020 Update](#).¹³⁸

Lupus Program

CDC-funded population registries and cohort studies increase public health knowledge about lupus. The [National Public Health Agenda for Lupus](#)¹³⁹ guides the CDC lupus program. In FY22, CDC will finish the current award for the five registry studies in California, Georgia, Michigan, Minnesota, and Utah (focused on the pediatric lupus population). These studies are improving our understanding of lupus diagnoses, burden of disease, natural history, and where intervention efforts are best targeted. CDC will also continue to raise awareness, knowledge, and skills among health care providers about lupus signs and symptoms, detection and diagnosis, and care coordination. A secondary goal is to increase recognition of lupus signs and symptoms among the public and increase the use of effective lupus self-management tools and services among people diagnosed with lupus.

¹³⁴http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6244a1.htm?s_cid=mm6244a1_w.

¹³⁵<https://www.cdc.gov/arthritis/interventions/physical-activity.html#WWEself>.

¹³⁶https://www.cdc.gov/arthritis/interventions/self_manage.htm#toolkitCDSMP.

¹³⁷https://www.cdc.gov/arthritis/interventions/self_manage.htm#Better.

¹³⁸<https://oaction.unc.edu/policy/oa-agenda-2020-update/>.

¹³⁹https://b.3cdn.net/lupus/8085bc0a72575355b2_lfm6zqgst.pdf.

Epilepsy

Increasing Physical Activity for Older Adults

The University of Washington PRC and its partners developed and tested an intervention to increase the outreach capacity of YMCAs to physical therapy clinics about referring older patients to *Enhance[®]Fitness*, engaging with 20 YMCAs across the country.

Enhance[®]Fitness is a low-cost group exercise program that helps improve physical and mental functioning in older adults. It is one of five physical activity programs recommended by CDC's Arthritis Program to improve the quality of life for people with arthritis.

Enhance[®]Fitness has been offered at over 1,250 sites in 43 states and has reached more than 74,000 people.

Leading public health action on epilepsy, CDC's Epilepsy Program supports prevention research (e.g., risk factor screening tools and self-management research) and surveillance and epidemiologic studies of epilepsy burden. CDC also works with the National Epilepsy Foundation and other partners to increase awareness, reduce stigma, and enhance care and safety for people with epilepsy. In FY 2022, CDC will build on previous cooperative agreement findings and accomplishments to fund up to four awardees to improve epilepsy education, systems of care and health outcomes. To improve the health and quality of life of people with epilepsy CDC will support activities to: improve the social environment for people with epilepsy; strengthen the health system to improve epilepsy care; foster connections between clinical services and community programs; and address social determinants of health (e.g. social isolation, food insecurity, and community-clinical linkages) to improve quality of life for people with epilepsy.

In FY 2022, CDC will also continue to support the [Managing Epilepsy Well \(MEW\) Network](#),¹⁴⁰ through the CDC-funded Prevention Research Centers (PRCs). The MEW Network advances epilepsy self-management by facilitating and implementing research, conducting research in collaboration with network and community stakeholders, and broadly disseminating research findings. In addition, in FY 2022, CDC's Epilepsy program will continue support for activities aligned with the Institute of Medicine recommendations on epilepsy and based on the latest research gaps, including:

- Epidemiology and surveillance to measure epilepsy burden, gaps in care, and epilepsy stigma;
- Environmental approaches to assure workforce competence and appropriate education for people with epilepsy, caregivers, and the public;
- Health care system interventions to identify and screen populations at high risk, identify opportunities for quality improvement in clinics and expand the provider base; and
- Community programs linked to clinical services to improve the delivery, coordination and quality of epilepsy care and self-management programs.

¹⁴⁰<http://web1.sph.emory.edu/ManagingEpilepsyWell/>.

Tobacco Prevention and Control Budget Request

Tobacco use is the leading cause of preventable disease, disability, and death in the United States.¹⁴¹ In 2019, an estimated 50.6 U.S. adults (one in five adults) reported currently using any tobacco products, including about 34 million who currently smoked cigarettes.¹⁴² Moreover, longstanding commercial tobacco related disparities continue to persist among disproportionately impacted population groups defined by sex, age, race/ethnicity, educational attainment, income, U.S. region, sexual orientation, health insurance status, disability status, and mental health status.¹⁴³ Each year, nearly half a million American adults die prematurely due to smoking-related disease, including exposure to secondhand smoke.¹⁴⁴ Additionally, more than 16 million additional American adults live with a serious illness caused by smoking.¹⁴⁵

Smoking also compromises the immune system, which can increase the risk for pulmonary infections; for example, adults who are current or former cigarette smokers are at an increased risk of severe illness from COVID-19.¹⁴⁶ Despite progress in reducing cigarette smoking over time among adults and youth, the tobacco product landscape has also diversified to include a variety of smoked, smokeless, and electronic products, including e-cigarettes and other emerging products. In 2020, an estimated 4.47 million U.S. youth reported currently using any tobacco product, including about one in four high school students and one in fifteen middle school students; 3.6 million of these youth reported currently using e-cigarettes, which has been the most commonly used tobacco product among U.S. youth since 2014.¹⁴⁷ In FY 2021, CDC has focused increased resources on preventing youth tobacco use and eliminating health disparities, guided by a health equity strategic plan.

Budget Request

CDC's FY 2022 request of **\$237,500,000** for Tobacco Prevention and Control, including **\$128,100,000** from the Prevention and Public Health Fund, is level with FY 2021 Enacted. At this funding level, CDC will award contracts and cooperative agreements that support ongoing surveillance, laboratory, evaluation, and technical assistance efforts related to tobacco use and its effects on health.

In FY 2022, CDC will sustain tobacco prevention, control, and surveillance efforts, including addressing increases in tobacco use among youth and young adults. CDC will support tobacco cessation and quitline services, including support for the national network of tobacco cessation quitlines, a national media campaign to inform the public about smoking risks and encourage smokers to quit smoking, and support for national networks focused on disproportionately impacted populations experiencing tobacco- and cancer-related health disparities. CDC will also maintain tobacco use and related behavior surveillance, including through the National Youth Tobacco Survey.

¹⁴¹ U.S. Department of Health and Human Services. *The Health Consequences of Smoking - 50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention. 2014.

¹⁴² Cornelius ME, Wang TW, Jamal A, Loretta C, Neff L. Tobacco Product Use Among Adults - United States, 2019. *Morbidity and Mortality Weekly Report (MMWR)*. November 2020.

¹⁴³ Creamer MR, Wang TW, Babb S, et al. Tobacco Product Use and Cessation Indicators Among Adults – United States, 2018. *Morbidity and Mortality Weekly Report* 2019, 68(45):1013-1019.

¹⁴⁴ U.S. Department of Health and Human Services. *The Health Consequences of Smoking - 50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention. 2014.

¹⁴⁵ U.S. Department of Health and Human Services. *The Health Consequences of Smoking - 50 Years of Progress: A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention. 2014.

¹⁴⁶ CDC. COVID-19. People with Certain Medical Conditions. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html>.

¹⁴⁷ Wang TW, Neff LJ, Park-Lee E, Ren C, Cullen KA, King BA. E-cigarette Use Among Middle and High School Students — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1310–1312. DOI: <http://dx.doi.org/10.15585/mmwr.mm6937e1>.

National Tobacco Control Program

CDC provides funding and technical support to 50 states, Washington, D.C., eight U.S. territories, eight national networks, and 12 tribal organizations through OSH's [National Tobacco Control Program](#)¹⁴⁸ to implement comprehensive tobacco control efforts that reduce tobacco-related diseases, disabilities, and deaths. The program has achieved many successes, including an example where the state of New York funded 22 *Advancing Tobacco Free Communities* grantees to educate the public, stakeholders, and decision makers about the influence of tobacco product marketing and density on youth initiation, pricing strategies, and other retail environment strategies, including the benefits of tobacco-free pharmacies. During 2020, new policies in New York City and other parts of the state substantially reduced opportunities to purchase tobacco products, including e-cigarettes, by limiting pharmacy sales, couponing, and online sales; new advertising restrictions limit the visibility of tobacco products, including e-cigarettes, in close proximity to schools.

As part of the National Tobacco Control Program, CDC is working with recipients through a five-year funding agreement beginning July 2020 to support strategies to specifically address youth e-cigarette use and tobacco-related disparities. These activities include supporting and implementing policies to reduce initiation, and collaborating with organizations, health care systems, and networks that encourage and support programs to reinforce tobacco-free norms among youth and young adults. Recipients will also focus on implementing commercial tobacco control programs through a health equity lens, identifying and reducing statewide and community-based disparities, and implementing tobacco control policies and evaluating their impact on reducing disparities.

National Tobacco Education Campaign

In March 2012, CDC launched the first-ever paid, national tobacco education campaign, *Tips From Former Smokers*® (*Tips*®). The *Tips*® campaign profiles real people who live with serious long-term health effects due to smoking and secondhand smoke exposure. Between 2012 and 2018, approximately 1 million adults who smoked cigarettes quit with the help of CDC's *Tips*® campaign.¹⁴⁹ Over the same time period, the campaign was associated with an estimated 129,000 early deaths avoided and \$7.3 billion in health care sector cost savings. The *Tips*® campaign was also associated with health care cost savings of \$11,400 per lifetime quit, and \$5,300 per quality-adjusted life year gained.¹⁵⁰

CDC also continues to leverage *Tips*® in efforts to promote tobacco cessation during the COVID-19 pandemic. On social media, CDC is promoting messaging about the risks of COVID-19 and cigarette smoking, including that cigarette smoking increases the risk of more severe illness from COVID-19. In 2020, the *Tips*® campaign also placed additional media on a variety of focused channels, including TV, print, and digital to reach African American, Hispanic, Asian, American Indian/Alaska Native, and LGBTQ audiences. CDC also ran promotions for free nicotine replacement therapy (NRT) on TV ads periodically throughout the campaign. *Tips*® also helps drive callers to the national quitline portal, 1-800-QUIT-NOW.

Youth Tobacco Product Use

CDC conducts and coordinates surveillance, laboratory, and evaluation activities related to tobacco product use, including e-cigarette use, among youth. These activities include monitoring trends in the use of tobacco products and publishing studies to answer important questions about tobacco product use, prevention, and

¹⁴⁸ https://www.cdc.gov/tobacco/stateandcommunity/tobacco_control_programs/index.htm.

¹⁴⁹ Murphy-Hoefer R, Davis KC, King BA, Beistle D, Rodes R, Graffunder C. Association between the Tips From Former Smokers Campaign and Smoking Cessation Among Adults, United States, 2012–2018. *Preventing Chronic Disease* 2020;17:200052.

¹⁵⁰ Shrestha SS, Davis K, Mann N, Taylor N, Nonnemaker J, Murphy-Hoefer R, Trivers KF, King BA, Babb S, Armour BS. Cost Effectiveness of the Tips From Former Smokers Campaign—United States, 2012–2018. *American Journal of Preventive Medicine*; 2021. [https://www.ajpmonline.org/article/S0749-3797\(20\)30468-2/fulltext](https://www.ajpmonline.org/article/S0749-3797(20)30468-2/fulltext).

control. For example, CDC implements the National Youth Tobacco Survey (NYTS), in collaboration with FDA, to provide national data on youth tobacco product use, which is key to the design, implementation, and evaluation of programs. In 2019, NYTS was modernized by switching from paper-and-pencil to electronic data collection; this enhancement allowed for the inclusion of more questions and the inclusion of product imagery in the survey, which helps to enhance the validity of data.

State Table of Grant Funding¹

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$8,739,276	\$8,739,276	TBD	TBD
Alaska	\$6,333,543	\$6,333,543	TBD	TBD
Arizona	\$7,817,463	\$7,817,463	TBD	TBD
Arkansas	\$5,891,313	\$5,891,313	TBD	TBD
California	\$15,641,713	\$15,641,713	TBD	TBD
Colorado	\$7,691,925	\$7,691,925	TBD	TBD
Connecticut	\$2,894,715	\$2,894,715	TBD	TBD
Delaware	\$4,915,787	\$4,915,787	TBD	TBD
District of Columbia	\$4,833,316	\$4,833,316	TBD	TBD
Florida	\$13,933,351	\$13,933,351	TBD	TBD
Georgia	\$9,926,459	\$9,926,459	TBD	TBD
Hawaii	\$4,040,491	\$4,040,491	TBD	TBD
Idaho	\$5,206,247	\$5,206,247	TBD	TBD
Illinois	\$13,131,495	\$13,131,495	TBD	TBD
Indiana	\$6,650,590	\$6,650,590	TBD	TBD
Iowa	\$5,495,689	\$5,495,689	TBD	TBD
Kansas	\$8,035,853	\$8,035,853	TBD	TBD
Kentucky	\$6,568,728	\$6,568,728	TBD	TBD
Louisiana	\$3,957,818	\$3,957,818	TBD	TBD
Maine	\$4,554,950	\$4,554,950	TBD	TBD
Maryland	\$6,330,980	\$6,330,980	TBD	TBD
Massachusetts	\$6,447,453	\$6,447,453	TBD	TBD
Michigan	\$10,813,915	\$10,813,915	TBD	TBD
Minnesota	\$8,987,862	\$8,987,862	TBD	TBD
Mississippi	\$7,160,827	\$7,160,827	TBD	TBD
Missouri	\$6,370,551	\$6,370,551	TBD	TBD
Montana	\$6,043,960	\$6,043,960	TBD	TBD
Nebraska	\$5,877,118	\$5,877,118	TBD	TBD
Nevada	\$7,430,530	\$7,430,530	TBD	TBD
New Hampshire	\$4,692,892	\$4,692,892	TBD	TBD
New Jersey	\$7,425,687	\$7,425,687	TBD	TBD
New Mexico	\$6,125,713	\$6,125,713	TBD	TBD
New York	\$15,819,532	\$15,819,532	TBD	TBD
North Carolina	\$4,262,254	\$4,262,254	TBD	TBD
North Dakota	\$5,942,862	\$5,942,862	TBD	TBD
Ohio	\$9,211,914	\$9,211,914	TBD	TBD
Oklahoma	\$5,072,156	\$5,072,156	TBD	TBD
Oregon	\$7,253,517	\$7,253,517	TBD	TBD
Pennsylvania	\$9,245,868	\$9,245,868	TBD	TBD
Rhode Island	\$5,860,297	\$5,860,297	TBD	TBD
South Carolina	\$9,729,146	\$9,729,146	TBD	TBD
South Dakota	\$4,850,263	\$4,850,263	TBD	TBD
Tennessee	\$7,115,601	\$7,115,601	TBD	TBD
Texas	\$6,045,565	\$6,045,565	TBD	TBD
Utah	\$6,078,218	\$6,078,218	TBD	TBD
Vermont	\$4,709,503	\$4,709,503	TBD	TBD
Virginia	\$7,725,723	\$7,725,723	TBD	TBD
Washington	\$10,908,418	\$10,908,418	TBD	TBD
West Virginia	\$5,645,162	\$5,645,162	TBD	TBD
Wisconsin	\$7,105,780	\$7,105,780	TBD	TBD
Wyoming	\$3,693,702	\$3,693,702	TBD	TBD

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Other Awardees				
Indian Tribes	\$52,569,369	\$52,569,369	TBD	TBD
Migrant Program	N/A	N/A	TBD	TBD
American Samoa	\$796,002	\$796,002	TBD	TBD
Guam	\$1,276,773	\$1,276,773	TBD	TBD
Marshall Islands	\$504,760	\$504,760	TBD	TBD
Micronesia	\$450,725	\$450,725	TBD	TBD
Northern Mariana Islands	\$570,767	\$570,767	TBD	TBD
Palau	\$989,937	\$989,937	TBD	TBD
Puerto Rico	\$503,170	\$503,170	TBD	TBD
Virgin Islands	\$313,664	\$313,664	TBD	TBD
Subtotal, States	\$361,410,375	\$361,410,375	TBD	TBD
Subtotal, Other Awardees	\$57,975,167	\$57,975,167	TBD	TBD
Total Resources	\$419,385,542	\$419,385,542	TBD	TBD

¹This State table is a summary of NCCDPHP programs that fund states and Washington, D.C., tribal, and territorial awardees. For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>. Relevant CFDA numbers are 93.334 (DP-2004 BOLD Public Health Programs to Address Alzheimer's; DP20-2003 The National Healthy Brain Initiative), 93.336 (DP20-2007 Behavioral Risk Factor Surveillance System), 93.898 (DP17-1701 Cancer Prevention and Control Programs), 93.387 (DP20-2001 National and State Tobacco Control Program), 93.426 (DP18-1815.NU58 Diabetes and Heart Disease & Stroke Prevention Programs), 93.431 (DP18-1808.NU58 Consortium of National Networks to Impact Populations), 93.436 (DP18-1816.NU58 Well-Integrated Screening and Evaluation for Women Across the Nation), 93.479 (DP19-1903.NU58 Good Health and Wellness in Indian Country), 93.738 (DP18-1813.NU58 Racial and Ethnic Approaches to Community Health), 93.800 (DP20-2002 Public Health and Health Systems Partnerships to Increase CRC Screening), 93.762 (DP17-1704 PPHF17.NU58 Building Public Health Infrastructure in Tribal Communities), and 93.762 (DP18-1812 PPHF18.NU58 Tribal Practices for Wellness in Indian Country). The "to be determined" status of FY 2022 President's Budget totals depends on funding amounts associated with FY 2022 initiatives including Social Determinants of Health.

BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Total Request	\$160.810	\$167.810	\$172.810	+\$5.000
FTEs	207	211	211	0
-- Child Health and Development	\$65.800	\$65.800	\$65.800	\$0
-- Birth Defects	\$19.000	\$19.000	\$19.000	\$0
-- Fetal Death	\$0.900	\$0.900	\$0.900	\$0
-- Fetal Alcohol Syndrome	\$11.000	\$11.000	\$11.000	\$0
-- Folic Acid	\$3.150	\$3.150	\$3.150	\$0
-- Infant Health	\$8.650	\$8.650	\$8.650	\$0
-- Autism	\$23.100	\$23.100	\$23.100	\$0
-- Health and Development for People with Disabilities	\$67.660	\$72.660	\$72.660	\$0
-- Disability and Health	\$33.000	\$33.000	\$36.000	\$0
-- Tourette Syndrome	\$2.000	\$2.000	\$2.000	\$0
-- Early Hearing Detection and Intervention	\$10.760	\$10.760	\$10.760	\$0
-- Muscular Dystrophy	\$6.000	\$6.000	\$6.000	\$0
-- Attention Deficit Hyperactivity Disorder	\$1.900	\$1.900	\$1.900	\$0
-- Fragile X	\$2.000	\$2.000	\$2.000	\$0
-- Spina Bifida	\$6.000	\$7.000	\$7.000	\$0
-- Congenital Heart Failure	\$6.000	\$7.000	\$7.000	\$0
-- Public Health Approach to Blood Disorders	\$4.400	\$6.400	\$6.400	\$0
-- <i>Sickle Cell Research (non-add)</i>	<i>N/A</i>	<i>\$2.000</i>	<i>\$2.000</i>	<i>\$0</i>
-- Hemophilia CDC Activities	\$3.500	\$3.500	\$3.500	\$0
-- Hemophilia Treatment Centers	\$5.100	\$5.100	\$5.100	\$0
-- Thalassemia	\$2.100	\$2.100	\$2.100	\$0
-- Neonatal Abstinence Syndrome	\$2.250	\$2.250	\$2.250	\$0
-- Surveillance for Emerging Threats to Mothers and Babies	\$10.000	\$10.000	\$15.000	+\$5.000

Enabling Legislation Citation: PHS A § 301, PHS A § 304, PHS A § 307, PHS A § 308(d), PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317C(a)*, PHS A § 317J*, PHS A § 317K, PHS A § 317L*, PHS A § 317Q, PHS A § 327, PHS A § 352, PHS A § 399M*, PHS A § 399Q, PHS A § 399S, PHS A § 399S-1*, PHS A § 399T, PHS A § 399V-2, PHS A § 399AA*, PHS A § 399BB*, PHS A § 399CC*, PHS A § 1102, PHS A § 1105, PHS A § 1107, PHS A § 1108*, PHS A § 1110, PHS A § 1112, PHS A § 1113, PHS A § 1114, PHS A § 1132*, PHS A § 1706*, The Prematurity Research Expansion And Education For Mothers Who Deliver Infants Early Act § 3 (42 U.S.C. 247b-4f)

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2022: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural, Competitive Grants, Cooperative Agreements and Contracts

CDC's birth defects, developmental disabilities, and blood disorders programs advance CDC's mission of preventing the leading causes of disease, disability, and death, while promoting optimal health for all people.

CDC enriches the quality of life for America's youth and populations affected by birth defects, developmental disabilities, and blood disorders while reducing health care costs by:

- Identifying and addressing the causes of birth defects and related conditions.
- Helping children reach their potential by understanding developmental disabilities.
- Reducing complications of blood disorders.
- Improving the health of people living with disabilities.

BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

BY THE NUMBERS

- **One in 33 babies** are born with a major birth defect.^{1,2}
- **One in 6 children** have developmental disabilities.³
- **One in 76 Americans** have a blood disorder.⁴
- **61 million Americans** live with a disability—approximately equivalent to the combined populations of New York and California.⁵

CDC’s birth defects, developmental disabilities, and blood disorders programs work to address these issues and help secure domestic preparedness, eliminate disease, and end epidemics by supporting states, territories and communities:

- **28 jurisdictions**—funded to address COVID-19, congenital Zika, syphilis, and hepatitis C as part of the Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET).
- **4 jurisdictions**—supported to implement a new standardized surveillance case definition for monitoring the number of infants diagnosed with neonatal abstinence syndrome (NAS) at birth to help ensure quality data are collected and 4 epidemiology fellows are funded to work within state health departments to support NAS and birth defects monitoring activities.
- **9 states**—developing critical systems for collecting health data about people living with sickle cell disease through the Capacity Building for Sickle Cell Disease Surveillance project.
- **7 sites**—carrying out population-based Surveillance of Congenital Heart Defects (CHDs) Among Children, Adolescents, and Adults to identify people living with congenital heart defects, assess their health needs, and improve quality of care for CHDs.

In response to the Coronavirus 2019 Pandemic, CDC has:

- **Deployed 251 staff and specialists** to the response to specifically address the effects of COVID-19 on pregnant women and their infants, people with disabilities, and support state and local health department infrastructure.
- Supported projects addressing needs of pregnant women and babies, children, people with disabilities and people with blood disorders including:
 - Supporting states, territories, counties, and cities to build their ability to respond to emergencies in ways that are inclusive for people with disabilities.
 - Growing the Act Early Ambassadors program to address the mental health needs of children during the pandemic, integrate developmental monitoring information into COVID-19 response, and support timely referral to intervention services that have been impacted by COVID-19.
 - Expanding “Surveillance for Emerging Threats to Mothers and Babies” Network (SET-NET) through increased funding to 10 jurisdictions and new funding to 15 additional jurisdictions. This funding supports the collection of information that will help the nation better understand the impact of COVID-19 on pregnant women and their infants, which will inform their COVID-19 prevention and care efforts.
 - Producing low literacy health communication materials to ensure vital COVID-19 prevention messages are understandable for people with a developmental or intellectual disability.
 - Understanding risk factors, burden, and health disparities of COVID-19 related blood and bleeding complications, including sickle cell disease.

BIRTH DEFECTS, DEVELOPMENTAL DISABILITIES, DISABILITIES AND HEALTH

BY THE NUMBERS

***References:**

^{1,2} Rynn L , Cragan J , , Correa, et al. “Update on Overall Prevalence of Major Birth Defects—Atlanta, Georgia, 1978–2005.” <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5701a2.htm>.

³ Boyle CA, Boulet S, Schieve LA, et al. “Trends in the Prevalence of Developmental Disabilities in US Children, 1997–2008”. <http://pediatrics.aappublications.org/content/early/2011/05/19/peds.2010-298>.

⁴ CDC, National Center on Birth Defects and Developmental Disabilities (NCBDDD) (2017, September 19). Protecting People. Available at <https://www.cdc.gov/ncbddd/aboutus/protecting-people/index.html>

⁵ Okoro CA, Hollis ND, Cyrus AC, Griffin-Blake S. Prevalence of Disabilities and Health Care Access by Disability Status and Type Among Adults — United States, 2016. MMWR Morb Mortal Wkly Rep 2018;67:882–887. preDOI: <http://dx.doi.org/10.15585/mmwr.mm6732a3>.

*Unless otherwise noted, all information and calculations are from CDC program data.

Birth Defects and Developmental Disabilities Funding History	
Fiscal Year	Dollars (in millions)
2018	\$140.086
2019	\$155.029
2020	\$160.810
2021 Enacted	\$167.810
2022 President’s Budget	\$172.810

Budget Request

CDC's FY 2022 request of **\$172,810,000** for Birth Defects, Developmental Disabilities, Disabilities and Health is **\$5,000,000** above FY 2021 Enacted. The FY 2022 request provides an increased investment in Surveillance for Emerging Threats to Mothers and Babies; continues activities from FY 2021 related to Neonatal Abstinence Syndrome; and focuses its birth defects and developmental disabilities portfolio on core public health activities that align with CDC's mission and proven interventions to make a positive impact on Americans' health.

CDC continues its response and contribution towards the development of public health infrastructure to address birth defects and developmental disabilities by:

- Working to sustain and recruit epidemiology and laboratory expertise to understand the impact of public health emergencies like COVID-19 on infants, people with disabilities, and people with blood disorders.
- Modernizing and expanding surveillance to:
 - improve the surveillance network that collects data on emerging infectious diseases like COVID-19 from pregnancy through infancy to inform clinical and public health guidance through Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET),
 - understand the impact of opioid use disorder treatment during pregnancy, with a focus on learning more about outcomes in affected children,
 - gain a comprehensive understanding of developmental disabilities and offering information and innovative solutions that guide decision-making, so children and their families get the support they need; and
 - address health disparities in sickle cell disease to help ensure people with SCD receive appropriate care now and in the future through telemedicine and increased services at blood disorder treatment centers.

Birth Defects

Birth defects are common, costly, and critical. Every 4½ minutes, a baby is born with a major birth defect in the United States. That is approximately 1 in every 33 babies—or 120,000 babies every year.¹⁵¹ In the United States, more than \$23 billion per year is spent on hospital costs for the treatment of birth defects.¹⁵² Babies born with a birth defect are much more likely to die before their first birthday, while those who survive are likely to have lifelong challenges, such as problems with physical movement, learning, and social interaction.

CDC is changing the outcomes for babies and families by uniting scientists and researchers to prevent birth defects. CDC leads the charge to identify causes of birth defects and infant disorders, finding opportunities to prevent them, and improve the health of those living with these conditions. CDC's state and local collaborations alert CDC to trends, identify populations affected, provide clues to successful prevention approaches. CDC's prevention programs translate this research into actions that women, families, health care providers, and decision makers can use to help ensure babies are born healthy and thrive.

CDC's investment in addressing birth defects and infant disorders has produced these important results:

- **Adapted CDC's surveillance approach of linking pregnancy data to infant outcomes data:** CDC provided critical answers about the effects of Zika on pregnant women and their infants. Developed during the response to Zika, pregnancy and infant surveillance works to detect the impact of known and emerging health threats during pregnancy like hepatitis C, syphilis, and COVID-19, and inform public health and clinical guidance. This approach leverages real-time, actionable information to improve and save lives, and serves as a preparedness network as new threats emerge.
- **Identified associations between major birth defects and medications:** Health care providers and women of child bearing age can make more informed decisions about medication such as opioids,¹⁵³ and antidepressants¹⁵⁴, and make links to infections like urinary tract infections¹⁵⁵ and screening for other infections.¹⁵⁶ As a result, fewer babies may be exposed to these risks, and those who are can be closely monitored.
- **Provided evidence on pregestational diabetes and its association with birth defects:** Highlighting increased risk for many specific birth defects, such as defects of the brain, spine, or heart, the findings underscore the importance of improving diabetes detection and care before pregnancy, which can help reduce the risk of having a baby with a birth defect.¹⁵⁷
- **Identified disparities in stillbirth among women:** Black women were more than twice as likely to experience a stillbirth compared to White and Hispanic women, and improvements in the health of pregnant women who have regular access to quality prenatal care can potentially reduce the risk of stillbirth amongst all races and ethnicities.¹⁵⁸

As we learn more about causes of birth defects, CDC implements proven strategies to prevent them and improve care for those with birth defects.

- As a result of folic acid fortification¹⁵⁹ about 1,300 American babies are born *without* a neural tube defect (NTD) every year. The average direct lifetime costs per infant with spina bifida is estimated to be

¹⁵¹ <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm5701a2.htm>.

¹⁵² Arth AC, Tinker SC, Simeone RM, Ailes EC, Cragan JD, Grosse SD. Inpatient Hospitalization Costs Associated with Birth Defects Among Persons of All Ages — United States, 2013. *MMWR Morb Mortal Wkly Rep* 2017;66:41–46. DOI: <http://dx.doi.org/10.15585/mmwr.mm6602a1>.

¹⁵³ <https://www.cdc.gov/mmwr/volumes/68/wr/mm6802a2.htm>.

¹⁵⁴ <https://jamanetwork.com/journals/jamapsychiatry/article-abstract/2769190>.

¹⁵⁵ <https://onlinelibrary.wiley.com/doi/epdf/10.1002/bdr2.1409>.

¹⁵⁶ <https://bmjopen.bmj.com/content/bmjopen/9/3/e026297.full.pdf>.

¹⁵⁷ Tinker SC, Gilboa SM, Moore CA, et al. Specific birth defects in pregnancies of women with diabetes – National Birth Defects Prevention Study, 1997–2011. *Am J Obstet Gynecol*. 2019 Aug 24. <https://www.sciencedirect.com/science/article/pii/S0002937819310300>.

¹⁵⁸ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6937a1.htm>.

¹⁵⁹ Williams et al. Updated Estimates of Neural Tube Defects Prevented by Mandatory Folic Acid Fortification — United States, 1995–2011. *MMWR Morb Mortal Wkly Rep* 2015. <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>.

\$791,900 including caregiving costs. This represents an estimated savings of about \$603 million per year due to folic acid fortification.¹⁶⁰ This savings has the potential to increase as a result of CDC-supported voluntary corn masa flour fortification, addressing the higher rates of neural tube defects among Hispanic babies.

- Pregnant women and babies have been protected from COVID-19 by health communication messages and clinical recommendations informed by rapid data collection through CDC’s Surveillance for Emerging Threats to Mothers and Babies Network, an investment born out of the 2016 Zika response.^{161,162,163}
- Health care providers have updated evidenced-based guidance on caring for pregnant women and infants affected by Zika and COVID-19.^{164,165,166}
- Health care providers including OB/GYNs, social workers, and nurses have access to tools to improve alcohol screening and brief intervention, including clinical decision support¹⁶⁷ that can be implemented in electronic health records,^{168,169} and education to prevent fetal alcohol spectrum disorders. CDC efforts led to an increase in use of [FASD online trainings amongst health care providers](#).¹⁷⁰ Course registrations in 2020 were approximately 1.5 times higher than those reported for 2019.

In FY 2022, CDC will continue to build upon the science needed to develop and strengthen birth defects and infant disorders prevention strategies. CDC will primarily support birth defects surveillance, public health research, intervention, and prevention activities.

Neonatal Abstinence Syndrome

CDC’s FY 2022 request includes **\$2,250,000** for Neonatal Abstinence Syndrome (NAS) activities, level with FY 2021 Enacted.

Every 15 minutes, a baby is born with neonatal abstinence syndrome.¹⁷¹ NAS is a serious withdrawal syndrome that can occur in newborns after exposure to opioids during pregnancy. CDC is on the front lines of understanding the impact of NAS and the opioid and substance use epidemic on infants, children, and adults. In alignment with the Public Health Data Modernization Initiative, CDC confirmed the feasibility of using existing birth defect surveillance systems to monitor for outcomes of prenatal opioid exposure and assess possible connections between prenatal opioid exposure and infant health. CDC’s funded partners¹⁷² found that children born with NAS were more likely to have a developmental delay or speech or language impairment in early childhood compared to children born without NAS. The finding highlighted the urgency for enhanced understanding of the effects of exposure to opioids during pregnancy on the baby’s health, education, and social service needs as they grow.

The Council of State and Territorial Epidemiologists’ (CSTE) approved a position statement for standardized surveillance for NAS, marking a major milestone toward improved data collection and reporting on babies

¹⁶⁰ Williams et al. Updated Estimates of Neural Tube Defects Prevented by Mandatory Folic Acid Fortification — United States, 1995–2011. MMWR Morb Mortal Wkly Rep 2015. <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>.

¹⁶¹ <https://www.cdc.gov/coronavirus/2019-ncov/hcp/clinical-care.html>.

¹⁶² <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/pregnancy-breastfeeding.html>.

¹⁶³ https://www.cdc.gov/mmwr/volumes/69/wr/mm6944e2.htm?s_cid=mm6944e2_w.

¹⁶⁴ <https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-newborns.html>.

¹⁶⁵ Oduyebo T, Polen KD, Walke HT, et al. Update: Interim Guidance for Health Care Providers Caring for Pregnant Women with Possible Zika Virus Exposure — United States (Including U.S. Territories), July 2017. MMWR Morb Mortal Wkly Rep 2017;66:781–793. DOI: <http://dx.doi.org/10.15585/mmwr.mm6629e1>.

¹⁶⁶ Adebajo T, Godfred-Cato S, Viens L, et al. Update: Interim Guidance for the Diagnosis, Evaluation, and Management of Infants with Possible Congenital Zika Virus Infection — United States, October 2017. MMWR Morb Mortal Wkly Rep 2017;66:1089–1099.

¹⁶⁷ https://cds.ahrq.gov/cdsconnect/artifact_discovery.

¹⁶⁸ <https://www.cdc.gov/ncbddd/fasd/alcohol-screening.html>.

¹⁶⁹ https://cds.ahrq.gov/cdsconnect/artifact_discovery.

¹⁷⁰ <https://nccd.cdc.gov/FASD/>.

¹⁷¹ Winkelman TNA, Villapiano N, Kozhimannil KB, Davis MM, Patrick SW. Incidence and costs of neonatal abstinence syndrome among infants with Medicaid. Pediatrics 2018;141:e2017–3520.

¹⁷² <https://www.cdc.gov/pregnancy/features/kf-nas-educational-disabilities.html>.

affected by NAS. Health departments and hospital systems around the country may now use the same criteria to report cases of NAS to public health agencies, resulting in more consistent and comparable data on the incidence and impact of exposure to opioids during pregnancy on infant health.

In FY 2020 and 2021, CDC worked with CSTE to establish a pilot to conduct standardized surveillance using the new NAS case definition and provided funding support for four sites: Georgia, Massachusetts, Philadelphia, and Tennessee. CDC has also funded four epidemiology fellows to work within state health departments in Georgia, Massachusetts, Wisconsin, and Ohio to support NAS and birth defects monitoring activities. CDC will share findings from the pilot and use lessons learned to inform reporting of NAS. This will increase the number of states monitoring NAS as an outcome of opioid exposure, leveraging existing surveillance systems to refine case reporting and translate public health data, including pharmacological issues and epidemiologic findings, into clinical and public health recommendations, improving the quality of pregnancy and newborn health data.

Also in FY 2021, CDC and collaborators in Pennsylvania reviewed data from five Pennsylvania hospitals and reported that the Pennsylvania Department of Health's neonatal abstinence syndrome (NAS) surveillance system identified the majority (79%) of infants with NAS. The quality of NAS surveillance could be strengthened by using a combination of diagnosis code assessment and focused medical records review. Findings from this report may help guide NAS surveillance efforts in other states.¹⁷³

In FY 2022, CDC will continue with the pilot and working with partners to advance the understanding of NAS and translate findings to improve the care pregnant women and their babies.

Protecting Pregnant Women and Babies from Emerging Threats

CDC's FY 2022 request includes **\$15,000,000** for activities to protect pregnant women and babies from emerging threats and is **\$5,000,000** above the FY 2021 Enacted level. Prior investments have begun to address the serious gap in the nation's ability to detect and respond to emerging threats to moms and babies, but there remain significant vulnerabilities that the additional investment in innovative mother-baby linked surveillance will help to address. CDC currently supports 13 health departments for this surveillance to understand the potential impact of infectious diseases and other exposures on pregnant women and their babies, monitoring for poor birth outcomes such as birth defects and developmental delay and collaborates with health care professional and public health organizations to inform clinical care and communication. The additional investment would support up to 15 more health departments for this surveillance. The expansion to more health departments in the U.S. strengthens the public health preparedness and response infrastructure required to rapidly address the needs of pregnant women and their babies in more communities and increases geographic, racial and ethnic diversity resulting in a more inclusive and comprehensive understanding. Pregnant women and their babies may be uniquely vulnerable to many health conditions and disproportionately susceptible to infectious diseases such as Malaria and Listeriosis. Pregnant women may also be at risk for increased severity of disease once infected, such as with influenza or COVID-19. And some infections during pregnancy may increase the risk for adverse pregnancy and childhood outcomes—as was demonstrated with Zika virus.

The creation and implementation of the innovative U.S. [Zika Pregnancy and Infant Registry](https://www.cdc.gov/mmwr/volumes/67/wr/mm6731e2.htm?s_cid=mm6731e2_w)¹⁷⁴ surveillance system represented a paradigm shift to ensure that women and babies are adequately monitored and quickly informed about the impact of an emerging disease threat, including serious birth defects. This enhanced surveillance network, provided key information that improved management and response to health threats.

In FY 2020, CDC continued implementation of the Surveillance for Emerging Threats to Mothers and Babies Network (SET-NET) program.¹⁷⁵ Building on the achievements of the U.S. Zika Pregnancy and Infant Registry, the real-time, evidence-based, collection and assessment of mother to baby linked data has helped determine the

¹⁷³ https://www.cdc.gov/mmwr/volumes/67/wr/mm6731e2.htm?s_cid=mm6731e2_w.

¹⁷⁴ <https://www.cdc.gov/pregnancy/zika/research/registry.html>.

¹⁷⁵ <https://www.cdc.gov/ncbddd/aboutus/pregnancy/emerging-threats.html>.

impact of serious threats from exposures in pregnancy to Zika virus, syphilis, and Hepatitis C. Tracking the occurrence of birth defects, other infant problems, and developmental disabilities as children age has helped CDC address critical threats, develop appropriate prevention strategies, and inform clinical guidance and optimal care to meet the needs of children and families. CDC recently published an article describing SET-NET methodology and how it can be used as a preparedness model for mother-baby linked longitudinal surveillance for emerging threats.¹⁷⁶

Through a new five-year cooperative agreement, CDC supported 13 jurisdictions and public health partners to prevent, detect, respond to, and control the growing threats posed by infectious diseases through improving disease surveillance, laboratory capabilities, and outbreak response. CDC also supported 9 contractual field assignees in health departments serving groups with high burden to conduct educational outreach to health care providers and community members, helping connect families to available resources. Field assignees assist with local and state surveillance efforts, providing rapid response to local needs, and translating findings into practices that help families.

CDC continues to deepen the understanding of and address the effects of Zika virus infection during pregnancy by:

- **Tracking Zika’s impact on babies in the United States:** Found an increase in the number of babies born with birth defects in areas with widespread local Zika virus transmission.¹⁷⁷
- **Informing pediatric health care services:** Identified that nearly 1 in 7 babies born to pregnant women with Zika virus infection during pregnancy had health problems, including problems not apparent at birth.¹⁷⁸
- **Updating health care provider guidance:** Revised guidance on the evaluation and care of infants from pregnancies with lab evidence of possible Zika virus infection.^{179, 180} as well as updating guidance for preconception counseling and prevention of sexual transmission of Zika virus for men with possible Zika virus exposure.¹⁸¹
- **Supporting underserved populations impacted by Zika:** After the 2017 Hurricanes Irma and Maria, CDC worked with the U.S. Virgin Islands Department of Health and other partners to organize a health brigade to bring needed pediatric specialty care and screenings to an underserved population impacted by Zika. This health brigade model could be replicated to ensure clinical recommendations are met in populations that may have unmet medical needs due to the complexity of the conditions and/or rural location.^{182, 183}
- **Working with international partners:** Scientists from Colombia's Instituto Nacional de Salud and CDC reviewed data on pregnant women in Colombia who had Zika infection during the widespread Zika virus outbreak in 2015-2016. Birth defects were common during this outbreak and among women with Zika infection in their first trimester. These findings highlight the importance of monitoring both Zika virus exposure and birth defects. Monitoring both helps us see the full impact of Zika virus infection during pregnancy.¹⁸⁴ In a separate collaborative analysis of birth defects surveillance data from Colombia’s enhanced surveillance system between 2015-2017, nearly 60% of the cases of microcephaly and/or central nervous system defects were potentially attributable to Zika virus infection.¹⁸⁵

¹⁷⁶ <https://pubmed.ncbi.nlm.nih.gov/33394275/>.

¹⁷⁷ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6903a3.htm>.

¹⁷⁸ https://www.cdc.gov/mmwr/volumes/67/wr/mm6731e1.htm?s_cid=mm6731e1_w.

¹⁷⁹ <https://www.cdc.gov/mmwr/volumes/66/wr/mm6641a1.htm>.

¹⁸⁰ <https://www.cdc.gov/mmwr/volumes/66/wr/mm6641a1.htm>.

¹⁸¹ https://www.cdc.gov/mmwr/volumes/67/wr/mm6731e2.htm?s_cid=mm6731e2_w.

¹⁸² <https://www.mdpi.com/2414-6366/5/4/168pubmed.ncbi.nlm.nih.gov/30856278/>.

¹⁸³ <https://pubmed.ncbi.nlm.nih.gov/30856278/>.

¹⁸⁴ https://www.nejm.org/doi/full/10.1056/NEJMoa1911023?query=featured_home.

¹⁸⁵ [https://www.ipeds.com/article/S0022-3476\(20\)30180-3/fulltext](https://www.ipeds.com/article/S0022-3476(20)30180-3/fulltext).

In 2020, CDC was able to quickly expand its Surveillance for Emerging Threats to Mothers and Babies (SET-NET) program to address COVID-19 and scale up with support from one-time supplemental and emergency appropriations. CDC increased funding to 12 SET-NET jurisdictions and funded 16 additional jurisdictions with the one-time supplemental to address COVID-19. This funding supports the collection of information that will help the nation better understand the impact of COVID-19 on pregnant women and their infants, which will inform their COVID-19 prevention and care efforts. Jurisdictions are funded through the Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) Cooperative Agreement.¹⁸⁶ In all, a total of 29 jurisdictions are conducting maternal-infant surveillance through SET-NET with support from CDC to examine COVID-19, Zika, syphilis and hepatitis C.

CDC recently published its first data from SET-NET on COVID-19: *“Birth and infant outcomes Following Laboratory-Confirmed SARS-CoV-2 Infection in Pregnancy — SET-NET, 16 Jurisdictions, March 29–October 14, 2020.”*¹⁸⁷ These data showed that pregnant women with COVID-19 may be at increased risk of having a preterm infant (born before 37 weeks), which could lead to serious health problems for the infant. Infants born to mothers with COVID-19 during pregnancy were rarely found to have positive COVID-19 test results, and those who did have a positive test result were primarily born to mothers who had COVID-19 within one week of delivery. The data supports pregnant women and their families continuing to follow key mitigation measures to reduce their risk of becoming ill with COVID-19. CDC continues to collect and analyze SET-NET data, including demographics and risk factors for illness severity among pregnant women and publicly reports its SET-NET data monthly on its COVID-19 website.¹⁸⁸

With support from COVID-19 supplemental and emergency appropriations in fiscal year 2021, CDC anticipates supporting an additional 4 jurisdictions to work on COVID-19 for SET-NET and follow the impact of COVID-19 on pregnant individuals and their infants. CDC is providing other jurisdictions technical assistance, including data collection resources and technical documentation, as well as invitations to data use working group calls to discuss surveillance activities.

In FY 2022 CDC will continue using these innovative surveillance approaches as a key component of preparedness and rapid response activities for these populations. To gather the highest quality data for public health action, CDC will focus on monitoring the impact of infectious disease such as COVID-19, Zika, syphilis, and hepatitis C on pregnant women and their babies and build our nation’s capacity to:

- Act early to protect pregnant women and babies.
- Identify health problems, developmental delays, and functional disabilities.
- Inform prevention strategies, safe medication use, and clinical management.
- Link affected families to medical and social services.

Fetal Alcohol Syndrome

Fetal alcohol spectrum disorders (FASDs) are a group of birth defects and developmental disabilities that result from a mother’s use of alcohol during pregnancy. Recent estimates indicate that 1 in 20 US children may have FASDs.¹⁸⁹ Prenatal alcohol exposure is also associated with an increased risk for miscarriage, stillbirth, preterm birth, and sudden infant death syndrome (SIDS).¹⁹⁰ Despite these known adverse effects, alcohol use during pregnancy remains a critical public health issue and polysubstance use is increasingly common. Recent CDC data indicate that 11.5% of pregnant women reported drinking and 3.9% reported binge drinking in the past 30

¹⁸⁶ <https://www.cdc.gov/ncezid/dpei/epidemiology-laboratory-capacity.html>.

¹⁸⁷ https://www.cdc.gov/mmwr/volumes/69/wr/mm6944e2.htm?s_cid=mm6944e2_w.

¹⁸⁸ <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/special-populations/birth-data-on-covid-19.html>.

¹⁸⁹ May PA, Chambers CD, Kalberg WO, et al. Prevalence of fetal alcohol spectrum disorders in 4 US communities. *JAMA* 2018;319:474–82.

¹⁹⁰ Bailey BA, Sokol RJ. Prenatal alcohol exposure and miscarriage, stillbirth, preterm delivery, and sudden infant death syndrome. *Alcohol Res Health* 2011;34:86–91.

days.¹⁹¹ In addition, a recent CDC analysis showed that use of other substances, like tobacco and marijuana, was common among pregnant women who reported alcohol use.¹⁹² CDC uses a comprehensive approach to address FASDs and the prevention of prenatal alcohol exposure. This includes assessing trends in alcohol and polysubstance use in pregnancy, monitoring healthcare provider behaviors related to alcohol screening and brief intervention (SBI), and collaborating with partners across the nation to implement evidence-based strategies to reduce alcohol use during pregnancy and develop and disseminate FASD training and educational resources.

Alcohol SBI is an evidence-based intervention that may decrease alcohol use during pregnancy, yet this service remains underutilized. In 2020, CDC released two publications reporting trends in alcohol use during pregnancy and the use of alcohol SBI.^{193, 194} To increase the use of alcohol SBI in healthcare settings, CDC partnered with the MITRE Corporation to develop five clinical decision support (CDS) tools on alcohol SBI that can be integrated into electronic health records to help clinicians deliver alcohol screening to patients and offer evidence-based interventions to those at risk.¹⁹⁵ CDC also collaborated with the Substance Abuse and Mental Health Services Administration (SAMHSA) to promote a Healthcare Effectiveness Data and Information Set (HEDIS) measure, *Unhealthy Alcohol Use Screening and Follow-up* to develop quality improvement strategies to help health plans address excessive alcohol use among their members and improve reporting of this measure.¹⁹⁶ Finally, CDC also funds four cooperative agreements that have implemented alcohol SBI within healthcare systems providing women's health services. CDC's activities also focus on developing and disseminating FASD training and educational resources.

In FY 2022, CDC will continue to monitor trends in alcohol and polysubstance use in pregnancy. CDC will also continue to work with partners across the nation to implement evidence-based strategies to reduce alcohol use during pregnancy and maximize healthcare professionals' ability to identify patients at risk and intervene as needed.

¹⁹¹ Denny CH, Acero CS, Naimi TS, Kim SY. Consumption of alcohol beverages and binge drinking among pregnant women aged 18–44 years—United States, 2015–2017. *MMWR Morbidity and Mortality Weekly Report* 2019;68(16):365–368.

¹⁹² England LJ, Bennett C, Denny CH, Honein MA, Gilboa SM, Kim SY, Guy GP, Tran EL, Rose CE, Bohm MK, Boyle CA. Alcohol use and co-use of other substances among pregnant females aged 12–44 years – United States, 2015–2018. *MMWR Morbidity and Mortality Weekly Report* 2020; 69(31):1009–1014.

¹⁹³ Denny CH, Acero CS, Terplan M, Kim SY. Trends in alcohol use among pregnant women in the U.S., 2011–2018. *AJPM* 2020; 59(5):768–769.

¹⁹⁴ McKnight-Eily LR, Okoro CA, Turay K, Acero C, Hungerford D. Screening for alcohol use and brief counseling of adults – 13 states and the District of Columbia, 2017. *MMWR Morbidity and Mortality Weekly Report* 2020;69(10):265–270.

¹⁹⁵ <https://www.cdc.gov/ncbddd/fasd/clinical-decision-support.html>.

¹⁹⁶ <https://www.ncqa.org/hedis/reports-and-research/hedis-measure-unhealthy-alcohol-use-screening-and-follow-up/>.

Developmental Disabilities

Developmental disabilities are among the most significant child health issues facing American families. They include conditions like autism spectrum disorder, congenital hearing loss, and Attention-Deficit/Hyperactivity Disorder. These conditions typically appear by early childhood, may impact day-to-day functioning, and usually last throughout a person's lifetime. Children with developmental disabilities are also at significantly greater risk for other co-occurring mental, emotional, and behavioral disorders that often cause additional challenges for these children and their families. The COVID-19 pandemic has posed additional barriers to timely identification, screening, and receipt of intervention services for developmental disabilities and co-occurring disorders. During this time, CDC continues to help children reach their full potential by providing families, educators, health care providers, and community leaders with a comprehensive understanding of these conditions and offering information and innovative solutions that guide decision-making, so children and their families get the support they need.

Autism Spectrum Disorder

CDC data published in 2020 found that about 1 in 54 children aged 8 years in the CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network¹⁹⁷ have autism spectrum disorder (ASD).¹⁹⁸ These data also found, for the first time, no overall difference in the number of Black children identified with ASD compared to White children. This highlights the importance of CDC's ADDM Network in driving policy and clinical changes at the state and local levels to ensure all children with ASD are identified early. CDC analyses also show that parenting a child with ASD is associated with high stress.¹⁹⁹ The costs of medical care, special education services, therapy, caregiver time, and other expenses were estimated to be between \$11.5 billion–\$60.9 billion (2011 U.S. dollars).²⁰⁰ CDC's investments in monitoring, research, and improved early identification are leading us to a better understanding of ASD and better results for children and their families. CDC recently provided supplemental funding to 7 ADDM Network sites to pilot a statewide expansion of ASD monitoring that requires fewer resources and may be of use to communities without local data on ASD or other developmental disabilities.

CDC's recently launched Autism Data Visualization platform²⁰¹ which lets users explore available data on the prevalence of ASD among children as well as demographic and other characteristics of this population. This platform provides an easy way to access national, state, and community-specific data that can inform programs, policies, and practice to address health disparities and improve the health and well-being of children with ASD.

CDC's Study to Explore Early Development (SEED)²⁰² is currently the largest study in the United States to help identify factors that may put children at risk for ASD and other developmental disabilities. CDC findings on risk factors guide research priorities into potential causes of ASD and clinical care. Recent topics of study include maternal weight,²⁰³ neonatal jaundice,²⁰⁴ early life exposure to air pollution,^{205,206} and behaviors that may be observed in children with ASD, such as wandering.²⁰⁷

As children with ASD age into adolescence and adulthood, there are little data to help understand their challenges and needs. In FY 2020, CDC's pilot project examining ASD in high school-age children (at 16 years),

¹⁹⁷<https://www.cdc.gov/ncbddd/autism/addm.html>.

¹⁹⁸ Maenner MJ, Shaw KA, Baio J, et al. Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2016. *MMWR Surveill Summ* 2020;69(No. SS-4):1–12. DOI: <http://dx.doi.org/10.15585/mmwr.ss6904a1>.

¹⁹⁹ http://pediatrics.aappublications.org/content/119/Supplement_1/S114.

²⁰⁰ <https://www.ncbi.nlm.nih.gov/pubmed/17690969>.

²⁰¹ <https://www.cdc.gov/ncbddd/autism/data/index.html>.

²⁰² <https://www.cdc.gov/ncbddd/autism/seed.html>.

²⁰³ <https://www.ncbi.nlm.nih.gov/pubmed/30575327>.

²⁰⁴ <https://pubmed.ncbi.nlm.nih.gov/31388117/>.

²⁰⁵ <https://pubmed.ncbi.nlm.nih.gov/32478281/>.

²⁰⁶ <https://pubmed.ncbi.nlm.nih.gov/31592868/>.

²⁰⁷ <https://pubmed.ncbi.nlm.nih.gov/31977588/>.

SEED Teen²⁰⁸ began collecting updated health and development information on children who were enrolled in SEED when they were younger. To date, more than 850 families have enrolled in SEED Teen and more than 650 have completed the study. Information gained from SEED Teen will help us understand health inequities within this population as well as the needs of teenagers with autism and other developmental delays as well as their parents, caregivers, and siblings. Following this pilot, CDC is planning a larger follow-up study of children who were previously enrolled in SEED. This project will add knowledge about ASD, including risk factors for ASD and the expression of ASD, from childhood through early adulthood, and information that can be used to improve the health and functioning of individuals with ASD as they mature.²⁰⁹

CDC's Learn the Signs. Act Early. (LTSAE) program²¹⁰ encourages tracking of developmental milestones, identification of developmental delays, and acting early on concerns so children and families can get the services and support they need. CDC's LTSAE program routinely engages early care educators, health care providers, and other professionals to support parents in regular developmental monitoring and action on concerns. Additionally, Act Early Ambassadors²¹¹ and Act Early State Systems²¹² grantees promote and integrate developmental monitoring of all young children into early child services and programs at the state and local levels, such as childcare, home visiting, and WIC clinics.

CDC is bolstering the integration of the LTSAE program into these services and programs and to connect children and families with resources and services related to developmental monitoring and the COVID-19 pandemic. CDC increased the number of Act Early Ambassadors, and there is now an Act Early Ambassador in every state, the District of Columbia, and three territories (Guam, Puerto Rico, and US Virgin Islands). Act Early Ambassadors are identifying, implementing, and evaluating strategies to increase parent-engaged developmental monitoring and early action on concerns. Act Early Ambassadors are also promoting and distributing materials and tools to improve resiliency of very young children (birth to age 5) and their families during COVID-19 pandemic, aligning with CDC's response efforts.

In FY 2022, CDC will continue to support the tracking and research that help us better understand ASD, how children and families are affected, and how we can best address health inequities and support this population during the COVID-19 pandemic. CDC will also continue contributing to the enhanced understanding of children with ASD as they reach adolescence to inform critical periods in development and transition to adulthood.

Early Hearing Detection and Intervention

CDC addresses another common condition that can lead to developmental delays if not identified early – hearing loss in children. Nearly one out of every 500 infants in the United States is born deaf or hard of hearing.²¹³ Undiagnosed hearing loss can result in serious and long-term consequences by affecting a child's ability to develop speech, language, and social skills. Early identification and intervention of hearing loss can significantly improve developmental outcomes for children with hearing loss.^{214,215,216}

In FY 2020, CDC invested \$6,230,000 million in 39 jurisdictions (38 states and 1 territory—Puerto Rico) to optimize their Early Hearing Detection and Intervention Information Systems (EHDI-IS), which are state-based surveillance systems that help jurisdictions ensure all infants in the United States are screened and receive the

²⁰⁸ <https://www.cdc.gov/ncbddd/autism/seed-teen.html>.

²⁰⁹ <https://www.grants.gov/web/grants/view-opportunity.html?oppld=327720>.

²¹⁰ <http://www.cdc.gov/ncbddd/actearly/index.html>.

²¹¹ <https://www.cdc.gov/ncbddd/actearly/ambassadors-list.html>.

²¹² <https://www.cdc.gov/ncbddd/actearly/parents/states.htm>.

²¹³ <https://www.cdc.gov/ncbddd/hearingloss/2016-data/01-data-summary.html>.

²¹⁴ Stika CJ, Eisenberg LS, Johnson KC, Henning SC, Colson BG, Ganguly DH, et al. Developmental outcomes of early-identified children who are hard of hearing at 12 to 18 months of age. *Early Hum Dev.* 2015;91(1):47-55.

²¹⁵ Vohr B, Jodoin-Krauzyk J, Tucker R, Johnson MJ, Topol D, Ahlgren M. Early language outcomes of early-identified infants with permanent hearing loss at 12 to 16 months of age. *Pediatrics.* 2008;122(3):535-544.

²¹⁶ Yoshinaga-Itano C. From Screening to Early Identification and Intervention: Discovering Predictors to Successful Outcomes for Children With Significant Hearing Loss. *Journal of deaf studies and deaf education.* 2003;8(1):11-30.

essential follow-up diagnostic and intervention services in a timely manner. CDC is solely responsible for collecting and analyzing [EHDI data](#)²¹⁷ from these EHDI-IS spanning the entire United States. These essential health data are used by CDC to assist health departments, service providers, and early intervention programs in providing and planning services, identifying areas for improvement, and guiding resource allocation to meet the needs of infants with hearing loss and their families. As part of this work, CDC has developed multiple tools and standards, including national quality measures, guidelines for interoperability between EHDI and other child health data systems, functional standards for EHDI-IS, and detailed data dictionaries that increase efficiency.

To ensure infants who are born deaf or hard of hearing are ready for kindergarten, CDC is leveraging previous successes to move into new phases of work. Jurisdictions will use their EHDI-IS to capture and use real-time patient-level data, enabling them to actively track and ensure each child who is at risk for permanent hearing loss or who is diagnosed as deaf or hard of hearing receives timely diagnosis and intervention services. The successful reporting and analysis of standardized sets of patient-level data during previous pilot projects has enabled CDC to redefine EHDI surveillance capacity by moving beyond the limitations of aggregate data. CDC will be able to conduct more detailed analyses on why some infants do not receive recommended follow-up services and on how to improve service delivery and tracking in state and territorial jurisdictions. These efforts to modernize data collection and analysis, strengthen CDC’s public health infrastructure and drive progress in EHDI tracking. Over the next three years, CDC will establish the first developmental data assistance center that will gather, analyze, and use intervention and developmental outcome data to increase jurisdictional capacity. CDC will continue to assess impact outcomes of children who are deaf or hard of hearing.

Because of CDC’s investment in helping children with hearing loss reach their full potential:

- More than 98 percent of infants born in the United States are now screened for hearing loss.²¹⁸
- Over 6,400 infants who were born deaf or hard of hearing in 2018 were identified early, bringing the total number of infants born deaf or hard of hearing that were identified early to over 71,000 (between 2005 and 2018).²¹⁹
- The percentage of infants who received needed follow-up services to determine if they have hearing loss has steadily increased from 30 percent in 2005 to over 70 percent in 2018.²²⁰
- Infants with hearing loss who are identified early (i.e., before three months of age) and start to receive intervention services before six months have improved language and communication skills later in childhood that are comparable to their peers without hearing loss.²²¹ This early identification and intervention helps ensure children who are born deaf or hard of hearing are ready for kindergarten.
- The newborn hearing screening program saves \$200 million in education costs each year.²²²

While hearing screening is now part of routine newborn care, CDC is committed to ensuring that all infants with hearing loss receive critical and timely screening, diagnostic, and intervention services. In FY 2022, CDC will focus on strengthening jurisdictions’ capacity to use real-time patient-level EHDI data that is complete and timely for improved tracking and to inform decision making. CDC will also support jurisdictions in increasing the number of infants who receive a diagnosis before 3 months of age and who are enrolled in intervention services before 6 months of age.

²¹⁷ <https://www.cdc.gov/ncbddd/hearingloss/data.html>.

²¹⁸ https://www.cdc.gov/ncbddd/hearingloss/2014-data/screen_2014_web_b.pdf.

²¹⁹ <https://www.cdc.gov/ncbddd/hearingloss/ehdi-data.html>.

²²⁰ <https://www.cdc.gov/ncbddd/hearingloss/ehdi-data.html>.

²²¹ Yoshinaga-Itano C, Sedey AL, Wiggin M, et al. Early Hearing Detection and Vocabulary of Children With Hearing Loss. *Pediatrics*. 2017;140(2):e20162964

²²² Gross, SD. Education cost savings from early detection of hearing loss: New findings. *Volta Voices* 2007; 14(6):38-40.

Attention-Deficit/Hyperactivity Disorder

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common neurodevelopmental disorders of childhood that affects an estimated one in 11 children aged 2 to 17 years.²²³ Children with developmental disabilities, such as ADHD, are at significantly greater risk for co-occurring mental, emotional, and behavioral disorders. Early and effective treatment of ADHD is the key to children's success at home, in school, in the community, and as they transition into adulthood. With excess expenses related to ADHD costing Americans up to \$72 billion per year, it is important for children diagnosed with ADHD to receive treatment consistent with clinical best practices.²²⁴

As a result of CDC's investment in improving the health and well-being of children and adolescents living with ADHD, we now know:

- About 1 in 6 students had enough behavioral or emotional symptoms and impairment to be diagnosed with a childhood mental disorder.²²⁵
- The average cost per child for the ADHD cohort in New York's Medicaid program was approximately 3.2 times the average cost per child for all children enrolled in Medicaid. Developing a framework to categorize children with ADHD based on their treatment categories may help target interventions to improve the quality of care and reduce costs for state Medicaid programs.²²⁶

Of the estimated 6.1 million U.S. children and adolescents aged 2 to 17 with an ADHD diagnosis, 47 percent received behavioral treatment for their ADHD in the past year compared with the 62 percent who took medication for their symptoms.²²⁷ CDC recently published these findings, marking the first national estimates of ADHD diagnoses and treatment from the redesigned National Survey of Children's Health.

In FY 2022, CDC will continue to improve the health of people affected by ADHD by providing evidence-based information, tools, and resources to connect more children and families to effective treatment. CDC will also build state, tribal, local, and territorial capacity to systematically collect, analyze, interpret, and share data on ADHD to inform decision-making about children's mental health.

Tourette Syndrome

Valuable and impactful discoveries are made about Tourette Syndrome (TS)²²⁸ every year. In addition to directly affecting quality of life for the one in 360 children diagnosed with TS, 86% of children with diagnosed TS have a co-occurring condition such as ADHD, anxiety disorder, or a learning disability that can further complicate their health and wellbeing.²²⁹ CDC works with partners to conduct research to better understand TS prevalence, risk and protective factors, and health risk behaviors. Results from this research are used to create measurable improvements in the identification and treatment of TS as well as the quality of life among people with TS and their families.

²²³ Danielson, M. L., Bitsko, R. H., Ghandour, R. M., Holbrook, J. R., Kogan, M. D., & Blumberg, S. J. (2018). Prevalence of parent-reported ADHD diagnosis and associated treatment among U.S. children and adolescents, 2016. *Journal of Clinical Child & Adolescent Psychology*, 47(2), 199-212. doi:10.1080/15374416.2017.1417860 <http://doi.org/10.1016/j.jaac.2013.09.001>.

²²⁴ Jalpa A. Doshi et al., Economic Impact of Childhood and Adult Attention-Deficit/Hyperactivity Disorder in the United States, 51 J. AM. ACAD. CHILD & ADOLESCENT PSYCHIATRY 990, 1000 (2012).

²²⁵ Danielson ML, Bitsko RH, Holbrook JH et al (2020). Community-based prevalence of externalizing and internalizing disorders among school-aged children and adolescents in four geographically dispersed school districts in the United States. *Child Psychiatry and Human Development*, <https://link.springer.com/article/10.1007%2Fs10578-020-01027-z>.

²²⁶ Guo, L., Danielson, M., Cogan, L., Hines, L., & Armour, B. (2018). Treatment Patterns and Costs Among Children Aged 2 to 17 Years With ADHD in New York State Medicaid in 2013. *Journal of Attention Disorders*. <https://doi.org/10.1177/1087054718816176>.

²²⁷ Danielson, M. L., Bitsko, R. H., Ghandour, R. M., Holbrook, J. R., Kogan, M. D., & Blumberg, S. J. (2018). Prevalence of parent-reported ADHD diagnosis and associated treatment among U.S. children and adolescents, 2016. *Journal of Clinical Child & Adolescent Psychology*, 47(2), 199-212. doi:10.1080/15374416.2017.1417860 <http://doi.org/10.1016/j.jaac.2013.09.001>.

²²⁸ <https://www.cdc.gov/ncbddd/tourette/index.html>.

²²⁹ https://journals.lww.com/jrnldbp/Fulltext/2014/06000/A_National_Profile_of_Tourette_Syndrome,_2011_2012.2.aspx.

CDC's investment in Tourette Syndrome has led to the following achievements:

- The CDC-funded Tourette Health and Education program has completed more than 1,175 events nationwide that provide evidence-based information to help people with TS receive needed health services, be more accepted by those around them, and succeed in school and work.²³⁰ These programs aim to address health disparities by reaching out to organizations that serve cultural minorities or communities in all geographic areas through telehealth practices.
- CDC funded the development of screening tools and brief diagnostic tools to improve the early identification of children with tics as well as an update of the Diagnostic Interview Schedule for Children to use as an accurate diagnostic interview for mental, emotional, and behavioral disorders, including TS.

In FY 2022, CDC will continue to lead research efforts to better understand symptom onset, diagnostic process and timing, treatment, and impact of TS using data from the [National Survey of the Diagnosis and Treatment of ADHD and Tourette Syndrome \(NS-DATA\)](#)²³¹, a follow-up survey of families who participated in the 2011-2012 [National Survey of Children's Health](#)²³². CDC will also continue to work closely with its funded partner, the Tourette Association of America, to implement more strategic outreach efforts in order to reach children, families and adults with TS.

Fragile X Syndrome

Fragile X Syndrome (FXS)²³³ is the most commonly known inherited cause of intellectual disability. CDC works to better understand FXS and co-occurring conditions, life course development, and interventions to improve the quality of life for individuals with FXS and their families. CDC works with these partners to describe the current state of the science and identify gaps in knowledge to better inform the public health research agenda for FXS.

CDC is working to learn more about the natural history of FXS so that better approaches to intervention can be developed. As part of this effort, CDC:

- Supports the National Fragile X Foundation's Fragile X Online Registry With Accessible Research Database (FORWARD).²³⁴ FORWARD helps researchers and health care providers learn more about co-occurring conditions, the impact of FXS on daily living, short-term and long-term outcomes, and effective interventions and supports.
- Collaborated with the American Academy of Pediatrics to develop and distribute educational materials to healthcare professionals and families to encourage early diagnosis so that people with FXS can receive appropriate care and services.²³⁵

In FY 2022, CDC will continue to learn more about how children with FXS develop compared to children with other disabilities, and to learn more about children with FXS who also have other diagnosed conditions. This research will contribute to the understanding of the natural history of FXS across the lifespan; explore effective strategies to increase participation of minorities, underserved and adults living with FXS; and test approaches to measure cognitive and behavioral function in the FXS population.

²³⁰ <https://www.cdc.gov/ncbddd/tourette/education.html>.

²³¹ https://www.cdc.gov/nchs/slits/ns_data.htm.

²³² <http://www.childhealthdata.org/learn/NSCH>.

²³³ <https://www.cdc.gov/ncbddd/fxs/index.html>.

²³⁴ <http://forwardfx.org/http://forwardfx.org/>.

²³⁵ <https://www.cdc.gov/ncbddd/fxs/features/fragile-x-myths.html>.

Blood Disorders

About one in 76 Americans have a blood disorder. Blood transfusions are an important part of medical care for many patients with sickle cell disease or thalassemia. Blood-borne infections and limited blood supply are of high concern for people who depend on blood transfusions for treatment. The response to COVID-19 has caused a precipitous drop in blood donations, threatening the nation's blood supply for these lifesaving therapies.

CDC continues to address the needs of Americans with blood disorders by gathering data on patient outcomes over time, targeting education campaigns to improve understanding of how to be healthy while living with these diseases, and working with partners to ensure doctors and patients know how to prevent complications from these heritable disorders. In addition, surveillance systems help improve understanding of how public health emergencies like COVID-19 can exacerbate existing health disparities and ensure enhanced, accurate information to improve and maintain standards of care during a pandemic.

Working with partners in academia, national professional organizations, state and local health departments, and other federal agencies, CDC identifies:

- How often and in what settings blood disorders occur to better understand who is at higher risk.
- Effective blood disorder prevention strategies.
- Ways to reduce complications from blood disorders.

Sickle Cell Disease

Sickle cell disease (SCD) is the most common inherited blood disorder in the United States, and affects an estimated 100,000 Americans, the majority of whom are African American. Complications of SCD include anemia, debilitating pain, infection, stroke, and organ damage. Adults with the most severe form of SCD die 20-30 years sooner than people without SCD. Poor health outcomes are often a result of limited access to proper healthcare, especially during adulthood, and limited treatment options.

People with SCD face barriers to proper care such as discrimination, difficulty finding providers who accept Medicaid—about 60-70% of people with SCD are Medicaid beneficiaries—and lack of providers with expertise to treat SCD. People with SCD experience shorter life expectancy compared to people without SCD,²³⁶ and the rate of stroke in SCD peaks in older adults and is 3-fold higher than rates in African-Americans of similar age (35 to 64 years) without SCD.²³⁷ The estimated cost of care for SCD is approximately \$1.1 billion dollars annually; the majority of these costs are carried by public insurance programs like Medicaid and Medicare.^{238[1]}

African Americans are experiencing a disproportionate rate of infection, severe illness, and death from COVID-19. Patients with underlying health conditions—in particular, kidney disease and heart/circulatory issues—are at highest risk of death from complications of COVID-19. Individuals with SCD fall into both categories, putting them in one of the highest risk populations in the United States. A recent CDC publication²³⁹ listed SCD among the underlying conditions of children under 18 years old who were hospitalized with COVID-19 in 14 states over the span of 5 months.^{240[2]} CDC is working to use data to better understand how people with SCD are impacted by COVID-19.

²³⁶ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6902797/>.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2737603/>.

²³⁷ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2737603/>.

²³⁸ Kauf TL, Coates TD, Huazhi L, et al. The cost of health care for children and adults with sickle cell disease. *Am J Hematol.* 2009; 84(6): 323-7.

<https://pubmed.ncbi.nlm.nih.gov/19358302/>.

²³⁹ https://www.cdc.gov/mmwr/volumes/69/wr/mm6932e3.htm?s_cid=mm6932e3_e&deliveryName=USCDC_921-DM34906.

²⁴⁰ https://www.cdc.gov/mmwr/volumes/69/wr/mm6932e3.htm?s_cid=mm6932e3_e&deliveryName=USCDC_921-DM34906.

In 2015, with private funding received through the CDC Foundation, CDC launched the Sickle Cell Data Collection (SCDC) program²⁴¹ in California and Georgia. In 2020, CDC launched a one-year capacity building project to prepare additional states to conduct surveillance activities in the SCDC program. Through this project California and Georgia leveraged their previous successes in establishing SCD surveillance by providing technical assistance to new awardees, helping them build baseline capacity for SCD data collection. As a result of these efforts, awardees received technical assistance and tools to develop frameworks and road maps for SCD data collection and surveillance, which are also available to the public on the CDC website.

In 2021, CDC expanded the SCDC network to 9 states including California and Georgia. Through this new three-year cooperative agreement, recipients leveraged the groundwork laid during the 2020 to begin collecting and linking data from multiple sources to paint a comprehensive picture of where people with SCD are located, how they access healthcare, and additional information on their health status. In addition, with private funding from the CDC Foundation, two more states will be supported, bringing the SCDC network to 11 states total.

Activities of the SCDC network include collecting and analyzing aggregate SCD data and providing key information to stakeholders which may help inform policy resulting in improved health care practices and new treatments. Recipients adhere to standardized methods for implementing SCDC, including linking and deduplicating multiple data sources; developing strategies for effective communication with SCD community stakeholders; and producing peer-reviewed publications and other educational materials to disseminate program findings.

As a result of findings from SCDC, California and Georgia improved the availability of adequate care by establishing new SCD clinics in areas with the greatest need. Data have also made possible analyses to direct broader federal efforts in SCD activities including new treatments and curative therapies.

CDC’s rich experience and technical expertise in SCD surveillance makes it uniquely positioned to build upon the work of the program—namely, to:

- Collect, link, and report demographic data of people living with sickle cell disease (SCD) in select states;
- Identify health disparities by state, such as in geographic distribution of people with sickle cell disease and available health care providers; and
- Produce and disseminate materials like topic-focused data briefs, fact sheets and data reports with visual representations of findings including maps and graphs.

Hemophilia

CDC works closely with hospitals and clinics across the country to track and analyze patient data for people with bleeding disorders like hemophilia. Hemophilia is an inherited life-long bleeding disorder that can cause damage to internal organs and chronic joint disease and pain. About 15-20% of people with hemophilia will develop an inhibitor, an antibody to the products used to treat or prevent bleeding.²⁴² Inhibitors make treatments less effective, increasing hospitalizations, compromising physical functioning, and increasing risk of death²⁴³, potentially causing a single patient’s treatment costs to exceed \$1 million a year.²⁴⁴ CDC’s work to discover and treat inhibitors early helps improve outcomes and reduce costs.

Through data gathered by CDC’s bleeding disorders surveillance programs, CDC has made the following important contributions:

²⁴¹ <https://www.cdc.gov/ncbddd/hemoglobinopathies/scdc.html>.

²⁴² <http://www.cdc.gov/ncbddd/hemophilia/inhibitors.html>.

²⁴³ <https://www.ncbi.nlm.nih.gov/pubmed/25616111>.

²⁴⁴ <https://www.ncbi.nlm.nih.gov/pubmed/22151000>.

- CDC has worked with 140 Hemophilia Treatment Centers across 47 states, two territories and Washington D.C. to increase the lifespan of individuals with hemophilia by 30 years through laboratory studies.
- CDC data has shown that a person with hemophilia who is treated at a federally supported specialized care center has a 40 percent decrease in the risk of death as compared to those treated at a non-specialized center.²⁴⁵
- Data from CDCs' monitoring program for bleeding disorders showed that starting young children with severe hemophilia on prophylaxis before age 4 is the most effective way to preserve healthy joint function.²⁴⁶
- CDC also is part of the Blood Disorder and Blood Safety interagency workgroup that added a hemophilia measure to Healthy People 2030. CDC's bleeding surveillance program Community counts is the data source for the measure.

Community Counts²⁴⁷ CDC's bleeding disorders surveillance program, gathers individual and population-level data that helps physicians and scientists improve the lives of people with hemophilia. Using Community Counts data, CDC developed national laboratory testing guidance²⁴⁸ to detect a hemophilia patient's resistance to treatment. Community Counts now incorporates annual inhibitor testing to identify inhibitors earlier and prevent costly complications. CDC also successfully developed an alternative inhibitor testing scheme, and a mechanism to quickly identify patients using new hemophilia treatment products. This type of CDC-led innovation is essential to CDC's continued support of improved patient care and reduction in inhibitor-related preventable complications.

CDC's data visualization tool²⁴⁹ for Community Counts represents the largest US publicly accessible database with over 88,000 individuals with bleeding disorders receiving care at hemophilia treatment centers (HTCs). The data visualization tool is an interactive way to assess characteristics and understand the burden of specific bleeding disorders in the U.S. by using charts, graphs, and maps. Since its launch in 2019, CDC has added a new feature on treatment practices to the data visualization tool, making more data available to the patients, providers and general public.

In FY 2022, CDC will:

- Continue to optimize testing protocols to provide the most accurate inhibitor testing.
- Develop an internal data tracking system accessible to regional coordinators for more than 140 HTCs, to better monitor enrollment, testing results, and patient data.
- Continue the public health education campaign to increase awareness about the signs, symptoms, and diagnosis of bleeding disorders among the estimated 1.5 million women in the United States that have an undiagnosed bleeding disorder.
- Work to exceed the 2019-2020 goal of 6,000 people enrolled in the Community Counts surveillance system through federally funded Hemophilia Treatment Centers, currently at 5,755 participants (96% of the target).

Thalassemia

Thalassemia²⁵⁰ is a group of genetic red blood cell disorders that cause anemia beginning at birth and lasting throughout life. People with thalassemia require blood transfusions to live, which places them at higher risk for transfusion-related infections and complications that can result in organ failure and early death. As a population

²⁴⁵ <http://www.bloodjournal.org/content/96/2/437.full?sso-checked=true>.

²⁴⁶ <https://www.cdc.gov/ncbddd/hemophilia/features/kf-prophylaxis-joint-disease.html>.

²⁴⁷ <https://www.cdc.gov/ncbddd/hemophilia/communitycounts/about.html>.

²⁴⁸ <https://www.ncbi.nlm.nih.gov/pubmed/23546724>.

²⁴⁹ <https://www.cdc.gov/ncbddd/hemophilia/communitycounts/data-viz.html>.

²⁵⁰ <http://www.cdc.gov/ncbddd/thalassemia/index.html>.

with underlying health conditions, such as heart disease, diabetes, and severe iron overload, people with thalassemia face heightened risk of severe illness from COVID-19. CDC is working to share credible information about the safety and stability of the nation’s blood supply during the SARS-CoV-2 pandemic, as well as the importance of transfusion treatments for people with hemoglobinopathies like thalassemia.

In 2020, CDC continued funding for a 5-year Transfusions Complications Monitoring project to continue effort to learn more about treatment complications associated with blood transfusions for thalassemia and SCD. The goal of the project is to improve access to, coordination of, and continuity of health care for people with thalassemia or SCD, leading to fewer transfusion-related complications and improved quality and increased length of life.

In FY 2021, CDC funds awardees to improve understanding of the prevalence of thalassemia, evidence- or consensus-based guidelines on management of transfusions for thalassemia and sickle cell disease, and how infectious agents play a role in blood transfusion complications in thalassemia and sickle cell disease.

In FY 2022, CDC will continue efforts to learn more about treatment complications associated with blood transfusions for thalassemia, leading to fewer transfusion-related complications and improved quality and increased length of life. Funding will also support development of communication strategies and educational tools that improve consumer and provider awareness and knowledge about thalassemia complication prevention and treatment practices.

Venous Thromboembolism

CDC works to prevent medical complications, such as venous thromboembolism (VTE), which are blood clots in the veins. VTE affects as many as 900,000 American patients each year; one in 10 of these patients die from VTE, many without ever being diagnosed.²⁵¹ VTE costs our health care system an estimated \$10 billion annually and many of these events are preventable.²⁵² CDC’s studies found that current estimated incidence rates of VTE appear to be significantly higher than previously estimated including a marked increase among Black populations.

COVID-19 outcomes linked to abnormal blood clot formation resulting in adverse medical conditions such as pulmonary embolism (a blood clot in the lungs), organ damage, and death, underscore the importance of understanding and monitoring VTE occurrence. CDC received funding through the Coronavirus Aid, Relief, and Economic Security (CARES) Act of 2020 to work with partners to collect data on people with coagulopathies (a disturbance in how the body coagulates or clots blood), a severe complication of COVID-19. Using tools like IDEAL-X, an open source information extraction system, surveillance of coagulopathy will help identify risk factors and disseminate credible information from findings to benefit all people.²⁵³

Half of all VTE events are health care associated. CDC is uniquely positioned to study an approach to reducing the number of VTEs occurring in hospitals today. Working with partners, CDC continues to learn more about care-based interventions and electronic medical record surveillance systems.

CDC made the following important contributions towards decreasing the impact of VTE:

- CDC funded the national campaign [Stop the Clot, Spread the Word](https://www.stoptheclot.org/spreadtheword/)²⁵⁴ to promote the awareness of the signs, symptoms, and risk factors for VTE which achieved over 800 million media impressions and an advertising value-added return on investment of up to 178%. The campaign launched content on

²⁵¹ <http://www.sciencedirect.com/science/article/pii/S0749379709009465?via%3Dihub>.

²⁵² <http://www.sciencedirect.com/science/article/pii/S0749379709009465?via%3Dihub>.

²⁵³ <https://ashpublications.org/blood/article/135/23/2033/454646/COVID-19-and-its-implications-for-thrombosis-and>.

²⁵⁴ <https://www.stoptheclot.org/spreadtheword/>.

general information about blood clots and the increased risks related to hospitalization, women who are pregnant or recently gave birth, and people with cancer.

- VTE online curriculum Stop the Clot - What Every Healthcare Professional Should Know²⁵⁵ was accredited in 2018 and has educated more than 935 providers.
- CDC collaborated with Emory University to develop and use IDEAL-X, a novel open source information extraction (IE) system, to evaluate its accuracy for identifying VTE diagnosis directly from electronic health records. [Findings from this work](#)²⁵⁶ revealed that IDEAL-X correctly identified 97.2% of cases positive for VTE and 99.3% of cases negative for VTE when compared with manual review. CDC has since scaled-up the IE system from one hospital to hospital networks in two counties.

In FY 2020, CDC focused on building an inventory of hospital associated VTE prevention best practices by developing a survey of VTE prevention practices of US hospitals and by assessing novel IE systems at other healthcare institutions. In FY 2021, CDC continues this work in addition to new efforts to address knowledge gaps and improve health care professionals' understanding about the incidence of coagulopathies among patients affected by COVID-19 through the development of an online data registry with the National Blood Clot Alliance Medical and Scientific Advisory Board and the compilation and dissemination of its findings.

In FY 2022, CDC will continue to build the inventory for best practices in VTE prevention and work closely with partner institutions to improve and tailor pilot VTE surveillance mechanisms at healthcare institutions, inclusive of both IE and VTE risk assessment.

²⁵⁵ <https://www.cdc.gov/ncbddd/dvt/training.html#:~:text=Stop%20the%20Clot%C2%AE%3A%20What%20Every%20Healthcare%20Professional%20Should%20patients%20who%20have%20blood%20clots%20and%20clotting%20disorders.>

²⁵⁶ [https://pubmed.ncbi.nlm.nih.gov/29087984/.](https://pubmed.ncbi.nlm.nih.gov/29087984/)

Disabilities and Health

Approximately 61 million Americans live with a disability.²⁵⁷ Disabilities may include difficulty with movement, hearing, seeing, communicating, concentrating, remembering, caring for oneself, or making decisions. The annual health care costs associated with disabilities are nearly \$400 billion—over 25 percent of all health care expenditures for adults residing in the United States.²⁵⁸ Data indicate that as a group, people with disabilities are much more likely to be physically inactive, to smoke cigarettes, be overweight, have heart disease or diabetes, and are less likely to receive preventive health care services.^{259,260} CDC aims to foster access to preventive services so that people with disabilities can achieve optimal health and participate fully in their community. CDC has issued specific and relevant guidance for people with disabilities on how to stay well during the COVID-19 pandemic. For example, CDC has developed COVID-19 materials using a variety of communication formats, including American Sign Language, to help ensure that all people with disabilities can access and understand critical COVID-19 messages.

Health Promotion for People with Disabilities

CDC funds two National Centers on Health Promotion for People with Disabilities²⁶¹—the National Center on Health, Physical Activity and Disability (NCHPAD) and Special Olympics—to work with people with mobility limitations and intellectual disabilities (ID). These national organizations support the development, implementation, evaluation, and dissemination of non-research activities aimed at: raising knowledge and awareness of the health needs of people with mobility limitations and/or ID; developing and disseminating health promotion models, strategies, tools, and health promotion materials; providing training and education to health care professionals; and promoting the adoption of healthy behaviors aimed at reducing health disparities for people with mobility limitations and ID. Most recently, CDC is working with these and other partners on ensuring important information about the COVID-19 pandemic in reaching people with disabilities.

Improving the Health of People with Mobility Limitations

CDC's partnership with NCHPAD primarily focuses on reducing health disparities and improving the health and quality of life of people with disabilities by adapting programs, policies, systems, and environments to be more accessible and inclusive for people with disabilities; disseminating health promotion and training tools/toolkits and adapted evidence-based interventions in physical activity, nutrition, and wellness; and implementing inclusive health programs that serve people with disabilities. Although public health interventions exist for the general public, there are few tailored for people with disabilities across a spectrum of disability. CDC's partnership with NCHPAD aims to address this inequity.

CDC and NCHPAD have shown their dedication to supporting people with disabilities in the following ways:

- Expanded and strengthened strategic partnerships to allow for a greater focus on physical fitness and nutritional habits for children and youth with disabilities nationwide.
- Supported scaling up of the National Diabetes Prevention Program (NDPP) in 17 underserved counties in Pennsylvania, Florida, New York and Alaska to reach people with disabilities. This work included the

²⁵⁷ Okoro CA, Hollis ND, Cyrus AC, Griffin-Blake S. Prevalence of Disabilities and Health Care Access by Disability Status and Type Among Adults — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2018;67:882–887. DOI: <http://dx.doi.org/10.15585/mmwr.mm6732a3>.

²⁵⁸ Anderson, W. L., Armour, B. S., Finkelstein, E. A., & Wiener, J. M. (2010). Estimates of State-Level Health-Care Expenditures Associated with Disability. *Public Health Reports*, 125(1), 44–51.

²⁵⁹ Krahn GL et al. Persons with disabilities as an unrecognized health disparity population. *Am J Public Health*. 2015;105:S198–S206. doi: 10.2105/AJPH.2014.302182.

²⁶⁰ U.S. Department of Health and Human Services. The Surgeon General's Call To Action To Improve the Health and Wellness of Persons with Disabilities. US Department of Health and Human Services, Office of the Surgeon General, 2005.

²⁶¹ <https://www.cdc.gov/ncbddd/disabilityandhealth/programs.html#:~:text=CDC%27s%20Disability%20and%20Health%20Promotion,State%2Dbased%20Public%20Health%20Programs>.

creation of a toolkit on how to implement an inclusive NDPP and the use of GIS mapping to help states identify disability partners.

- Conducted 64 trainings across 27 states on topics ranging from general disability education, inclusive tools, inclusive fitness training and physical education, to diabetes management and prevention.

In FY 2022, CDC will continue to support work to improve the mental and physical health of Americans with mobility limitations across the lifespan through evidence-based health promotion programs.

Improving the Health of People with Intellectual Disabilities

Special Olympics provides year-round sports training and athletic competition in a variety of Olympic-type sports for children and adults with intellectual disabilities. CDC funds the Special Olympics Healthy Athletes® and Healthy Communities Programs to provide Special Olympics athletes with increased access to free health screenings, education, services, supports, and referrals for follow-up health care as well as year-round health promotion and disease prevention programs.

CDC's partnership with Special Olympics has focused on reducing barriers to inclusive health services and programs, challenge misperceptions, eliminate stigma, and improve the health of people with ID by

- Training health care professionals to conduct and support Healthy Athletes® screening events throughout the United States.
- Increasing the availability of data during and after screening events using digital health technology to evaluate effectiveness and provide critical health information on this population.
- Providing disability awareness training to health care professionals, community wellness partners, schools, and other collaborators who have limited or no experience working with people with intellectual disabilities.

CDC and Special Olympics have shown their dedication to supporting people with ID in the following ways:

- Launched an e-learning platform in FY 2020 to train clinical directors, coaches, and health care providers on a variety of health and safety topics for people with ID.
- Disseminated over 600 communications resources, including peer-reviewed publications and presentations, traditional and social media, and video productions, through Special Olympics' Center
- Applied digital technology enhancements to the Healthy Athletes Software system to improve the quantity and quality of data collected, to strengthen the ability of Special Olympics program staff and clinicians to identify and follow-up with athletes who need post-event care, and to improve post-event analytic capabilities
- Conducted a total of 440 Healthy Athletes events and 47,227 health screenings in FY 2020 throughout the U.S. and added 117 partners to the referral network. Additionally, 124 community wellness partners were added and 4,164 people with ID participated in year-round wellness programming activities.
- Completed 205 trainings for health advocates in FY 2020, bringing the total number of trainings to 23,902. Additionally, 684 trainings were conducted for health professionals and students, resulting in the total number of health professionals and students trained by Special Olympics to work with people with ID to 127,500.
- In FY 2022, CDC will continue to work with Special Olympics to screen and connect athletes with health care resources within their communities and to promote best practices for health promotion and follow-up care that is in alignment with best practices during the COVID-19 pandemic.

State Disability and Health Programs

CDC is a leader in the development, use, and improvement of public health surveillance systems that characterize the health of people with disabilities. CDC's Disability and Health Data System (DHDS)²⁶² is an online interactive source of state, regional, and national data on the health and demographics of adults with disabilities. States rely on this information to understand the health status of their population with disabilities and to tailor health protection programs for this population. The type of information that states can find on DHDS includes disability status and approximately 30 measures of health (e.g., smoking, physical activity, obesity, hypertension, heart disease, and diabetes). While data in DHDS currently does not cover the time period during the COVID-19 pandemic, states and local jurisdictions can leverage this information to inform policies and practices that address health disparities and support people with disabilities during the pandemic. CDC is using the existing dataset to drive programmatic decisions and inform strategies for a Medicaid analysis project with NACCHO and ASTHO that is funded by the CARES Act.

In FY 2020, CDC updated DHDS to include the latest 2018 Behavioral Risk Factor Surveillance System (BRFSS) data on U.S. adults with disabilities, including cognitive, mobility, vision, self-care, independent living, and hearing. CDC also regularly updates and makes publicly available state fact sheets²⁶³ that provide an overview of disability in each state compared to national estimates.

CDC currently invests in State Disability and Health Programs to improve health outcomes among people with mobility limitations and intellectual disabilities. These states are reaching 3.2 million people nationwide through the implementation of 39 evidence-based strategies²⁶⁴ and interventions focusing on physical activity, nutrition, diabetes, and other health topics significant for this population. The state programs strengthen partnerships and design, create, and implement programs to improve the health of people with disabilities in their states.

In FY 2021, CDC continued to invest in state, territorial, and/or tribal organizations to identify and address unmet preventive health care needs of people with intellectual and developmental disabilities and people with mobility limitations.

CDC also worked to address the needs of people with disabilities in COVID-19 preparedness, planning, mitigation, and recovery efforts in the United States. Efforts included embedding disability champions in state and local health departments' public health emergency preparedness and response programs to ensure issues impacting people with disabilities are considered in planning and response efforts. CDC examined the impact of COVID-19 on people with disabilities, specifically to identify:

1. Changes in patterns of health care access and service use over time, including uptake of telemedicine and telemental health, and
2. Changes in new conditions acquired during the COVID-19 pandemic.

Finally, CDC supports a technical assistance and training center to disseminate COVID-19 emergency preparedness and response resources, along with the development of a central, online repository of practice-based materials on emergency preparedness tailored for people with disabilities, caregivers, as well as the emergency and health care providers who serve them.

In FY 2022, CDC will continue to provide subject matter expertise to assist federal, state, tribal, local, and nonprofit organization to identify unmet preventive health care needs of people with disabilities—and to adapt and improve public health programs and services to be more inclusive of people with disabilities, especially during the COVID-19 pandemic. CDC will also continue to collaborate with its partners to reduce health

²⁶² <https://www.cdc.gov/ncbddd/disabilityandhealth/dhds/index.html>.

²⁶³ <https://www.cdc.gov/ncbddd/disabilityandhealth/impacts/index.html>.

²⁶⁴ <https://www.cdc.gov/ncbddd/disabilityandhealth/programs.html>.

disparities of people with disabilities by addressing stigma and barriers commonly experienced by people with disability as well as including them in public health surveys, public health promotion and disease prevention programs, and accessible health care services. Working with partners, CDC will facilitate engagement with high-quality preventive health care, adoption of healthy lifestyles behaviors, and early identification, management, and control of chronic diseases and mental health conditions.

Muscular Dystrophy

[Muscular dystrophies \(MDs\)](#)²⁶⁵ are a group of genetic muscle diseases, that, over time, cause muscle weakness and wasting, leading to decreased mobility and make the tasks of daily living difficult. There are many muscular dystrophies that vary in age of onset, severity, and patterns of inheritance.²⁶⁶ CDC studies the nine major types of muscular dystrophy, including Duchenne muscular dystrophy (DMD).

CDC funds and manages the only population-based surveillance system for muscular dystrophy in the United States, the [Muscular Dystrophy Surveillance Tracking and Research Network \(MD STARnet\)](#).²⁶⁷ MD STARnet provides accurate estimates of the prevalence of Duchenne and Becker MD (DBMD), and describes delays in diagnosis and characterizes the types of treatments received by this population.

CDC's investments led to advancements in understanding health and health care outcomes of people living with muscular dystrophies:

- The estimated prevalence of DBMD as 1 in every 7,250 males aged 5–24 years.²⁶⁸
- CDC described the sociodemographic, clinical, and mortality characteristics of individuals with seven types of MD (myotonic, facioscapulohumeral, limb-girdle, congenital, oculopharyngeal, Emery-Dreifuss, and distal).^{269,270}
- Providers can now use CDC-created growth charts for boys with DBMD who are still walking and who have or have not been treated with corticosteroids.^{271,272}
- MD STARnet data was used to study associations between genetic mutation type and loss of ambulation among males with DMD, finding that mutation type did not predict time to loss of ambulation. Data also showed that two deletion mutations were associated with delayed loss of ambulation. Characterizing the genotype/phenotype relationship may inform clinical trials that seek to find treatments.²⁷³
- CDC documented the most common unmet needs among caregivers of males with DBMD including information on jobs/future planning, transition to independent adult life, and funding for vehicle modifications.²⁷⁴

²⁶⁵ <https://www.cdc.gov/ncbddd/muscular dystrophy/index.html>.

²⁶⁶ Kennison A, Vatave A, Finkel R. Widening gap in age of muscular dystrophy-associated death between blacks and whites, 1986-2005. *Neurology* 2010;75:982-989.

²⁶⁷ <https://www.cdc.gov/ncbddd/muscular dystrophy/research.html>.

²⁶⁸ Romitti PA, Zhu Y, Puzhankara S, James KA, Nabukera SK, Zamba GK, Ciafaloni E, Cunniff C, Druschel CM, Mathews KD, Matthews DJ, Meaney FJ, Andrews JG, Conway KM, Fox DJ, Street N, Adams MM, Bolen J; MD STARnet. Prevalence of Duchenne and Becker muscular dystrophies in the United States. *Pediatrics*. 2015 Mar;135(3): 513-21.

²⁶⁹ Wallace B, Smith KT, Thomas S, et al. Characterization of individuals with selected muscular dystrophies from the expanded pilot of the Muscular Dystrophy Surveillance, Tracking and Research Network (MD STARnet) in the United States [published online ahead of print, 2020 Jul 24]. *Birth Defects Res*. 2020;10.1002/bdr2.1764. doi:10.1002/bdr2.1764.

²⁷⁰ Do TN, Street N, Donnelly J, Adams MM, Cunniff C, Fox DJ, Weinert RO, Oleszek J, Romitti PA, Westfield CP, Bolen J; Muscular Dystrophy Surveillance, Tracking, and Research Network (MD STARnet). Muscular Dystrophy Surveillance, Tracking, and Research Network pilot: Population-based surveillance of major muscular dystrophies at four U.S. sites, 2007-2011. *Birth Defects Res*. 2018 Nov 15;110(19):1404-1411.

²⁷¹ West NA, Yang ML, Weitzenkamp DA, et al. Patterns of growth in ambulatory males with Duchenne muscular dystrophy. *J Pediatr*. 2013;163(6):1759-1763.e1. doi:10.1016/j.jpeds.2013.08.004.

²⁷² Lamb MM, West NA, Ouyang L, et al. Corticosteroid Treatment and Growth Patterns in Ambulatory Males with Duchenne Muscular Dystrophy. *J Pediatr*. 2016;173:207-213.e3. doi:10.1016/j.jpeds.2016.02.067.

²⁷³ Haber G, Conway KM, Paramsothy P, Roy A, Rogers H, Ling X, Kozauer N, Street N, Romitti PA, Fox DJ, Phan HC. Association of genetic mutations and loss of ambulation in childhood-onset dystrophinopathy. *Muscle & Nerve*. 2020 Nov 5.

²⁷⁴ Conway KM, Eichinger K, Trout C, et al. Needs management in families affected by childhood-onset dystrophinopathies. *SAGE Open Med*. 2019;7:2050312119834470. Published 2019 Mar 2. doi:10.1177/2050312119834470.

CDC is committed to improving the standard of care for people living with muscular dystrophy. CDC's Duchenne Muscular Dystrophy Care Considerations webpage contains tools and resources for clinicians and people with DMD and their families.

In FY 2022, CDC will continue collecting clinical and surveillance data in seven MD STARnet sites to determine prevalence, mortality, healthcare service use, disparities, comparison of actual to recommended care, disease progression, and association of treatment on outcomes for eight MD types: Duchenne, Becker, myotonic, facioscapulohumeral, Emery-Dreifuss, limb-girdle, distal, and congenital muscular dystrophies.

Spina Bifida

Approximately 1,400 babies born in the United States each year are affected by spina bifida, a complex, disabling condition that affects the spine and is usually apparent at birth.²⁷⁵ Some risk factors are known (e.g., folic acid insufficiency, maternal diabetes, pre-pregnancy obesity), and we are learning more about other possible risk factors. Spina bifida, a neural tube defect (NTD), has a tremendous impact on individuals and families, including high health care costs associated with frequent surgeries and hospitalizations. The lifetime direct costs to treat just one child with spina bifida are estimated at \$790,000.²⁷⁶

CDC also works to advance the science and improve the understanding of the impact of spina bifida. In 2008, CDC established the [National Spina Bifida Patient Registry \(NSBPR\)](#),²⁷⁷ the only surveillance system in the United States gathering critical information on over 10,000 patients living with spina bifida, including risk factors, health outcomes, and treatment options. CDC's NSBPR is viewed as a model for other public health surveillance systems monitoring rare diseases. With the \$1 million increase in appropriations received in FY 2021, CDC will continue to explore the transitional and adult care needs of people living with Spina Bifida and support the NSBPR to guide the healthcare community in best treatment options.

CDC investments have led to enormous successes in preventing spina bifida and to improvements in the lives of Americans living with spina bifida. These include:

Retaining renal function is an important goal in the treatment of spina bifida patients, and is the focus of the CDC sponsored [Urologic Management to Preserve Initial Renal Function \(UMPIRE\) Protocol](#).²⁷⁸ Data from 5,445 patients across 23 clinics showed that only 62% of patients were receiving both renal ultrasound and serum creatine tests, which are essential tests in kidney function surveillance. This information points to the need for standardized kidney surveillance protocols, like the UMPIRE Protocol.

By extending the current UMPIRE protocol that focuses on 0-5-year-olds living with spina bifida to age 10, the CDC will be able to evaluate outcomes such as new renal scarring, renal sufficiency, and urodynamic changes.

In 2020 the American Academy of Pediatrics (AAP), with support from CDC, completed a spina bifida quality improvement project with 9 adult/pediatric clinic team pairs developing best practices for transitioning pediatric patients to adult spina bifida clinics and improving quality of care. A second cohort of clinic pairs will be followed in 2021.

In FY 2022, CDC will continue to learn about the neurological development of children with spina bifida and the health status of all people living with spina bifida through the NSBPR and to continue to develop the UMPIRE Protocol for children 0-10 years of age to increase optimal urinary function.

²⁷⁵ <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>.

²⁷⁶ <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6401a2.htm>.

²⁷⁷ <https://www.cdc.gov/ncbddd/spinabifida/nsbprregistry.html>.

²⁷⁸ <https://www.cdc.gov/ncbddd/spinabifida/umfire.html>.

Congenital Heart Defects

[Congenital heart defects \(CHDs\)](#)²⁷⁹ affect the structure of the heart and the way the heart functions. Collectively, CHDs are the most common type of birth defect. Thanks to advancements in medical care and treatment, infants with CHDs are living longer and healthier lives. However, as children with CHDs live into adulthood, they face new issues such as transition from pediatric to adult cardiac care, increased risk of pregnancy complications among women, and longer-term comorbidities.

Many individuals with CHD fall out of cardiology care, especially during adolescence and young adulthood. CDC scientists have found that while many parents had been told by a provider about their adolescent's need to transition to adult specialty cardiac care, over 90% reported concerns about their child's transition to adult care, including replacing the strong relationships with pediatric providers, locating an appropriate adult provider, and accessing adult health insurance coverage.²⁸⁰

CDC scientists have also found that during pregnancy, individuals with CHD have increased risk of obstetric, cardiac, and other adverse conditions and outcomes.^{281,282} However, only 56% received a comprehensive echocardiogram during pregnancy to evaluate their cardiac health, which is recommended by the American Heart Association and American College of Obstetrics and Gynecology. CDC authors also noted that 4% of individuals with CHD took potentially teratogenic cardiac related medications during pregnancy, demonstrating the need for preconception care.²⁸³

People living with CHDs are also likely to have complex health care needs. Based on a novel surveillance project of adults with CHD across three U.S. sites, CDC scientists found that the prevalence of adults receiving healthcare for CHDs varied greatly by geographic location, from less than 1 in 1,000 adults in New York to 10 per 1,000 adults in Massachusetts. They also found that up to 20% of adults had severe heart defects and more than half had one or more additional heart problems.²⁸⁴

CDC also leads efforts to answer questions about health care utilization and barriers to care. CDC has documented some of the barriers to life-saving care, including healthcare costs²⁸⁵, distance to health care providers²⁸⁶, and family stress.^{287,288,289}

In FY 2020, CDC funded seven sites for the five-year Congenital Heart Defects Surveillance Across Time And Regions (CHD STAR)²⁹⁰ project to support population-based surveillance of children, adolescents, and adults

²⁷⁹ <https://www.cdc.gov/ncbddd/heartdefects/index.html>.

²⁸⁰ Gaydos LM, Sommerhalter K, Raskind-Hood C, Fapo O, Lui G, Hsu D, Van Zutphen A, Glidewell J, Farr S, III FH, Hoffman T. Health Care Transition Perceptions Among Parents of Adolescents with Congenital Heart Defects in Georgia and New York. *Pediatric Cardiology*. 2020 Jun 4.

²⁸¹ Raskind-Hood C, Saraf A, Riehle-Colarusso T, Glidewell J, Gurtvitz M, Dunn JE, Lui GK, Van Zutphen A, McGarry C, Hogue CJ, Hoffman T, Rodriguez III FH, Book WM. Assessing pregnancy, gestational complications, and co-morbidities in women with congenital heart defects (data from ICD-9-CM codes in 3 US surveillance sites). *The American Journal of Cardiology*. 2020 March 1; 125 (5): 812-819.

²⁸² Downing KF, Tepper NK, Simeone RM, Ailes EC, Gurtvitz M, Boulet SL, Honein MA, Howards PP, Valente AM, Farr SL. Adverse pregnancy conditions among privately insured women with and without congenital heart defects. *Circulation: Cardiovascular Quality and Outcomes*. 2020 Jun 8;13(6): 119.

²⁸³ Farr SL, Downing KF, Ailes EC, Gurtvitz M, Koontz G, Tran EL, Alverson CJ, Oster ME. Receipt of American Heart Association–Recommended Preconception Health Care Among Privately Insured Women With Congenital Heart Defects, 2007–2013. *Journal of the American Heart Association*. 2019 Sep 17;8(18):e013608.

²⁸⁴ Gurtvitz M, Dunn JE, Bhatt A, Book WM, Glidewell J, Hogue C, Lin AE, Lui G, McGarry C, Raskind-Hood C, Van Zutphen A. Characteristics of adults with congenital heart defects in the United States. *Journal of the American College of Cardiology*. 2020 Jul 14;76(2):175-82.

²⁸⁵ Hsu WH, Sommerhalter KM, McGarry CE, Farr SL, Downing KF, Lui GK, Zaidi AN, Hsu DT, Van Zutphen AR. Inpatient admissions and costs for adolescents and young adults with congenital heart defects in New York, 2009–2013. *Birth Defects Research*. 2020 Sept 29.

²⁸⁶ Sommerhalter KM, Insaf TZ, Akkaya-Hocagil T, McGarry CE, Farr SL, Downing KF, Lui GK, Zaidi AN, Van Zutphen AR. Proximity to pediatric cardiac surgical care among adolescents with congenital heart defects in 11 New York counties. *Birth Defects Research*. 2017 Nov 1;109(18):1494-503.

²⁸⁷ McClung N, Glidewell J, Farr SL. Financial burdens and mental health needs in families of children with congenital heart disease. *Congenit Heart Dis*. 2018 Apr 6. doi: 10.1111/chd.12605. [Epub ahead of print].

²⁸⁸ Downing KF, Oster ME, Farr SL. Preparing adolescents with heart problems for transition to adult care, 2009–2010 National Survey of Children with Special Health Care Needs. *Congenit Heart Dis*. 2017 Jul;12(4):497-506. doi: 10.1111/chd.12476. Epub 2017 May 19.

²⁸⁹ Farr SL, Oster ME, Simeone RM, Gilboa SM, Honein MA. Limitations, depressive symptoms, and quality of life among a population-based sample of young adults with congenital heart defects. *Birth Defects Res A Clin Mol Teratol*. 2016 Jul;106(7):580-6. doi: 10.1002/bdra.23498. Epub 2016 Mar 17

²⁹⁰ <https://www.cdc.gov/ncbddd/heartdefects/research.html>.

with heart defects. Two state health departments and five academic institutions across the United States are collecting data to count the number of people living with CHDs and analyze their health needs. This information aims to improve the quality of care received by children, adolescents, and adults with CHDs and enhance their quality and length of life.

In FY 2020, CDC also funded the American Academy of Pediatrics for *Awareness of Congenital Heart Defects Among Healthcare Clinicians*, a new project to increase awareness among primary care and urgent care providers of the need for individuals with CHD to receive lifelong care and ways to identify and refer individuals with CHD to appropriate specialty cardiac care. In FY 2021, CDC will fund up to 12 states to examine mode and timing of critical CHD detection in infants, including newborn screening. CDC will continue to explore ways to improve detection and screening for CHD to decrease infant deaths and to better understand the longer-term outcomes for children identified prenatally and through this newborn screening.

With an additional \$1 million received in FY 2021, CDC is further implementing the screening, surveillance, research, and awareness activities authorized by the Congenital Heart Futures Reauthorization Act (P.L. 115-342).

In FY 2022, CDC will support:

- population-based surveillance of children, adolescents, and adults with CHDs through CHD STAR;
- activities to increase awareness among primary care and urgent care providers of the needs for individuals with CHD to receive lifelong care; and,
- states to examine the mode and timing of critical CHD detection in infants, including newborn screening.

State table: Early Hearing Detection and Intervention^{1, 2}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$160,000	\$160,000	\$160,000	TBD
Alaska	\$160,000	\$160,000	\$160,000	TBD
Arizona	-	-	-	TBD
Arkansas	\$160,000	\$160,000	\$160,000	TBD
California	-	-	-	-
Colorado	-	-	-	-
Connecticut	-	-	-	-
Delaware	-	-	-	-
Florida	\$160,000	\$160,000	\$160,000	TBD
Georgia	\$160,000	\$160,000	\$160,000	TBD
Hawaii	\$160,000	\$160,000	\$160,000	TBD
Idaho	\$160,000	\$160,000	\$160,000	TBD
Illinois	\$160,000	\$160,000	\$160,000	TBD
Indiana	\$160,000	\$160,000	\$160,000	TBD
Iowa	\$160,000	\$160,000	\$160,000	TBD
Kansas	\$160,000	\$160,000	\$160,000	TBD
Kentucky	\$160,000	\$160,000	\$160,000	TBD
Louisiana	\$160,000	\$160,000	\$160,000	TBD
Maine	\$160,000	\$160,000	\$160,000	TBD
Maryland	\$160,000	\$160,000	\$160,000	TBD
Massachusetts	\$160,000	\$160,000	\$160,000	TBD
Michigan	\$160,000	\$160,000	\$160,000	TBD
Minnesota	\$160,000	\$160,000	\$160,000	TBD
Mississippi	-	-	-	-
Missouri	\$160,000	\$160,000	\$160,000	TBD
Montana	-	-	-	-
Nebraska	\$160,000	\$160,000	\$160,000	TBD
Nevada	\$160,000	\$160,000	\$160,000	TBD
New Hampshire	\$160,000	\$160,000	\$160,000	TBD
New Jersey	\$160,000	\$160,000	\$160,000	TBD
New Mexico	\$160,000	\$160,000	\$160,000	TBD
New York	\$160,000	\$160,000	\$160,000	TBD
North Carolina	\$150,000	\$150,000	\$150,000	TBD
North Dakota	\$160,000	\$160,000	\$160,000	TBD
Ohio	-	-	-	-
Oklahoma	\$160,000	\$160,000	\$160,000	TBD
Oregon	\$160,000	\$160,000	\$160,000	TBD
Pennsylvania	-	-	-	-
Rhode Island	\$160,000	\$160,000	\$160,000	TBD
South Carolina	\$160,000	\$160,000	\$160,000	TBD
South Dakota	-	-	-	-
Tennessee	\$160,000	\$160,000	\$160,000	TBD
Texas	\$160,000	\$160,000	\$160,000	TBD
Utah	\$160,000	\$160,000	\$160,000	TBD
Vermont	\$160,000	\$160,000	\$160,000	TBD
Virginia	\$160,000	\$160,000	\$160,000	TBD
Washington	\$160,000	\$160,000	\$160,000	TBD
Washington, D.C.	-	-	-	-
West Virginia	-	-	-	-
Wisconsin	-	-	-	-

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Wyoming	\$160,000	\$160,000	\$160,000	TBD
Territories				
America Samoa	-	-	-	-
Guam	-	-	-	-
Marshall Islands	-	-	-	-
Micronesia	-	-	-	-
Northern Marianas	-	-	-	-
Puerto Rico	\$160,000	\$160,000	\$160,000	TBD
Palau	-	-	-	-
Virgin Islands	-	-	-	-
Subtotal, States	\$6,070,000	\$6,070,000	\$6,070,000	TBD
Subtotal, Territories	\$160,000	\$160,000	\$160,000	TBD
Total Resources	\$6,230,000	\$6,230,000	\$6,230,000	TBD

¹This State Table is a snapshot of selected programs that fund states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

²CFDA number 93.314

State Table: Disability and Health Grants^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$300,000	\$300,000	\$300,000	TBD
Alaska	-	-	-	-
Arizona	-	-	-	-
Arkansas	\$439,943	\$439,943	\$439,943	TBD
California	-	-	-	-
Colorado	-	-	-	-
Connecticut	-	-	-	-
Delaware	-	-	-	-
Florida	\$300,000	\$300,000	\$300,000	TBD
Georgia	-	-	-	-
Hawaii	-	-	-	-
Idaho	-	-	-	-
Illinois	-	-	-	-
Indiana	-	-	-	-
Iowa	\$390,000	\$390,000	\$390,000	TBD
Kansas	\$389,995	\$389,995	\$389,995	TBD
Kentucky	\$165,000	\$165,000	\$165,000	TBD
Louisiana	-	-	-	-
Maine	-	-	-	-
Maryland	\$165,000	\$165,000	\$165,000	TBD
Massachusetts	\$439,588	\$439,588	\$439,588	TBD
Michigan	\$390,000	\$390,000	\$390,000	TBD
Minnesota	\$300,000	\$300,000	\$300,000	TBD
Mississippi	-	-	-	-
Missouri	\$165,000	\$165,000	\$165,000	TBD
Montana	\$390,000	\$390,000	\$390,000	TBD
Nebraska	-	-	-	-
Nevada	-	-	-	-
New Hampshire	\$440,000	\$440,000	\$440,000	TBD
New Jersey	-	-	-	-
New Mexico	-	-	-	-
New York	\$440,000	\$440,000	\$440,000	TBD
North Carolina	-	-	-	-
North Dakota	-	-	-	-
Ohio	\$300,000	\$300,000	\$300,000	TBD
Oklahoma	-	-	-	-
Oregon	\$440,000	\$440,000	\$440,000	TBD
Pennsylvania	-	-	-	-
Rhode Island	-	-	-	-
South Carolina	\$440,000	\$440,000	\$440,000	TBD
South Dakota	-	-	-	-
Tennessee	-	-	-	-
Texas	-	-	-	-
Utah	\$165,000	\$165,000	\$165,000	TBD
Vermont	\$165,000	\$165,000	\$165,000	TBD
Virginia	-	-	-	-
Washington	-	-	-	-
West Virginia	-	-	-	-
Wisconsin	-	-	-	-

FY 2022 Congressional Justification

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Wyoming	-	-	-	-
Territories				
America Samoa	-	-	-	-
Guam	-	-	-	-
Marshall Islands	-	-	-	-
Micronesia	-	-	-	-
Northern Marianas	-	-	-	-
Puerto Rico	-	-	-	-
Palau	-	-	-	-
Virgin Islands	-	-	-	-
Subtotal, States	\$6,224,526	\$6,224,526	\$6,224,526	TBD
Subtotal, Territories	\$0	\$0	\$0	TBD
Total Resources	\$6,224,526	\$6,224,526	\$6,224,526	TBD

¹This State Table is a snapshot of selected programs that fund states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

² <http://www.cdc.gov/ncbddd/disabilityandhealth/programs.html>

³ CFDA number 93.184

PUBLIC HEALTH SCIENTIFIC SERVICES

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$578.497	\$591.997	\$609.997	+\$18.000
PHS Evaluation Transfer	\$0	\$0	\$132.000	+\$132.000
Total Request	\$578.497	\$591.997	\$741.997	+\$150.000
FTEs	1,412	1,607	1,637	+30
-- Health Statistics ¹	\$174.397	\$175.397	\$175.397	\$0
-- Health Statistics - BA	\$174.397	\$175.397	\$43.397	-\$133.000
-- Health Statistics - PHS Evaluation Transfer	\$0	\$0	\$132.000	+\$132.000
-- Surveillance, Epidemiology, and Informatics ¹	\$353.100	\$360.600	\$460.600	+\$100.000
-- BioSense (non-add)	\$23.000	\$23.000	\$23.000	\$0
-- Public Health Data Modernization Initiative (non-add)	\$50.000	\$50.000	\$150.000	+\$100.000
-- Public Health Workforce	\$51.000	\$56.000	\$106.000	+\$50.000

¹ FY 2020 Final Level is comparably adjusted to reflect Congressionally accepted budget alignments between accounts.

Enabling Legislation Citation: PHSA § 241, PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 317, PHSA § 317F*, PHSA § 317G, PHSA § 318*, PHSA § 319, PHSA § 319A*, PHSA § 319D*, PHSA § 353, PHSA § 391, PHSA § 399S-1*, PHSA § 399V*, PHSA § 768, PHSA § 778*, PHSA § 1102, PHSA § 2315, PHSA § 2341, E-Government Act of 2002 (P. L. 107-347), Food, Conservation, and Energy Act of 2008 § 4403 (7 U.S.C. 5311a) , Intelligence Reform and Terrorism Prevention Act of 2004 § 7211*, National Nutrition Monitoring and Related Research Act of 1990 (P. L. 101-445 § 5341), Title V (44 U.S.C. 3501 note).

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural, Competitive Grants/Cooperative Agreements, Contracts

CDC’s Public Health Scientific Services (PHSS) budget supports CDC to lead, promote, and facilitate science standards and policies to protect the health of Americans here and abroad by:

- Providing leadership and training for a competent, sustainable, and empowered public health workforce
- Modernizing public health surveillance systems and infrastructure
- Improving access to information needed by public health professionals who monitor and respond to disease outbreaks and other threats

CDC’s FY 2022 request of **\$741,997,000** for Public Health Scientific Services (PHSS), including **\$132,000,000** in PHS Evaluation Transfer, is **\$150,000,000** above the FY 2021 Enacted level. This total funding level includes **\$150,000,000** to support the Public Health Data Modernization Initiative, **\$100,000,000** above the FY 2021 Enacted level. This initiative is a multi-year strategy transforming how CDC and State, Territorial, and local health departments collect and use data to drive action in real time—efficiently, flexibly, rapidly and with enhanced impact.

PUBLIC HEALTH SCIENTIFIC SERVICES

BY THE NUMBERS

- **48 hours**—Average frequency that CDC's *Morbidity and Mortality Weekly Reports (MMWR)* published a new COVID-19 report since the declaration of a public health emergency, a total of 193 as of January 21, 2021.
- **11-fold**—Increase in the number of Laboratory Outreach Communication System subscribers since the onset of the COVID-19 pandemic, as clinical laboratories sought access to CDC resources and technical support.
- **330 million**—The U.S. population covered by the National Notifiable Disease Surveillance System's infectious disease surveillance, which allows for the identification of more than 120 diseases and conditions and provides early detection and defense against public health threats.^{1,2}
- **Over 4 million**—Patients linked to the National Death Index in 2020, resulting in 50,000 matched electronic health records (EHRs). EHRs were also linked to CMS Medicare records in 2020, resulting in 227,100 matched records and new analyses, including studying mortality post hospital discharge, specific causes of death, and health care utilization and expenditures among the Medicare population.
- **Over 500**—Statistical reports published and data files released or updated in 2020, providing relevant and timely findings on critical health topics, including COVID-19, obesity, suicide, diabetes, and infant mortality.
- **Approximately 500 percent**—More rapid release of official death statistics due to an increase in death certificates received within 10 days of death over the past 10 years, providing critical COVID-19 mortality data to key policy makers and the public, and demonstrating the value in data modernization investments to the National Vital Statistics System.
- **Less than 2-weeks**—The near-real-time COVID-19 data analysis of the impact of COVID-19 on mental health, telemedicine use, reduced access to care, health insurance coverage, and loss of work.
- **15 billion**—Number of laboratory tests per year conducted by 284,000 U.S. clinical and public health laboratories with access to CDC training, guidance, and standards.³
- **0**—Number of additional steps frontline healthcare workers need to take to report a COVID-19 case to public health once their facility has adopted electronic case reporting (eCR) capability. As of January 2021, CDC and its partners have enabled eCR for COVID-19 in all 50 states, DC, and 11 local jurisdictions, with 6,600 healthcare facilities participating and 5.6 million automated COVID-19 eCR reports sent to public health agencies.
- **5,935**—Number of healthcare facilities in 47 states and the District of Columbia that contribute data to the National Syndromic Surveillance Program's Biosense Platform each day.
- **2,202**—CDC campus laboratory spaces receiving onsite, in-person safety inspections each year from CDC laboratory safety officials; this number may be impacted by the ongoing response to COVID-19 in FY 2020-2021.
- **66,779**—Laboratory systems training course completions by CDC and non-CDC learners. CDC has delivered 73 laboratory systems trainings through eLearning courses and webinars.
- **57**—Number of rigorous scientific reviews by CDC Laboratory Safety Review Board of protocols for the transfer of biological materials out of high-containment laboratories, to ensure the safety and verified inactivation of dangerous pathogens (31 Annual Reviews submitted and 26 Board submissions and reviews in 2019).

PUBLIC HEALTH SCIENTIFIC SERVICES

BY THE NUMBERS...

- **100 percent**—Proportion of the 277 CDC Epidemic Intelligence Service officers in the 2018 and 2019 classes and Laboratory Leadership Service fellows in the 2019 class that have assisted with the COVID-19 response. The fellows, assigned to 45 states and 3 territories, conduct more than 280 local investigations a year.
- **\$5.3 million**—Estimated value of continuing education (CE) credits awarded to federal, state, local, tribal, and territorial public health professionals through the CDC TRAIN Learning Network.
- **468**—Number of executed technology transfer agreements, of which 103 were COVID-related, in 2020.
- **7.7 million**—Number of public access downloads of CDC publications in FY 2020.

*References:

¹ <https://wwwn.cdc.gov/nndss/conditions/notifiable/2018/>

² https://wwwn.cdc.gov/nndss/document/National_Notifiable_Diseases_Surveillance_System_Event_Code_List_2018_v1.xlsx

³ Available at: <https://wwwn.cdc.gov/clia/Resources/LabSearch.aspx>

*Unless otherwise noted, all information and calculations are from CDC program data.

Public Health Scientific Services Funding History	
Fiscal Year	Dollars (in millions)
FY 2018	\$496.710
FY 2019	\$525.677
FY 2020	\$578.497
FY 2021 Enacted (BA)	\$591.997
FY 2022 President’s Budget (BA)	\$609.997
FY 2022 President’s Budget (PHS Eval)	\$132.000

Health Statistics Budget Request

CDC's National Center for Health Statistics (NCHS) is the health statistics agency for the United States, designated by the Office of Management and Budget (OMB) to produce official health statistics for the nation. Federal health statistics provide critical information and evidence to shape policies, monitor programs, track progress, and measure change. CDC's health statistics data provide information to support a robust portfolio of evidence informing program decisions across CDC, HHS, and other federal agencies. As a part of the \$1 million budget increase in FY 2021, NCHS is building on modeling and analysis with alternative data sources, leveraging new data science methods and technologies to improve surveillance and research.

Health statistics are essential to monitor and measure progress in prevention and treatment. For example, CDC uses mortality statistics on suicide, homicide, and drug overdoses to develop guidance and programs to address these critical health problems. In addition to managing the continuous operations of its health statistics systems, CDC prioritizes the collection and analysis of new data to support ongoing public health crises affecting the American people. NCHS provides some of the most detailed demographic information available from across its data collection systems, from vital statistics to its suite of surveys. The availability of demographic data allows for an understanding of health disparities and health equities in the United States.

CDC uses the highest quality scientific data when making public health recommendations, and is committed to provide accurate, relevant, and timely data to guide the federal government's ability to monitor and respond to the COVID-19 pandemic. Leveraging the statistical work used in responding to the opioid crisis to provide more timely reporting of drug overdose deaths, CDC collaborated with jurisdictions across the United States to quickly collect and publish credible information on COVID-19 deaths through daily and weekly updates. This allows federal, state, and local policymakers to understand the toll of the novel coronavirus in their area. In April 2020, CDC published [Guidance for Certifying Deaths Due to Coronavirus Disease 2019 \(COVID-19\)](#)²⁹¹ to help address concerns regarding the possibility of over or under-reporting of COVID-19 deaths.

Groundbreaking NCHS tools allow decision-makers to gauge the impact of the pandemic on the day-to-day lives of Americans. NCHS partnered with the US Census Bureau and other federal statistical agencies to assess personal health experiences during the COVID-19 pandemic. During this experimental data project, NCHS monitored and reported symptoms of anxiety and depression, delayed medical care, and changes in health insurance coverage. Another experimental data source, the Research and Development Survey (RANDS), produced estimates on loss of work due to illness, telemedicine use, and reduced access to care during the pandemic. NCHS also added numerous COVID-19 related questions to its suite of population health and health care surveys to provide information to key policymakers.

The COVID-19 pandemic has reinforced the ongoing need to modernize public health infrastructure to address future emergencies and provide credible data to researchers and policymakers. NCHS launched the [Vital Statistics Modernization Community of Practice](#)²⁹² in FY 2021 to provide high-quality mortality data quickly to policymakers and data users. Its key priorities include greater capacity for modeling and analytics; faster internet surveys; the development of a new data query tool to integrate and streamline data access; and expanding data collection on race and ethnicity. These efforts will build capacity in data science to help guide the use of electronic health records (EHRs) and alternative data sources, as well synthetic data files and other mechanisms that enhance access while protecting confidentiality.

²⁹¹ <https://www.cdc.gov/nchs/data/nvss/vsrg/vsrg03-508.pdf>.

²⁹² <https://www.cdc.gov/nchs/nvss/modernization/cop.htm>.

Budget Request

CDC’s FY 2022 request of **\$175,397,000** for the National Center for Health Statistics, including **\$132,000,000** in PHS Evaluation Transfer, is level with FY 2021 Enacted.

At the FY 2022 requested level, CDC will:

Continue to provide quality information to inform decisions and policies by maintaining existing health data systems at current functionality and implementing new requirements to acquire data assets for evidence-building purposes.

Maintain core data systems used by HHS and CDC that monitor changes in the healthcare system and address the most critical data needs of public health.

Inform efforts to expand access to data, including public and restricted data, while protecting confidential information.

Maintain baseline survey sample sizes to produce estimates on key health indicators at the national level.

Ensure maximum efficiency of efforts through statistical agency coordination and alignment of data collection activities across agencies and programs.

Major Data Collection Activities

Data Collection Systems	Method of Data Collection
National Vital Statistics System (NVSS)	Obtains information on the 3.8 million births and 2.8 million deaths in the United States each year to monitor natality and mortality.
National Health Interview Survey (NHIS)	Flagship HHS survey conducting in-person household interviews on health status and conditions, disability, access to and use of health services, health insurance coverage, immunizations, risk factors, and health-related behaviors.
National Health and Nutrition Examination Survey (NHANES)	The only federal health survey that assesses the physical health and nutritional status of a nationally representative sample of adults and children, combining in-person household interviews with physical examinations and laboratory testing conducted in mobile examination centers.
National Health Care Surveys (NHCS)	Collects information from healthcare providers about their organizational structure, services rendered, and patients served, including claims and clinical data from EHRs.

National Vital Statistics System

The National Vital Statistics System (NVSS) provides key information on the 3.8 million births and 2.8 million deaths in the United States each year, and is the oldest, most successful example of intergovernmental data sharing in public health. This statistical system produces information on birth rate, infant mortality, life expectancy, mortality, and the leading causes of death. The quality and utility of the vital statistics data has significantly improved due to the successful long-standing collaboration with vital registration jurisdictions, consisting of U.S. states, territories, New York City, and Washington, D.C.

CDC staff have engaged with medical examiners and coroners, resulting in improvements in the quality of mortality data. CDC launched the monthly release of [Provisional Drug Overdose Death Counts](https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm)²⁹³ in 2017 to provide access to the timeliest information on drug overdose deaths from 16 states. In the past three years, the number of jurisdictions reporting these overdose death counts with drug specificity has more than doubled to 40, indicating that states value reporting this information to guide overdose prevention programs. Quality improvements have accelerated the reporting of all mortality data—a foundational part of public health surveillance.

²⁹³ <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>.

In 2020, CDC began to provide daily and weekly updates on [COVID-19 mortality rates](#).²⁹⁴ These provisional death counts are stratified by geographic region, age, sex, race and ethnicity, and educational status, allowing policymakers to see the differential effects of COVID-19 on various sub-populations. At the beginning of the pandemic, CDC began publishing [estimates of “excess deaths,”](#)²⁹⁵ including deaths directly or indirectly attributed to COVID-19, that can provide information about the total burden of mortality published by age group, race and Hispanic origin, and for select causes of death. Information on excess deaths makes it possible for public health experts and policymakers to identify where and when mortality is increasing, regardless of the cause. To ensure that certifiers complete death certificates in an accurate, standardized manner throughout the nation, CDC published [guidance for certifying deaths due to COVID-19](#).²⁹⁶ The opioid overdose epidemic and the COVID-19 pandemic highlight the need to sustain and improve upon critical NVSS infrastructure.

National Health Interview Survey

The National Health Interview Survey (NHIS) remains the nation’s principal health survey for over 60 years and is an invaluable source of information about the health of the U.S. population. Data collected through personal household interviews in the NHIS are instrumental in tracking health status, risk factors, health conditions, and access to care, and focus on critical public health topics, such as prescription opioid use and pain management. For several months during the COVID-19 pandemic, NHIS paused in-person interviews and transitioned to conducting phone-interviews when possible to protect the health of respondents and interviewers; in-person data collection resumes when interviewers are unable to reach sample households over the phone. CDC also added COVID-19 related questions to the NHIS to better understand the impact of CDC’s pandemic response and major prevention efforts on the nation’s health, an effort with clear policy relevance for the future.

Investments in the NHIS support a highly efficient platform for the collection of data within HHS and for other federal agencies. Because states like California benchmark their health surveys to the NHIS, CDC and HHS surveys can use the NHIS to compare the effectiveness of programs. Private sector health surveys also rely on the NHIS for the official national population health estimates for policy and research. NHIS data have become the linchpin for modeling access to care and estimating the impact of changes in national policy on various segments of the U.S. population.

National Health and Nutrition Examination Survey

The National Health and Nutrition Examination Survey (NHANES) is the only federal survey that combines household interviews with physical examinations and laboratory tests, and collects nationally representative data on the prevalence of both diagnosed and undiagnosed conditions in the population, including diabetes, hypertension, and high cholesterol. NHANES provided evidence of the rise in obesity in the United States for both adults and children, informing program planning and prevention efforts across CDC and HHS. NHANES also provides information for national standards for measurements of height, weight, and blood pressure.

CDC and other federal agencies, including NIH and USDA, rely heavily on NHANES to provide measurements for targeting resources and planning and evaluating programs. For example, NHANES data have been instrumental in providing a more expansive view of opioid use among population subgroups—groups for whom insufficient information exists for program or policy considerations. CDC measures more than 300 chemicals and nutrition indicators from NHANES and publishes its findings in the regularly updated *National Report on Human Exposure to Environmental Chemicals and National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population*.

²⁹⁴ <https://www.cdc.gov/nchs/nvss/covid-19.htm/>.

²⁹⁵ https://www.cdc.gov/nchs/nvss/vsrr/covid19/excess_deaths.htm.

²⁹⁶ <https://www.cdc.gov/nchs/data/nvss/vsrg/vsrg03-508.pdf>.

The public health danger posed by the COVID-19 pandemic in 2020 prevented NHANES from conducting in-person physical examinations and laboratory tests, but CDC re-purposed NHANES' mobile examination centers to serve as COVID-19 testing sites in Washington, D.C. and Maryland to support the response.

National Health Care Surveys

The National Health Care Surveys are a family of nationally representative provider-based surveys that cover a broad spectrum of health care settings and answer questions about the use of services and the delivery of care. Healthcare facilities, inpatient hospital units, and physician offices provide information on their practices, the delivery of services, and individual patient encounters. The National Hospital Care Survey (NHCS) obtains information on emergency department (ED) visits, including critical information on drug-related ED visits. This survey integrates EHRs, increasing the efficiency and speed of data collection and providing high quality and timely clinical data to inform policy and advance research.

Data Access

Health statistics from NCHS data collection systems are valuable tools for policymakers, researchers, and the public to improve the nation's health. CDC must balance allowing its users access to these important resources while protecting the privacy of respondents' personal health information. NCHS operates several programs to achieve this goal. The Research Data Center (RDC) provides researchers access to restricted data to conduct public health research to inform evidence-based policymaking. The RDC supplies data in an ethical manner to protect the confidentiality of survey respondents, study subjects, and institutions. To maximize efficiency and improve the utility of the data, the RDC has successfully collaborated with eight HHS Operating Divisions to consolidate access to confidential information while reducing burden to the government and data users.

The Data Linkage Program connects health related data from multiple sources enabling scientists and policy makers to answer complex health questions relevant to all Americans. The program maximizes the scientific value of CDC's population-based surveys by linking to data from vital and administrative records. For example, CDC's health surveys integrate with data from the National Death Index, Centers for Medicare and Medicaid (CMS) enrollment and claims, the U.S. Department of Housing and Urban Development (HUD), and the Social Security Administration (SSA). These partnerships not only create an opportunity to improve data quality; they provide data to inform evidence-based decision-making and aided in answering key health policy questions, such as the effectiveness of federal policies aimed at lowering lead exposure in children living in public housing.²⁹⁷ Linked data resources has the potential to reduce research costs by eliminating the need to re-contact survey participants for follow-up information and provide historical context to survey data on major diseases, risk factors, and health services utilization. CDC is now working to develop the necessary linkages to help understand the impact of public health emergencies, such as the COVID-19 pandemic.

Strengthening the Use of Evidence and Evaluation

The Foundations for Evidence-Based Policymaking Act of 2018 designated federal statistical agencies with the responsibility for acquiring data for evidence building purposes (44 U.S.C. §3581). As the statistical agency for health, NCHS serves CDC and HHS in the implementation of the agency's Evidence-Building Plan. Principal statistical agencies have a long history of sharing research findings and products with other agencies, and the Act establishes clear authority for these agencies to obtain data assets to address the priority questions in agency-level evaluation plans. The Act requires the designated HHS Statistical Official, the Director of NCHS, to work with the HHS Evaluation Officer and Chief Data Officer to promote interagency coordination and collaboration. The Director of NCHS also serves in this capacity on the Interagency Council on Statistical Policy to

²⁹⁷ Ahrens, K. A., Haley, B. A., Rossen, L. M., Lloyd, P. C., & Aoki, Y. (2016). Housing Assistance and Blood Lead Levels: Children in the United States, 2005-2012. *American journal of public health*, 106(11), 2049–2056. <https://doi.org/10.2105/AJPH.2016.303432>.

assist with the coordination of the Federal Statistical System as all agencies implement new statutory requirements focused on improving the management and use of data across the federal government. These collaborations continue to support the efforts of CDC and its role in the public health information system.

Statistical Innovation

CDC is leading innovations in methods development, integration of multiple data sources, and emerging approaches in data science to modernize core mechanisms and embrace new technology and approaches for managing data. These efforts build on NCHS's reputation as a federal statistical agency with longstanding relationships with other federal entities, experience in access and data use agreements, as well as expertise in record matching, data linkage, and analytic methods. Innovations in health statistics will contribute to the modernization of the entire public health data system, harnessing of new data, expansion of the scope and capacity for statistical analysis, and connection of data across the statistical system.

Surveillance, Epidemiology, and Public Health Informatics Budget Request

The emergence of COVID-19 challenged the public health system in unprecedented ways. CDC's existing investments in surveillance, epidemiology, and public health informatics provided critical capacity for federal, state, tribal, and local governments to monitor the virus's spread, strengthen laboratory systems, and yield vital insights to inform the nation's response. CDC scaled the National Notifiable Diseases Surveillance System (NNDSS) to track each individual reported case of this new disease in the United States, eventually processing 17 times the standard case report load during peaks early in the response and expanding the capacity of the system to sustain significantly higher operational levels throughout. Within weeks of the disease's emergence in the United States, CDC started using its National Syndromic Surveillance Program (NSSP) to identify early, undiagnosed COVID-19 cases in emergency departments across the country. CDC also leveraged NSSP to track a variety of other important indicators, from cases occurring in long-term care facilities to the impact of the outbreak on emergency departments. The ability of CDC to adapt, modify, and scale these and other systems is a result of the long-term investments in these vital capabilities.

The pandemic has underscored the continuing and substantial need for modernizing public health data infrastructure at every level of government. In FY 2020, Congress made initial investments in CDC's Public Health Data Modernization Initiative, which has enabled CDC to take the first steps to strengthen the public health data and surveillance infrastructure of the United States. Additional funds appropriated through the Coronavirus Aid Relief and Economic Security (CARES) Act of 2020 and the American Rescue Plan Act of 2021 have enabled substantial progress in the implantation of data modernization. Through this initiative, CDC and State, Territorial, and local health departments are charting a course to a future where data are efficient, flexible, rapid, and able to drive action in real time. As CDC continues to transform public health data, staff are working across the agency and beyond to create an integrated, high-speed, networked health data approach for laboratories, healthcare facilities, and public health departments to protect Americans from health threats.

To date, CDC has provided support to states and local public health agencies, non-governmental entities, and health care systems to improve data science and health systems infrastructure. This includes providing direct support to states to make immediate data infrastructure investments to modernize public health capabilities, including establishing a data modernization coordinator. CDC has begun the process of transforming its systems away from a fragmented structure and toward an integrated ecosystem that enables bi-directional flow of information between state and local jurisdictions, the healthcare sector, and CDC. The agency has supported critical public health partners to create shared services platforms, assess current data infrastructure needs and gaps, and enhance public health data modernization efforts among tribal partners. This effort includes laying the groundwork for a sustainable human capital strategy to advance data science and building robust public-private partnerships with healthcare and healthcare record software industries, including health information exchanges.

These initial investments are already delivering results. For instance, expanded electronic case reporting (eCR) implementation in FY 2020 has resulted in earlier disease detection and intervention. Public health agencies receive automatically generated case reports directly from healthcare facilities, without placing additional burden on frontline healthcare providers because of this capability. As of January 2021, all 50 states, Washington, D.C., and 11 large local jurisdictions are now capable of receiving electronic case reports, up from only a handful in 2019, and these new capabilities are being immediately used. EHRs generated more than 7.2 million COVID-19 case reports and 63 public health agencies received these reports through March 26, 2021, a massive leap forward in this capacity. CDC is rapidly onboarding new healthcare facilities to eCR. More than 7,200 facilities are sending COVID-19 case reports to public health using eCR as of March 2021.

In FY 2020, CDC's data modernization initiative also supported the ongoing efforts of the National Program of Cancer Registries to modernize the cancer surveillance system by moving to a cloud-based platform. This will allow for real-time identification of cancer incidence for 90-95% of cancer diagnoses. Since 2019, several central

cancer registries have received cancer data directly from the laboratories through a cloud-based portal, which allows for much more timely case identification.

Budget Request

CDC's FY 2022 request of **\$460,600,000** for Surveillance, Epidemiology, and Public Health Informatics is **\$100,000,000** above the FY 2021 Enacted level. This total funding level includes a request for **\$150,000,000** to support the Public Health Data Modernization Initiative (DMI), a multi-year strategy transforming how CDC and State, Territorial, and local health departments collect and use data to drive action in real time—efficiently, flexibly, rapidly, and with enhanced impact.

Public Health Data Modernization Initiative

CDC's FY 2022 request of **\$150,000,000** for Public Health Data Modernization is **\$100,000,000** above the FY 2021 Enacted level. The events of the past year have underscored the need for public health data to get ahead—and stay ahead—of disease. Staying ahead will require support to bring all core data together, continually improve systems at a pace that can match both technological advancements and shifting public health priorities, and fully harness the power of forecasting and predictive analytics to prevent future crises.

Data modernization will require commitment and partnership across the public health sector—and especially with state, tribal, local, and territorial partners—to create and sustain modern, secure, real-time data systems that will protect the American public from health threats while safeguarding individual privacy. CDC has developed a DMI Roadmap of Activities and Expected Outcomes that guides all current and future investments in data modernization. The roadmap lays out the plan for how CDC will coordinate people and systems, accelerate data for action, and support strategic innovation to reach the agency's long-term goals. With increased data modernization resources in FY 2022, CDC will expand targeted investments across the roadmap's three priority areas:

- **Coordinating People and Systems:** If data systems cannot connect to and seamlessly interact with one another, health threats remain invisible. Paper-based transmission, conflicting systems, and outdated technology can slow or stop the movement of public health data. With data modernization, CDC will implement solutions for the timely, secure, and accurate flow of health data from electronic health records, laboratories, and other primary data sources to state and local jurisdictions to reduce the burden of data collection. This includes adopting common data policies, practices, and standards to create an interoperable system across the federal, state, local, and healthcare sectors. Modernization supports multi-directional data flows between these numerous entities and CDC, ensuring that data have maximum utility for protecting the public's health.
- **Accelerating Data for Action:** The nation depends on information from CDC's data systems to make the most informed decisions for health. Modernizing the agency's mission critical systems for increased electronic reporting will enable timely data linking, sharing, analysis, and visualization to address emerging issues and answer urgent policy questions. Building skills in the workforce in data science, analytics, modeling, and informatics will increase capacity to analyze and act on data quickly and accurately. Data modernization will enable the agency to pivot to cloud-based, enterprise-wide infrastructure and services. These modernized capabilities will lift the country's entire public health data infrastructure and lay the foundation needed for cloud and other forms of advanced analytics we will increasingly rely on in the future.
- **Supporting Strategic Innovation:** New approaches can give public health agencies richer data and ensure that the country is better prepared for, and protected from, all types of public health threats. CDC will spur the development and adoption of new data standards and approaches, including real-

world testing of new standards, coordination of electronic health record data elements, standardized application programming interfaces (APIs), and the use of hypothesis-driven discovery for fast-tracked implementation. The focus is on developing open-source, enterprise-level technologies; integrating data from new or non-traditional sources; and improving pathways to explore, develop, and deploy next-generation technologies (e.g., modeling, visualization, machine learning) that will lead to quick and continued data analysis with adjustment of modeling in real time. CDC will also identify and implement partner-driven solutions and strengthen public health capabilities for predictive analytics and forecasting.

To achieve these DMI Roadmap priorities, targeted efforts will provide technical assistance and support to key programs and systems at the federal, state, and local levels that will strengthen and sustain foundational public health data and IT systems now and for the future. Specifically in FY 2022, CDC will implement solutions to allow data to flow more seamlessly across healthcare and public health, as well as between jurisdictions and the agency, by focusing on the following foundational items of highest priority to CDC and state and local public health partners:

- Expanded use of Electronic Case Reporting (eCR) and connectivity to Electronic Health Records (EHR).
- Increasing the number of emergency departments and use of syndromic and disease surveillance data through the National Syndromic Surveillance Program (NSSP).
- Modernization of disease reporting through the National Notifiable Diseases Surveillance System (NNDSS) and of state’s NEDSS Base Systems (NBS) for managing public health surveillance.
- Enhancing automated Electronic Laboratory Reporting (ELR) and implementation of Electronic Test Orders and Results (ETOR) at clinical and public health laboratories.
- Implementing improvements to birth and death reporting in the National Vital Statistics System (NVSS)
- Restructuring previously siloed CDC program surveillance software to utilize cloud-native, efficient, and enterprise-wide applications.
- Providing support for connecting data sources, public health partners, and CDC through common data hubs and portals to streamline bi-directional data sharing and provide public access to data.
- Developing and piloting new standards-based approaches for detecting and monitoring public health threats.
- Supporting workforce development to assure capable data scientists and informatics-skilled staff are available to state, territorial, local, tribal, and federal public health agencies.

As CDC continues to transform public health data, advancements in rapid data analysis will allow public health professionals and policymakers to gain real-time insights, enhancing our ability to detect public health threats before they become emergencies.

CDC is the only agency with a mission to protect the public’s health as equally and comprehensively as possible. The data available, and how that data is used to support decision-making and action dictates what is possible.

Surveillance

CDC’s scientific services include a suite of surveillance and information systems that serve as the foundation for the collection and analysis of a variety of public health indicators. These systems support detection of, response to, and prevention of infectious disease and other health threats using syndromic and population health surveillance. The systems allow local, state, and federal health agencies to track, monitor, and share information related to infectious and non-infectious disease incidents and outbreaks. Agencies characterize unusual health events or activity to determine the need for further investigation or response; understand risk behaviors; and plan, implement, and evaluate preventive health services.

CDC works in partnership with state and territorial health departments through cooperative agreements to administer the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is the world’s largest continuously conducted telephone health survey, using both landline and cell phones. The BRFSS is the primary source of data for local entities and states on the health-related behaviors of adults.

Behavioral Risk Factor Surveillance System (BRFSS)^{1,2}

(dollars in millions)	FY 2020	FY 2021	FY 2022
	Final	Enacted	President’s Budget
Number of Awards	56	56	56
- New Awards	56	0	0
- Continuing Awards	0	56	56
Average Award	\$0.361	\$0.361	\$0.361
Range of Awards	\$0.125- \$0.405	\$0.125 - \$0.405	\$0.125-\$0.405
Total Awards	\$20.223	\$20.223	\$20.223

¹ Table includes core funding from the Surveillance, Epidemiology, and Public Health Informatics budget activity and other CDC programs.

² These funds are not awarded by formula.

CDC’s National Notifiable Diseases Surveillance System (NNDSS) provides comprehensive national surveillance for a number of diseases and conditions that present a potential threat to the health of a community. CDC provides operational support for NNDSS by receiving, securing, processing, and providing the nationally notifiable infectious disease data received from local, state, and territorial public health jurisdictions to disease-specific CDC programs. These efforts continue to strengthen both the health jurisdictions’ ability to report disease occurrences in accordance with local legal requirements and CDC’s ability to track cases, identify potential outbreaks and emerging trends, and monitor the impact of public health interventions. Today, approximately 120 diseases and conditions, including COVID-19, are under continuous nationwide surveillance thanks to NNDSS.

CDC provides operational support, funding, and technical assistance to local, state, and territorial public health departments to implement NNDSS. The funding CDC provides to jurisdictions accounts for 70% of NNDSS’ budget authority and is essential to ensure health departments can collect, manage, and submit case notification data to NNDSS, and can quickly adapt to emerging conditions, new scientific findings, and advances in information technology when needed. Today, more than 3,000 local health departments nationwide currently contribute case notification data to NNDSS through state and territorial public health departments, providing the backbone of the nation’s case surveillance infrastructure.

NNDSS’s adaptation to the COVID-19 pandemic is an exceptional example of its versatility and the critical role it serves in the nation’s public health infrastructure. Within hours of the COVID-19 emergency declaration, CDC’s NNDSS issued a COVID-19 event code that states used to notify CDC of new cases. CDC updated NNDSS’s Message Validation, Processing, and Provisioning System to accept COVID-19 case data and make it available to CDC programs and responders. NNDSS promptly implemented a COVID-19 Message Mapping Guide, which standardized the data elements that states provide to CDC, allowing early case data to flow almost immediately to support the national response. The system kept pace with the pandemic’s growth, providing the foundational information needed to respond to the spread of COVID-19 through American communities.

During FY 2020, CDC continued to build on investments to upgrade case-based surveillance operations and modernize the infrastructure supporting NNDSS. CDC has revitalized the NNDSS technological infrastructure to support modern, interoperable, standardized data and exchange mechanisms. Data modernization funding and the best practices adopted in response to COVID-19 will support onboarding more states to use data standardization criteria for other reportable diseases and conditions such as sexually transmitted diseases, vaccine preventable diseases, and foodborne diseases.

Moving beyond FY 2021, NNDSS will transition from modernization to an operations mode that seeks continuous innovation and enhancement while laying the foundation for the next generation of case-based surveillance.

National Notifiable Diseases Surveillance System (NNDSS) ¹

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President’s Budget
Number of Awards	64	64	64
- New Awards	0	0	0
- Continuing Awards	64	64	64
Average Award	\$0.138	\$0.172	\$0.172
Range of Awards	\$0.007–\$0.860	\$0.003–\$0.342	\$0.003–\$0.172
Total Awards	\$8.846	\$11.035	\$11.035

¹ These funds are not awarded by formula.

National Neurological Conditions Surveillance System (NNCSS)

CDC implemented a National Neurological Conditions Surveillance System (NNCSS) consistent with the requirements of the 21st Century Cures Act. Through the NNCSS, CDC is compiling and synthesizing data to increase understanding of neurological disorders and support further research into diagnostics, causes, and treatments. In FY 2019, CDC engaged the National Institutes of Health, the Veterans Administration, and external stakeholders to understand their needs, and then devised a three-stage NNCSS developmental strategy. CDC launched Stage 1, supporting two-year demonstration projects using multiple sclerosis (MS) and Parkinson’s Disease (PD) as test conditions to identify the best data sources and methods, produce national estimates of prevalence (number of people with MS and PD), and develop approaches that can be used for ongoing surveillance of other neurologic conditions.

Reflecting CDC’s commitment to data modernization, NNCSS is relying largely on existing data infrastructure to maximize efficiencies while also leveraging new methods and additional assets, such as surveys and timely electronic health record data. In FY 2020, CDC moved into the final year of the Stage 1 demonstration projects, during which it produced initial estimates of MS and PD prevalence, checked and validated the findings, and explored user-friendly formats with which to share data more broadly. Additionally, CDC generated information on mortality and how prevalence varies by demographic characteristics—including age, gender, race and ethnicity, and the presence of comorbidities (other diseases or conditions). In FY 2021, CDC is discussing NNCSS Stage 1 findings with federal and non-federal partners.

In FY 2022, CDC will implement Stage 2 using the surveillance approach developed in Stage 1 to begin to establish ongoing national surveillance for MS and PD.

Epidemiology

CDC supports scientifically sound decision making by providing epidemiological resources, evidence-based recommendations, scientific literature, tools, and other resources for preventing and solving public health threats. Health departments, hospitals, clinicians, and others engaged in protecting the health of their communities use these resources to inform and enhance their work at state and local levels. Principal programs and tools include CDC Wonder and Epi Info™.

- **CDC WONDER** is an integrated information and communication system for public health. Online databases utilize a rich ad-hoc query system for the analysis of public health data, speeding and simplifying access to public health information for state and local health departments, the U.S. Public

Health Service, the academic community, and the public. CDC WONDER is valuable in public health research, decision making, priority setting, program evaluation, and resource allocation.

- **Epi Info™** is a public domain suite of interoperable software tools designed for the global community of public health practitioners and researchers. It provides for easy data entry form and database construction, a customized data entry experience, and data analyses with epidemiological statistics, maps, and graphs for public health professionals who may lack an information technology background. Epi Info™ is used for outbreak investigations; for developing small to mid-sized disease surveillance systems; as analysis, visualization, and reporting components of larger systems; and in the continuing education in the science of epidemiology and public health analytic methods at schools of public health around the world.

Publications such as the *Morbidity and Mortality Weekly Report*²⁹⁸ (*MMWR*) and *CDC Vital Signs*²⁹⁹ provide timely public health guidance and scientific findings to a wide range of audiences. Major news media outlets, medical societies, and scholarly medical journals extensively redistribute *MMWR* and *CDC Vital Signs* content.

In FY 2020, tens of millions of readers viewed more than 150 COVID-19 reports which contained innovative scientific articles published by *MMWR*. These reports yielded the earliest descriptions of asymptomatic and pre-symptomatic transmission of the virus and elucidated the risk of transmission at large gatherings, choir practices, nursing homes, prisons and jails, homeless shelters, and other congregate settings. *MMWR* publications described the disparate impact of COVID-19 in racial and ethnic minorities and identified the elevated risk of severe outcomes for older adults and people with underlying conditions. Finally, *MMWR* reports have indicated what successful control of the virus looks like in their analyses of mitigation efforts in everyday high-risk settings such as hair salons and childcare centers. The electronic reach for *MMWR* (i.e., page views, social medial followers, and email subscribers) increased dramatically during FY 2020, jumping from 27.8 million in FY 2019 to more than 48 million in FY 2020 (as of September 30, 2020). In short, the *MMWR*'s has been the principal avenue for sharing what we know about COVID-19 and has illuminated the way forward.

Standards and Services in Public Health and Clinical Laboratories

Public health depends on a robust system of laboratories capable of detecting and monitoring biothreats and responding to public health emergencies. These laboratories are fundamental to public health surveillance and play a vital role in patient outcomes. Approximately 15 billion laboratory tests are conducted each year in the more than 284,000 CLIA-certified laboratories in the United States.

CDC provided critical support to the public health and clinical laboratory community in their efforts to fight the COVID-19 pandemic. CDC developed an rRT-PCR (Real-Time Reverse Transcription-Polymerase Chain Reaction) test to diagnose current COVID-19 infection and has helped equip state and local public health laboratories with the capacity to test for the virus. The more than 168 million COVID-19 viral RT-PCR laboratory tests performed as of November 2020 underscores the need for safe and reliable testing, timely and effective public health messaging, training resources, and the standardized reporting of laboratory test results.

During the pandemic, CDC leveraged existing relationships with federal and private sector partners to disseminate more than 80 Laboratory Outreach Communication System (LOCS) messages and conducted regular national calls with more than 2,000 unique organizations to share critical updates from CDC and other federal partners. CDC released test codes³⁰⁰ and provided technical assistance to identify and report SARS-CoV-2 test results in electronic reporting systems, an innovation that facilitated timely, high-quality data reporting to state and federal public health agencies.

²⁹⁸ <https://www.cdc.gov/mmwr/index.html>.

²⁹⁹ <https://www.cdc.gov/mmwr/index.html>.

³⁰⁰ <https://www.cdc.gov/csels/dls/sars-cov-2-livd-codes.htmlguid>.

To ensure the laboratory workforce remained trained and prepared in this challenging era, CDC expanded its training courses and virtual training options in FY 2020. Registrations for 14 COVID-19-relevant courses accounted for 70% of all course registrations. CDC released its first-ever virtual reality laboratory training course, which offers laboratory professionals the opportunity to apply, assess, and improve their skills in a safe and controlled learning environment. This is an important new resource to ensure the nation's laboratory workforce obtains necessary training even as the pandemic has made in-person learning difficult. CDC also launched an Extension for Community Health Outcomes (ECHO) project, creating a community of practice for diagnostic excellence. ECHO has made best practices, tools, and resources available to small and under-resourced communities for greater laboratory engagement for improved health outcomes.

In FY 2022, CDC will advance outcomes in five areas.

- **Quality Science in Public Health and Clinical Laboratories**—Provide scientific and technical expertise to the federally-mandated Clinical Laboratory Improvement Amendments of 1988 program in partnership with CMS and FDA. CDC will advance the development of resources, tools, and guidelines to establish a foundation of quality for laboratories using next generation sequencing and other emerging technologies. CDC will also build upon ECHO to advance improved integration of laboratory expertise into healthcare to improve diagnoses.
- **Safe and Prepared Public Health and Clinical Laboratories**—Identify additional laboratories with the capabilities, capacities, and willingness to support large-scale response to chemical, biological, radiological, or emerging threats, and serve as a liaison to clinical laboratories during public health emergencies. CDC will continue to facilitate and bridge the connections between public health and clinical laboratories. CDC will also continue to lead and influence the development of bio-risk management system standards for the health and safety of laboratory communities.
- **Excellence in Biorepository Services and Operations**—Operate CDC's College of American Pathologists accredited biorepository to support critical public health functions. CDC will continue to develop a repository of isolates and human specimens needed for assay validation, particularly during public health emergencies.
- **Accessible and Useable Laboratory Data**— Increase access to and use of laboratory data to inform patient care, support outbreak responses, and strengthen public health surveillance and interventions. CDC will continue to modernize the nation's laboratory data exchange system enabling laboratories to electronically share data in real time with CDC and other public health partners. First, CDC will enhance the Laboratory Response Network by using standardized HL7 electronic laboratory reporting (ELR) to send data from public health laboratories to CDC. Second, CDC will connect healthcare systems to public health labs through implementation of electronic test orders and results (ETOR) enabling two-way interchange of more comprehensive patient and testing results data between healthcare and public health. Establishing ETOR capability broadly in public health laboratories will improve public health surveillance and enable laboratories to provide critical patient information to healthcare.

Laboratory Safety and Quality at CDC

CDC serves as the public health reference laboratory for the nation and around the world. CDC continues to promote the culture of laboratory safety and quality across its more than 200 innovative laboratories with over 1,700 scientists who safeguard the country against health threats. CDC scientists and other public health professionals use the latest technologies to detect infectious organisms, foodborne outbreaks, and biosecurity threats; protect America's blood supply; screen for genetic and other health risk factors; monitor the health of communities; identify environmental hazards; and address many other public health issues, both foreign and domestic, to carry out CDC's mission to save lives and protect people. The COVID-19 pandemic has underscored the importance of public health laboratory systems in protecting the public's health.

In FY 2020, CDC continued to implement laboratory quality management systems to ensure that its critical scientific activities continue to be a national model of scientific excellence and safety. CDC established the Laboratory Quality Management (LQM) policy and a compendium of tools that provides guidance for laboratories establishing and maintaining formalized laboratory quality management systems. CDC laboratories must implement and adhere to LQM standards for their specific scientific activities, facilities, and operations, assuring that CDC's laboratory science will be of the highest quality and that CDC will maintain state-of-the-art laboratory capacity, test accuracy and precision, and scientific innovation.

To improve internal awareness of the agency's commitment to laboratory quality and excellence in science, CDC released a campaign titled "Committed to Quality." The campaign brings agency-wide awareness on LQM policy implementation and the importance of quality management systems as foundational elements for protecting and enhancing CDC's scientific excellence. As part of its mission to implement quality management systems across CDC, OLSS achieved certification to the International Organization for Standardization (IOS) 9001:2015 standard to demonstrate its commitment to providing high-quality services and continual improvement.

In FY 2022, CDC will build upon efforts to strengthen laboratory science and safety by supporting quality management systems that perform rigorous review of protocols for the inactivation of life-threatening pathogens, conduct on-the-ground safety inspections of CDC laboratories, and ensure CDC laboratory staff have state-of-the-art training needed to meet 21st century health threats. CDC will also continue investing in key efforts to strengthen laboratory safety and excellence across the agency. Priorities include:

- **Comprehensive safety oversight:** CDC will continue to implement and support centralized oversight of biological, chemical and radiation safety across the agency, a vital investment to ensure optimal safety and security of CDC laboratories and the public.
- **Ensuring comprehensive laboratory quality:** CDC will continue building on its foundation of scientific excellence to provide tools, training, and expertise that enhance quality laboratory science and aid CDC laboratories in implementing quality management systems.
- **Advancing the science of safety:** CDC aims to apply the same rigorous scientific methods to the safety of its laboratories that it uses to confront public health threats. To spur this "science of safety," CDC will continue investing in one-time awards to laboratories across the agency that propose innovative research or solutions to critical laboratory safety challenges.

Laboratory Safety and Training at CDC

CDC develops competency-based laboratory training for CDC scientists. Maximizing the impact of CDC's laboratories requires a workforce of laboratory scientists who are committed to quality, trained and competent in cutting-edge techniques and technology. A comprehensive training curriculum, including laboratory safety and quality courses, ensures that CDC's laboratory scientists are equipped to meet current and future public health challenges.

In FY 2022, CDC will enhance its training portfolio by developing more instructor-led training courses and rolling out a standardized core BSL-3 training curriculum. CDC will also establish a training cadre (i.e., train the trainer program) within CDC laboratory programs to assist with the development and delivery of instructor-led courses.

CDC also provides rigorous internal oversight of its laboratories that work with research animals and the most high-consequence pathogens and toxins in the world. This funding supports CDC's Animal Care and Use Program Office, responsible for ensuring compliance with federal laws and principles in the care and use of laboratory animals at CDC while ensuring the highest standards of animal welfare. It also supports CDC's select agent compliance program, which ensures its internal laboratories continue to comply with the Federal Select Agent Program's rules to secure these agents and protect the public's health.

Scientific Integrity and Quality at CDC

CDC ensures and advances scientific integrity, quality, and innovation across the agency, and provides agency-wide leadership and oversight for all scientific matters. CDC provides oversight of scientific reviews, clearance processes, guidelines, and impact assessments to ensure scientific relevance, credibility, and transparency for any publications, research, and communication materials. In FY 2020, CDC conducted scientific reviews of nearly 2,000 scientific documents, including all COVID-related scientific publications, with a median turnaround time of less than 24 hours. CDC aims to ensure that its science and research activities, as well as its staff, comply with federal and local laws, regulations, and policies to exercise the highest level of scientific reliability. Its scientific services include training, library resources, and technology transfer facilitation for over 11,000 CDC scientists across the agency.

Advances in data science and modernization also promote data sharing, public access and alignment with federal data initiatives and privacy, ethics, and confidentiality principles. CDC's automated Data Use Agreement (DUA) template has created a repository of over 450 DUAs. CDC also executed 468 technology transfer agreements, of which 103 were COVID-related, and reduced scientific regulatory approval time by 90% for nearly 100 key COVID-19 scientific studies. CDC also drives health equity science strategies, had pioneered development of a pilot system to track health-equity associated scientific projects and publications. Advances in strategic science through targeted, high quality scientific work that informs policy, guides practice, and optimizes public health impact in the United States.

In FY 2022, CDC will continue to build the agency's scientific integrity and quality infrastructure to support public health domestically and globally. Core priorities include:

- **Ensuring scientific integrity and quality:** CDC will continue to modernize policies, practices, and training to safeguard scientific integrity in alignment with federal regulations and ensure that its activities meet the highest standards of scientific quality, ethics, and transparency.
- **Building capacity through a trained, diverse scientific workforce:** CDC will build sustainable recruitment, training, and mentorship programs and partnerships to ensure that its scientific workforce is trained in the highest standards of scientific integrity, quality, and positioned to lead public health innovation.
- **Advancing health equity science and interventions:** CDC will support robust, effective approaches to expand the evidence base of interventions to reduce health disparities, improve health outcomes, and advance health equity.
- **Modernizing data and innovation:** CDC will continue to modernize data, scientific methods, systems, and research processes, with an emphasis on innovative science tools to advance analytics capabilities across the agency.
- **Developing systems, infrastructure, and knowledge management:** CDC continues to increase public access to CDC publications and ensure that internal systems support measuring impact, scientific relevance, credibility, and transparency.

Real-Time Data Analysis and Information Sharing

CDC's National Syndromic Surveillance Program (NSSP) provides federal, state, and local health officials with a near real-time system for detecting, understanding, and monitoring events of public health concern. By tracking patient symptoms in emergency departments – before a diagnosis is confirmed – public health can detect unusual levels of illness to provide better situational awareness, determine if a response is warranted, and scale the level of effort when a response is required.

The NSSP BioSense Platform provides practitioners access to a secure, cloud-based, integrated electronic health information system with standardized analytic tools and processes. Used daily, these tools enable users to

rapidly collect, evaluate, store, and share syndromic surveillance data. Using the BioSense Platform, health officials analyze syndromic data to improve their common awareness of health threats over time and across regional boundaries, while also providing national situational awareness for health emergencies and other events of public health concern. Currently, 59 total sites, covering all or portions of 47 states and Washington, D.C., participate in NSSP. With nearly 6,000 health facilities, including 3,598 emergency departments (ED), actively contributing data to the NSSP BioSense Platform, the system provides data on approximately 3 out of every 4 (73%) ED visits in the country each day, with health data available for analysis by health officials within 24 hours of a patient's visit.

Throughout FY 2020, NSSP has supported the nation's response to the COVID-19 outbreak through its existing partnerships with state and local health departments and collaborations within the NSSP Community of Practice. Even before the national response began, state and local health departments were using NSSP's analytic tools and collaborative environment to understand the threat of COVID-19 and identify disproportionately affected populations. CDC's Emergency Operations Center and the Joint Coordination Center identify, understand, and respond to changing COVID-19 patterns resulting from data acquired from NSSP's dashboards. Testing data, such as volume and proportion positive results, as well as indicators of virus resurgence received from these dashboards provide new visualizations that assist public health departments and decisionmakers.

State and local health departments are using NSSP to track patients who visit an emergency department with an adverse event after receiving the vaccine. Data collected through NSSP supplements information collected from other vaccine tracking systems and provides a more thorough understanding of vaccine-related events. These efforts provide state and federal leaders with health information and situational awareness to coordinate response efforts with CDC and address novel aspects of the pandemic.

Syndromic surveillance's versatility makes it adaptable for use in a wide range of events and emergencies. For example:

In Louisiana, public health officials recognized that syndromic surveillance data could help provide wide-ranging insights into the state's opioid response efforts. Sharing syndromic data from emergency department visits related to drug abuse and prescription drug use with organizations and coalitions across the state led to a better understanding of trends, helped evaluate current opioid policies and shape new ones, and supported law enforcement and other groups' efforts to develop innovative approaches to overdose responses.

When Hurricane Florence brought catastrophic flooding to North Carolina, state health officials used syndromic surveillance to monitor injuries, drownings, motor vehicle accidents, carbon monoxide exposure, medication refills, and other storm-related health effects. Within 24 hours of national Disaster Medical Assistance Teams (DMATs) deploying to shelters in North Carolina, data from the DMATs were available in NSSP, providing insight into the health events experienced by those in shelters.

In Virginia, health officials and the Department of Defense collaborated with NSSP to launch a pilot project developing processes and procedures for data sharing, data access, and communication. For the first time, DoD and civilian syndromic surveillance data were visible in the same system. A key success of this pilot occurred when DoD alerted local health department colleagues of an outbreak of influenza-like illness at an elementary school on a military installation, allowing both agencies to visualize and monitor the event in near-real time. Syndromic surveillance data helped pinpoint when an increase had occurred in emergency department visits for persons reporting symptoms consistent with e-cigarette, or vaping, product use-associated lung injury (EVALI). From the onset, states utilized syndromic systems to identify, track, and monitor the health of individuals impacted by this condition. The NSSP Platform also provided CDC programs with critical information to understand and support the national response.

Investments in data modernization will further enable syndromic surveillance to become the primary tool for states’ daily and emergency response health information needs. It will also aid efforts to coordinate expanded coverage of participating facilities, which will help provide a true national health picture; continue strengthening states’ ability to detect and respond to emerging public health events; facilitate the addition of new data sources that give states and CDC broader data; and support next-generation improvements to analytical tools and operating systems such as the BioSense Platform.

National Syndromic Surveillance Program (NSSP)

	FY 2020	FY 2021	FY 2022
(dollars in millions)	Final	Enacted	President’s Budget
Number of Awards	51	51	51
- New Awards	0	0	0
- Continuing Awards	51	51	51
Total Awards	\$6.564	\$6.564	\$6.564

Public Health Workforce and Career Development Budget Request

The U.S. public health workforce is on the frontlines of the COVID-19 pandemic, laboring through more than a year of long days, nights, and weekends to protect the public from a fast moving and devastating emergency. While the pandemic has demonstrated the resilience and commitment of the public health workforce, it has also laid bare the gaps resulting from a decades-long erosion of workforce support. The COVID-19 response shone a stark light on deficiencies in the nation's investment in its public health workforce, which did not have the people or resources to surge to meet the demands of a pandemic emergency response. Strategic, investments in a diverse, robust, well-trained public health workforce are needed to ensure America never finds itself in that situation again. CDC's strategic framework includes building elite expertise in epidemiology, genomics, data science and contact tracing so that the public health system will have the capacity to address complex diseases and emergencies. CDC provides essential workforce and training programs accessible across the globe to the Department of Health and Human Services, CDC, and state and local health departments.

CDC's fellowships and training programs also continue to supply a competent and sustainable workforce capable of surging in response to imminent public health threats. Fellows are placed in positions at CDC headquarters, quarantine stations, state, tribal, local, and territorial health departments, and other field assignments. CDC hosts approximately 300 fellows across seven fellowship programs each year in 45 U.S. states and five territories. In FY 2021, all 137 EIS officers and Laboratory Leadership Services (LLS) fellows contributed to the COVID-19 response, leading COVID-19 responses in their assigned states and publishing key findings in the *MMWR* leading to actionable recommendations around mitigating the spread of disease.

CDC designs its fellowships and curricula to meet the evolving needs of the public health workforce. A survey of human resources directors identified the highest priority workforce needs as epidemiologists, laboratory scientists, and public health informatics specialists.³⁰¹ CDC's fellowships are a pipeline for training the next generation of public health leaders. For example, since the inception of the program in 1951, one-third of CDC Directors are graduates of the Epidemic Intelligence Service (EIS)—our nation's Disease Detectives training program. Currently, CDC is implementing new workforce initiatives for recruitment, training, and forecasting public health workforce needs.

CDC also builds the capacity of the nation's public-private clinical laboratory system to support rapid, large-scale responses to public health emergencies. The COVID-19 pandemic posed unique challenges to the laboratory workforce, requiring the development of new assays, stretching the capacity of surge testing facilities, and increasing the reporting of test result data and sequencing of emerging new strains. The number of individuals who are not laboratory-trained professionals now performing testing and reporting test results is the largest the United States has experienced.

CDC helps build the competency of public health and clinical laboratory professionals to:

- Implement modern laboratory informatics and data exchange systems.
- Ensure sustained laboratory quality and safety processes in various emergency situations (e.g. developing new assays, implementing new testing platforms, collecting, and reporting new test result data, standing up new mobile testing sites, or sequencing new strains).
- Develop, disseminate, and implement new public health guidance and best practices that adapt to rapidly evolving situations.
- Establish and maintain constructive relationships across multiple jurisdictions, agencies, and entities.

³⁰¹ Beck, A. J., Leider, J. P., Coronado, F., & Harper, E. (2017). State Health Agency and Local Health Department Workforce: Identifying Top Development Needs. *American journal of public health*, 107(9), 1418–1424. <https://doi.org/10.2105/AJPH.2017.303875>.

Actions taken now to invest in developing the next generation of essential public health workers will better position our communities and the nation to respond to the current pandemic and to build back a better workforce to safeguard Americans' health.

Budget Request

CDC's FY 2022 request of **\$106,000,000** for Public Health Workforce and Career Development is **\$50,000,000** above the FY 2021 Enacted level. With this investment in CDC's fellowship and training programs, CDC will rebuild the workforce of epidemiologists, contact tracers, lab scientists, community health workers, data analysts, behavioral scientists, and communicators who can help protect every American community. The country's health workforce needs to be nimble, responsive, and fueled by drive to protect all Americans and empowered by science.

These investments are essential to build a competent and empowered public health workforce prepared to respond to future public health emergencies. CDC will work with state, tribal, local, and territorial health departments to rebuild the workforce that stands between the American public and deadly public health threats. CDC will support these partners through CDC's fellowship and training programs to assist in hiring and recruitment; identify and address barriers to hiring at the state and local levels; address workforce gaps; and build capacity to respond to current and future public health threats.

While STLT health departments are the frontlines of emergency response, federal investment in workforce development is essential to a coordinated national health workforce strategy. In FY 2022 CDC will:

- Expand the pipeline of critical public health workers through fellowship programs; assisting state and local health departments to conduct barrier assessments and implement best practices for recruitment, hiring, and retention, and publishing training materials for state and local use and STEM resources highlighting pathways to careers in public health.
- Modernize workforce development information technology systems.
- Increase participants in CDC fellowship programs and place them in areas of critical need.

CDC will invest in understanding barriers and facilitating solutions around matching graduates in critical discipline areas with positions serving local and state communities. Developing robust pathways to attract graduates to public health is essential to future health security of the United States. Graduates from public health programs are earning degrees in greater numbers than ever; yet they are not matching to jobs in the public sector.^{302,303} The agency will support a workforce reflective of the faces and places that have felt the impact of devastating loss of disease. Fundamental to CDC's health equity work is a commitment to diversity, equity, and inclusion in the agency's own workforce and in the strategy employed to help build a strong public health sector workforce in communities across the country.

With investments in FY 2022, CDC will expand fellowship opportunities, from the Public Health Associate Program to Epidemic Intelligence Officers. CDC will double the number of EIS and Laboratory Leadership Service Fellows, including ensuring the opportunity for placement of a fellow in every state. CDC will also increase the number of fellows in the field that provide essential assistance and expertise to CDC and state, local, territorial, and tribal health departments.

³⁰² Public Health Graduates and Employment in Governmental Public Health: Factors That Facilitate and Deter Working in This Setting. Yeager et al. 2021 <https://pubmed.ncbi.nlm.nih.gov/31688733/>.

³⁰³ The New Public Health Workforce: Employment Outcomes of Public Health Graduate Students. Krasna et al. 2021 <https://pubmed.ncbi.nlm.nih.gov/30925525/>.

CDC will also strengthen the laboratory workforce to support clinical and public health laboratory practice. CDC will bridge, train, and sustain a capacity-building community among clinical laboratories, public health laboratories, and CDC to collectively support training and development of the current laboratory workforce. Of the 800,000 laboratory professionals who work across 295,000 CLIA-certified laboratories, less than 10% of the nation's clinical laboratory professionals currently access CDC training and workforce development resources. CDC will:

- Expand the reach of CDC's training and workforce development resources beyond the public health laboratory community into the broad clinical laboratory community, including those who perform point-of-care testing, building critical bridges between healthcare and public health.
- Continue data-driven development, promotion, and dissemination of laboratory capacity-building initiatives and resources that enhance the laboratory community's ability to combat emerging threats, learn evolving practices, and stay current with the newest standards and technologies
- Formalize partnerships to expand its reach and accessibility of its training products and resources to the laboratory community through its learning course syndication system.
- Expand development of its virtual reality training portfolio to meet the evolving needs of laboratory professionals.

The ongoing and emerging public health challenges require a public health workforce skilled in the use of new technology, collaboration with the health care sector, and access to continuing education and training. CDC attracts the brightest students with a passion for service to focus on public health as a career option, from sixth grade (Science Olympiad), to recent college graduates (Public Health Associate Program), to medical students (Epi Elective), to doctoral graduates (Preventive Medicine Residency). CDC workforce and training programs do not stop at graduation, as continuing education and training are critical to maintain the credentials, licenses, and preparedness of professionals and are vital to tackling new and emerging public health threats. CDC provides continuing education training at no cost to the public health workforce and remains committed to developing, training, and sustaining our nation's current and future public health workforce.

Behavioral Risk Factor Surveillance System (BRFSS) Grants^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$370,000	\$370,000	\$370,000	\$0
Alaska	\$385,000	\$385,000	\$385,000	\$0
Arizona	\$386,000	\$386,000	\$386,000	\$0
Arkansas	\$335,000	\$335,000	\$335,000	\$0
California	\$390,000	\$390,000	\$390,000	\$0
Colorado	\$395,000	\$395,000	\$395,000	\$0
Connecticut	\$392,000	\$392,000	\$392,000	\$0
Delaware	\$370,000	\$370,000	\$370,000	\$0
Florida	\$395,000	\$395,000	\$395,000	\$0
Georgia	\$350,000	\$350,000	\$350,000	\$0
Hawaii	\$370,000	\$370,000	\$370,000	\$0
Idaho	\$390,000	\$390,000	\$390,000	\$0
Illinois	\$350,000	\$350,000	\$350,000	\$0
Indiana	\$390,000	\$390,000	\$390,000	\$0
Iowa	\$380,000	\$380,000	\$380,000	\$0
Kansas	\$390,000	\$390,000	\$390,000	\$0
Kentucky	\$390,000	\$390,000	\$390,000	\$0
Louisiana	\$390,000	\$390,000	\$390,000	\$0
Maine	\$335,000	\$335,000	\$335,000	\$0
Maryland	\$390,000	\$390,000	\$390,000	\$0
Massachusetts	\$390,000	\$390,000	\$390,000	\$0
Michigan	\$375,272	\$375,272	\$375,272	\$0
Minnesota	\$385,000	\$385,000	\$385,000	\$0
Mississippi	\$390,000	\$390,000	\$390,000	\$0
Missouri	\$390,000	\$390,000	\$390,000	\$0
Montana	\$390,000	\$390,000	\$390,000	\$0
Nebraska	\$390,000	\$390,000	\$390,000	\$0
Nevada	\$405,000	\$405,000	\$405,000	\$0
New Hampshire	\$392,001	\$392,001	\$392,001	\$0
New Jersey	\$390,000	\$390,000	\$390,000	\$0
New Mexico	\$390,000	\$390,000	\$390,000	\$0
New York	\$405,000	\$405,000	\$405,000	\$0
North Carolina	\$390,000	\$390,000	\$390,000	\$0
North Dakota	\$390,000	\$390,000	\$390,000	\$0
Ohio	\$390,000	\$390,000	\$390,000	\$0
Oklahoma	\$380,629	\$380,629	\$380,629	\$0
Oregon	\$392,000	\$392,000	\$392,000	\$0
Pennsylvania	\$390,000	\$390,000	\$390,000	\$0
Rhode Island	\$340,000	\$340,000	\$340,000	\$0
South Carolina	\$390,000	\$390,000	\$390,000	\$0
South Dakota	\$296,346	\$296,346	\$296,346	\$0
Tennessee	\$299,419	\$299,419	\$299,419	\$0
Texas	\$390,000	\$390,000	\$390,000	\$0
Utah	\$335,000	\$335,000	\$335,000	\$0

FY 2022 Congressional Justification

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Vermont	\$385,000	\$385,000	\$385,000	\$0
Virginia	\$370,000	\$370,000	\$370,000	\$0
Washington	\$390,000	\$390,000	\$390,000	\$0
Washington, D.C.	\$385,000	\$385,000	\$385,000	\$0
West Virginia	\$390,000	\$390,000	\$390,000	\$0
Wisconsin	\$390,000	\$390,000	\$390,000	\$0
Wyoming	\$290,330	\$290,330	\$290,330	\$0
Territories				\$0
America Samoa	\$125,000	\$125,000	\$125,000	\$0
Guam	\$270,000	\$270,000	\$270,000	\$0
Micronesia	\$125,000	\$125,000	\$125,000	\$0
Puerto Rico	\$360,000	\$360,000	\$360,000	\$0
Virgin Islands	\$125,000	\$125,000	\$125,000	\$0
Subtotal States	\$19,218,997	\$19,218,997	\$19,218,997	\$0
Subtotal Territories	\$1,005,000	\$1,005,000	\$1,005,000	\$0
Total Resources	\$20,223,997	\$20,223,997	\$20,223,997	\$0

¹This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://wwwn.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

²Table includes core funding from the Surveillance, Epidemiology, and Public Health Informatics budget activity and other CDC programs. These funds are not awarded by formula.

³CFDA NUMBER: 93-336 [Discretionary]

National Notifiable Diseases Surveillance System (NNDSS) Grants^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$234,372	\$248,435	\$248,435	\$0
Alaska	\$164,666	\$174,546	\$174,546	\$0
Arizona	\$222,749	\$236,114	\$236,114	\$0
Arkansas	\$114,572	\$121,446	\$121,446	\$0
California	\$264,401	\$280,265	\$280,265	\$0
Colorado	\$173,662	\$184,081	\$184,081	\$0
Connecticut	\$190,695	\$202,137	\$202,137	\$0
Delaware	\$98,587	\$104,503	\$104,503	\$0
Florida	\$244,735	\$259,419	\$259,419	\$0
Georgia	\$142,307	\$150,846	\$150,846	\$0
Hawaii	\$178,957	\$189,694	\$189,694	\$0
Idaho	\$79,806	\$84,595	\$84,595	\$0
Illinois	\$301,120	\$319,188	\$319,188	\$0
Indiana	\$211,329	\$224,009	\$224,009	\$0
Iowa	\$281,060	\$297,924	\$297,924	\$0
Kansas	\$275,748	\$292,293	\$292,293	\$0
Kentucky	\$100,384	\$106,407	\$106,407	\$0
Louisiana	\$116,545	\$123,538	\$123,538	\$0
Maine	\$135,227	\$143,341	\$143,341	\$0
Maryland	\$199,606	\$211,582	\$211,582	\$0
Massachusetts	\$282,624	\$299,581	\$299,581	\$0
Michigan	\$188,960	\$200,298	\$200,298	\$0
Minnesota	\$241,513	\$256,004	\$256,004	\$0
Mississippi	\$97,445	\$103,291	\$103,291	\$0
Missouri	\$95,052	\$100,756	\$100,756	\$0
Montana	\$162,430	\$172,176	\$172,176	\$0
Nebraska	\$145,896	\$154,650	\$154,650	\$0
Nevada	\$187,739	\$199,003	\$199,003	\$0
New Hampshire	\$146,467	\$155,255	\$155,255	\$0
New Jersey	\$220,156	\$233,366	\$233,366	\$0
New Mexico	\$172,344	\$182,685	\$182,685	\$0
New York	\$276,726	\$293,330	\$293,330	\$0
North Carolina	\$207,365	\$219,807	\$219,807	\$0
North Dakota	\$103,295	\$109,492	\$109,492	\$0
Ohio	\$286,250	\$303,425	\$303,425	\$0
Oklahoma	\$139,493	\$147,862	\$147,862	\$0
Oregon	\$198,427	\$210,332	\$210,332	\$0
Pennsylvania	\$298,471	\$316,380	\$316,380	\$0
Rhode Island	\$156,609	\$166,005	\$166,005	\$0
South Carolina	\$160,132	\$169,739	\$169,739	\$0
South Dakota	\$120,221	\$127,434	\$127,434	\$0
Tennessee	\$167,681	\$177,742	\$177,742	\$0
Texas	\$56,909	\$60,324	\$60,324	\$0
Utah	\$322,847	\$342,218	\$342,218	\$0

FY 2022 Congressional Justification

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Vermont	\$112,994	\$119,774	\$119,774	\$0
Virginia	\$282,617	\$299,574	\$299,574	\$0
Washington	\$234,365	\$248,426	\$248,426	\$0
West Virginia	\$120,243	\$127,458	\$127,458	\$0
Wisconsin	\$210,964	\$223,622	\$223,622	\$0
Territories				
Guam	\$74,402	\$78,866	\$78,866	\$0
Marshall Islands	\$37,147	\$39,376	\$39,376	\$0
Micronesia	\$11,608	\$12,305	\$12,305	\$0
Northern Mariana Islands	\$116,773	\$123,779	\$123,779	\$0
Palau	\$3,250	\$3,445	\$3,445	\$0
Puerto Rico	\$35,400	\$37,524	\$37,524	\$0
Virgin Islands	\$23,564	\$23,564	\$23,564	\$0
American Samoa	\$3,250	\$3,445	\$3,445	\$0
Cities				
Chicago	\$9,124	\$9,672	\$9,672	\$0
Houston	\$150,679	\$159,719	\$159,719	\$0
Los Angeles	\$161,912	\$171,627	\$171,627	\$0
New York City	\$285,673	\$302,813	\$302,813	\$0
Philadelphia	\$147,054	\$155,877	\$155,877	\$0
Washington, D.C.	\$124,016	\$131,457	\$131,457	\$0
Subtotal States	\$9,205,297	\$9,757,615	\$9,757,615	\$0
Subtotal Territories	\$327,518	\$347,169	\$347,169	\$0
Subtotal Cities	\$878,457	\$931,165	\$931,165	\$0
Total Resources	\$10,411,273	\$11,035,949	\$11,035,949	\$0

¹ This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

² <http://www.cdc.gov/exposurereport/>

³ CFDA NUMBER: 93-521 [Discretionary]² <http://www.cdc.gov/exposurereport/>

³ CFDA NUMBER: 93-521 [Discretionary]

ENVIRONMENTAL HEALTH

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$196.850	\$205.850	\$308.850	+\$103.000
PPHF	\$17.000	\$17.000	\$17.000	\$0
PHS Evaluation Transfer	\$0	\$0	\$7.000	+\$7.000
Total Request	\$213.850	\$222.850	\$332.850	+\$110.000
FTEs	485	482	522	+40
-- Environmental Health				
Laboratory	<u>\$66.750</u>	<u>\$67.750</u>	<u>\$67.750</u>	<u>\$0</u>
-- Other Environmental Health				
Laboratory	\$48.500	\$48.500	\$48.500	\$0
-- Newborn Screening Quality				
Assurance Program	\$17.000	\$18.000	\$18.000	\$0
-- Newborn Screening for				
Severe Combined Immuno.				
Diseases	\$1.250	\$1.250	\$1.250	\$0
-- Environmental Health				
Activities	<u>\$46.100</u>	<u>\$47.600</u>	<u>\$150.600</u>	<u>+\$103.000</u>
-- All Other Environmental				
Health	\$16.000	\$17.000	\$20.000	+\$3.000
-- <i>Training on PFAS (non-add)</i>	N/A	\$1.000	\$1.000	\$0
-- Safe Water	\$8.600	\$8.600	\$8.600	\$0
-- Amyotrophic Lateral				
Sclerosis Registry (ALS)	\$10.000	\$10.000	\$10.000	\$0
-- Climate and Health	\$10.000	\$10.000	\$110.000	+\$100.000
-- Trevor's Law	\$1.500	\$2.000	\$2.000	\$0
-- Environmental and Health				
Outcome Tracking Network	\$34.000	\$34.000	\$34.000	\$0
-- Asthma	\$30.000	\$30.000	\$30.000	\$0
-- Lead Exposure Registry	N/A	\$4.500	\$4.500	\$0
-- Childhood Lead Poisoning				
Prevention	\$37.000	\$39.000	\$46.000	+\$7.000
-- <i>Childhood Lead Poisoning</i>				
<i>Prevention (PPHF) (non-add)</i>	\$17.000	\$17.000	\$17.000	\$0
-- <i>Childhood Lead Poisoning</i>				
<i>Prevention - PHS Evaluation</i>	N/A	N/A	\$7.000	+\$7.000
<i>Transfer (non-add)</i>				

Enabling Legislation Citation: PHSA § 301, PHSA § 307, PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317A*, PHSA § 317B, PHSA § 317I*, PHSA § 317O*, PHSA § 327, PHSA § 352, PHSA § 361, PHSA § 366, PHSA § 399V-6, PHSA § 1102, PHSA § 1706*

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural, Contracts, Competitive Grants/Cooperative Agreements

CDC helps protect Americans from environmental hazards, addressing environmental factors that could otherwise pose health risks, working to ensure the safety of the air we breathe, the water we drink, the food we eat, the soil in which we grow our food, and the environment in which we live, work, and play. Health is inextricably linked to the environment, and safe and healthy environments promote healthier people and communities. The COVID-19 pandemic has highlighted the importance of environmental public health practice in understanding, mitigating, and preventing the introduction, transmission, and spread of an infectious disease like COVID-19 through the environment, emphasizing the importance of environmental mitigation measures, such as ventilation and spacing.

CDC aims to protect all populations from environmental hazards and exposures through four core strategies:

1. Partnering with state/local/territorial health departments, tribal nations and national and local organizations to provide expertise, guidance and support aimed at increasing environmental public health capacity to reduce harmful environmental exposures and implement effective environmental public health prevention programs and interventions.
2. Monitoring and investigating environmental public health threats and their health effects through public health data surveillance and analytics; conducting laboratory analyses and environmental exposure and health studies; and championing informatics for data-driven decisions to improve health outcomes.
3. Monitoring and effectively responding to extreme weather events—from hurricanes and floods to wildfires and extreme heat—and building appropriate capacity within state, local, territorial and tribal communities.
4. Improving guidance, education and implementation of best practices to prevent and reduce the effects of the environment on health through research, evaluation, and translation of the highest quality scientific findings into an expanded EH evidence base.

CDC's FY 2022 request of **\$332,850,000** for Environmental Health is **\$110,000,000** above the FY 2021 Enacted. The FY 2022 request includes increased resources to support the Vessel Sanitation Program, CDC's efforts around Climate and Health, and the Childhood Lead Poisoning Prevention Program.

ENVIRONMENTAL HEALTH

BY THE NUMBERS

Childhood Lead Poisoning Prevention

- **13.4 million**—Children with blood lead levels tested in CDC-supported states and localities between FY 2012 and FY2017.
- **53**—CDC State and local Childhood Lead Poisoning Prevention Programs funded to carryout childhood lead poisoning prevention activities including blood lead testing, surveillance, and targeted population-based interventions.
- **39,000**—Number of people enrolled in the Flint Lead Exposure Registry. The Flint Registry monitors the health and development of individuals impacted by the crisis and connects them to critical resources to improve public health. To date, 8,400 referrals to services and 2,030 referrals to the Neurodevelopmental Center of Excellence have taken place.

Tracking Network

- **526**—Health measures, 133 indicators, and 26 data sets in the Environmental Public Health Tracking Network, including data on air quality, water and health outcomes.
- **180 million**—People in communities where CDC state tracking network partners work.

Vessel Sanitation

- **~30**—Cruise ships in U.S. jurisdiction monitored continually under the three No Sail Orders and the October 30, 2020, Framework for Conditional Sailing Order.
- **1.2 million**—Page views for COVID-19 guidance and technical instructions for cruise ships. Received 12,834 public comments and 95,599 webpage views in response to CDC’s request for information to inform future public health guidance and preventative measures relating to travel on cruise ships.

Addressing Environmental Health Concerns During the COVID-19 Response

- **45,550**—Exposures to cleaners and disinfectants reported to poison control centers nationwide during the first three months of 2020, representing an overall increase of 20.4% and 16.4% from 2019 (37,822) and 2018 (39,122), respectively.
- **639,037**—Cumulative views between May and July, 2020, of the CDC website on COVID-19 Cleaning and Disinfecting. Related English-language social media messages were seen by over 769,000 users.

Environmental Health Lab

- **416**—Chemicals and nutrition indicators measured by CDC’s Environmental Health Laboratory among participants in the National Health and Nutrition Examination Survey (NHANES) and other national studies. CDC’s Environmental Health Laboratory is the world’s most advanced public health laboratory.
- **673**—Laboratories in 50 states and 85 countries that are directly benefiting from CDC’s newborn screening quality assurance activities.

ENVIRONMENTAL HEALTH

BY THE NUMBERS...

Asthma

- **25**—States funded through CDC’s National Asthma Control Program. CDC funds have helped many asthma funding recipients achieve success in decreasing emergency department visits and asthma-related hospitalizations.
- **88%**—Decrease in emergency department visits for children participating in the CDC-funded Montana Asthma Home Visiting Program, resulting in an estimated \$2,124 in savings per child.

Safe Water

- **26,427**—Number of wells sampled between 2015 and 2020 by state and county health departments participating in CDC’s Safe Water for Community Health (Safe WATCH) program. Approximately 16% of the wells had contaminated water considered unsafe to drink
- **4.1 million**—Funding provided to 37 state and local health departments for Legionnaires’ disease response and prevention in FY 2020.

Climate and Health

- **155 million**—People living in communities where CDC Climate-Ready States and Cities Initiative partners work.
- **48**—Contiguous U.S. states with county-level data represented in the CDC’s Heat and Health Tracker, including heat vulnerability data and real-time forecasts to help communities better prepare for and respond to extreme heat events.

*

References

¹ Gould E (2009). Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. *Environmental Health Perspectives*, 117(7), 1162-1167.

² Centers for Disease Control and Prevention. National Center for Environmental Health (2014). Prevention Tips: How are children exposed to lead? <https://www.cdc.gov/nceh/lead/tips.htm> (Accessed on December 19 2017)

³ Centers for Disease Control and Prevention. Blood Lead Levels in Children Aged 1-5 Years—United States, 1999-2010. *MMWR* 2013; 62: 245-248. https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6213a3.htm?s_cid=mm6213a3_w (accessed on December 28 2018).

⁴ National Center for Health Statistics. Centers for Disease Control and Prevention. Asthma. <https://www.cdc.gov/nchs/fastats/asthma.htm>. (Accessed December 28 2018)

⁵ Nurmagambetov T, Kuwahara R, Garbe P (2018). The economic burden of asthma in the United States, 2008-2013. *Annals of the American Thoracic Society*, 15(3), 348-356. <https://www.atsjournals.org/doi/abs/10.1513/AnnalsATS.201703-259OC> (Accessed on July 23 2018).

⁶ United States Census Bureau. U.S. Population Clock. <https://www.census.gov/popclock/> (Accessed on December 19 2017)

⁷ Centers for Disease Control and Prevention. National Center for Environmental Health (2016). Private Well Initiative. <https://www.cdc.gov/nceh/hsb/cwh/pwi.htm> (Accessed December 28 2018)

⁸ Centers for Disease Control and Prevention. Heat-Related Deaths – United States, 2004-2018. *MMWR* 2020; 69: 729-734. <https://www.cdc.gov/mmwr/volumes/69/wr/mm6924a1.htm> (accessed on August 14, 2020).

*Unless otherwise noted, all information and calculations are from CDC program data.

Environmental Health Funding History	
Fiscal Year	Dollars (in millions)
2018 (BA)	\$188.112
2018 (PPHF)	\$17.000
2019 Final (BA)	\$191.694
2019 Final (PPHF)	\$17.000
2020 (BA)	\$196.850
2020 (PPHF)	\$17.000
2021 Enacted (BA)	\$222.850
2021 Enacted (PPHF)	\$17.000
2022 President's Budget (BA)	\$308.850
2022 President's Budget (PPHF)	\$17.000
2022 President's Budget (PHS Eval Transfer)	\$7.000

Childhood Lead Poisoning Prevention Budget Request

Despite significant national reductions in lead poisoning over the past several decades, there are still thousands of locations throughout the United States with lead hazards and large numbers of children at risk for lead exposure. Risk varies greatly due to the distribution of lead hazards in the environment and other risk factors in the population. Housing is the primary source of children’s lead exposure: nearly 24 million U.S. homes contain deteriorated lead-based paint or lead-contaminated house dust, and over 10 million U.S. homes rely on lead-containing service lines to carry water from municipal sources into family dwellings.

Lead exposure can cause adverse effects in nearly every system in the body and seriously harm a child’s health. Even at low levels, lead exposure has the potential to affect growth and development, hearing and speech, IQ, academic achievement, and behavior. Children from lower income and racial and ethnic minority households experience a disparate, increased risk for lead exposure. Social and economic burdens of lead poisoning are estimated to cost American families and communities \$192-\$270 billion.³⁰⁴

While no safe level of lead exposure for children has been identified, lead poisoning is preventable, and the long-term effects of lead exposure can be reduced with appropriate and timely connection to health and social services. CDC’s Childhood Lead Poisoning Prevention Program works to reduce the number of children with elevated blood lead levels (BLLs) and eliminate BLL disparities in the United States. The key Childhood Lead Poisoning Prevention Program strategy supports state and local partner efforts:

- Identifying lead exposed children through blood lead testing and reporting.
- Collecting, analyzing, and disseminating blood lead surveillance data.
- Ensuring linkages of lead-exposed children to recommended services.
- Conducting targeted, community-based interventions in high-risk communities.

Public health initiatives to reduce environmental exposures to lead have led to steady BLL decreases among the U.S. population, including children. Overall mean blood lead levels in children less than six years of age declined from 15 micrograms lead per deciliter blood ($\mu\text{g}/\text{dL}$) in the late 1970’s to $<1 \mu\text{g}/\text{dL}$ in the most recent four years of National Health and Nutrition Examination Survey (NHANES) data, representing a 94 percent decrease over time. Between FY 2010 and FY 2016, the gap in BLLs between Black children and children of other races decreased by 32 percent; and similarly, the gap in BLLs between children living above and below the poverty line decreased by 47 percent. Nonetheless, significant disparities in lead exposure persist.

The Flint Water Crisis served as a catalyst to remind Americans of the dangers of lead poisoning. CDC responded to the Flint Water Crisis by working with local health departments to monitor BLLs in more than 50 percent of the community’s children under six years of age and connected more than 90 percent of children with elevated BLLs to follow-up services. Medicaid expansion increased access to screening, health care, education, and social services for affected children in the Flint community. CDC support enabled Michigan State University to implement an innovative, one-of-a kind Lead Exposure Registry, creating the model for the nation’s first lead-free city and a beacon of recovery and healing for the Flint community. As of August 10, 2020, almost 30,000 people had signed up for the Registry and over 10,000 people had been fully enrolled. As the Flint Water Crisis reminded the country of the importance of lead prevention and surveillance, CDC expanded its Childhood Lead Poisoning Prevention Program to 19 new states and localities to address critical gaps in much needed services. Additionally, CDC established the Lead Exposure and Prevention Advisory Committee, bringing together diverse stakeholders to advise the HHS Secretary on issues related to programs and services available to individuals and

³⁰⁴ Gould, E. (2009). Childhood Lead Poisoning: Conservative Estimates of the Social and Economic Benefits of Lead Hazard Control. *Environmental Health Perspectives*, 117(7), 1162-1167. <https://ehp.niehs.nih.gov/wp-content/uploads/117/7/ehp.0800408.pdf> (Accessed on December 19 2017).

communities exposed to lead, research, and best practices, and identification of effective strategies and services.

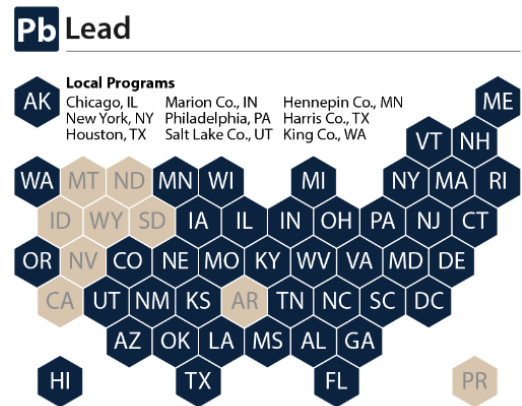
Between FY 2013 and FY 2018, CDC-supported states and localities tested over 16.6 million children under age six and identified over 560,000 children with elevated BLLs. CDC funding enables state and local governments to identify and test children at greatest risk of lead exposure; develop community-tailored lead prevention strategies; connect children with elevated BLLs to critically-needed treatment and social services; and collect and report vital lead-related data used to track trends and identify risk hot spots, ultimately improving the physical and socioeconomic health of communities.

Specifically, CDC funding enabled substantial local interventions:

- The BLL referral threshold for the Mississippi health department’s Healthy First Steps Early Intervention Program was lowered from 15 to 10 ug/dL in January 2019. The Mississippi Lead Poisoning Prevention and Healthy Homes Program provided data that was used to highlight the number of children who would benefit from this change.
- The Louisiana Healthy Homes and Childhood Lead Poisoning Prevention Program partnered with 12 Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) programs in four parishes to increase BLL testing rates and raise blood lead poisoning prevention awareness. Through the partnership with WIC, the program has reached an additional 2,403 children and 82% were tested for lead exposure for the first time. After considering data from the Philadelphia Lead and Healthy Homes Program, the city of Philadelphia passed a requirement for landlords to obtain a lead-free or lead-safe certification before issuing or renewing rental leases—regardless of whether children under seven live at the property. Implementation began in October 2020 and all of Philadelphia will be covered by this requirement by the end of 2022.

Additionally, based on local need, CDC and partner organizations piloted a new funding program in FY 2019 to provide localities with resources to implement collaborative, community-tailored initiatives to fill gaps that traditional approaches have not fully addressed. Some examples of local success stories include:

- Louisville, KY created one of the nation’s first online community systems providing 50+ social service providers a way to seamlessly coordinate essential follow-up services for some of the community’s most vulnerable.
- Houston, TX established a scalable community ‘block captain’ system to improve community trust and participation in lead prevention efforts and formed 10 community partnerships to better connect lead-exposed children to vital follow-up services. This community strategy has increased testing rates within some of the more at-risk communities and is viewed as a model to address other public health issues.
- South Carolina established a collaboration with the Catawba Indian Nation, the only Federally recognized tribe in the state. The project has increased enhanced surveillance of blood lead levels among tribal children, identified geographic areas and sub-populations at higher risk for lead exposure, and provided lead hazard education to enrolled members and their communities.
- Maryland has leveraged the Maryland Code of Regulations lead testing requirements, which designated the entire state “at-risk” for lead exposure, to require blood lead testing for all children at 12 and 24 months of age.



In FY 2020, CDC’s Childhood Lead Poisoning Prevention Program convened two meetings of newly established Lead Exposure and Prevention Advisory Committee (LEPAC). The LEPAC is charged with reviewing the Federal programs and services available to individuals and communities exposed to lead; reviewing current research on lead exposure to identify additional research needs; reviewing and identifying best practices, or the need for best practices regarding lead screening and the prevention of lead poisoning; identifying effective services, including services relating to healthcare, education, and nutrition for individuals and communities affected by lead exposure and lead poisoning; and undertaking any other review or activities that the HHS Secretary determines to be appropriate.

Budget Request

CDC’s FY 2022 request of **\$46,000,000** for Childhood Lead Poisoning Prevention is **\$7,000,000 above** the FY 2021 Enacted level; the request includes **\$22,000,000** in budget authority, **\$17,000,000** from the Prevention and Public Health Fund, and **\$7,000,000** in PHS Evaluation transfers. In FY 2022, CDC will continue to support childhood lead poisoning prevention activities in state and local jurisdictions. Specifically, increased funding will be used to improve health equity by building capacity in additional jurisdictions, to evaluate key components of the program to identify best practices, screening methods, and lead exposure research needs to better prevent and mitigate childhood lead exposure, and to expand the data capabilities of the program, in alignment with CDC’s data modernization initiative, to rapidly identify and mitigate emerging threats and ensure the public and decision makers are aware of communities with elevated risk of exposure to lead.

Childhood Lead Poisoning Prevention program funding is vital to ensuring that lead poisoning prevention efforts are supported across the country and to prevent future lead-related emergencies. The Flint Water Crisis served as a reminder of these persistent hazards to our children.

In FY 2022, CDC will support up to 61 jurisdictions. The recipient state and local health departments will focus their efforts on four core program strategies:

- **Testing and Reporting:** testing and reporting BLL in children put at higher risk of exposure, particularly before age six; emphasizing universal testing of Medicaid-enrolled children.
- **Surveillance:** systematically collecting, analyzing, and disseminating BLLs and follow-up data.
- **Linking Lead-Exposed Children to Services:** implementing processes to ensure children placed at higher risk of lead exposure and children who have been exposed to lead are referred to and receive critical follow-up care.
- **Targeted, Community-Based Interventions:** maintaining collaborative relationships with community, local, and state partners to develop activities that prioritize and address childhood lead poisoning prevention challenges and opportunities in communities with the highest risk of lead exposure.

CDC expects to observe the following outcomes resultant of successful program activity:

- Increased numbers of children less than six years of age tested for blood lead levels.
- Improved availability and use of data that leads to improved identification of geographic areas and populations at high risk for lead exposure.
- Increased identification of children exposed to lead who receive appropriate linkages to recommended follow-up services.
- Increased ability to target community-based interventions to disproportionately impacted geographic areas and populations.

Childhood Lead Poisoning Prevention Grants¹

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Number of Awards	53	53	TBD
- New Awards	5	0	TBD
- Continuing Awards	48	53	TBD
Average Award	\$0.522	\$0.486	TBD
Range of Awards	\$0.202-0.600	\$0.350-0.534	TBD
Total Awards	\$19.968	\$25.766	TBD

¹ These funds are not awarded by formula.

Environmental and Health Outcome Tracking Network Budget Request

The Environmental and Health Outcome Tracking Network connects environmental and public health information to drive innovative, cutting-edge programs and solutions that protect and improve the health of communities across the country. The National Environmental Public Health Tracking Network is a Web-based, multi-tiered interoperable system of data, tools, and services. This foundational surveillance system provides actionable information to decision makers to protect communities from health issues related to environmental factors, and helps to make environmental health efforts work faster, better, and cost less. Tracking also helps researchers better understand the connections between environmental conditions and health outcomes.

Data are most useful in stopping environmental health threats when they focus on specific geographic levels like county, city, and census tract. This makes it easier for public health professionals to respond in case of an emergency. CDC funded tracking programs work in communities that include more than 180 million people, or 59 percent of the U.S. population. To date, the national Tracking Network has 26 datasets, 133 indicators, and 526 health measures on data such as air quality, water, asthma, and birth defects, and the program continues to innovate to help bring more data to the public. CDC's Tracking Program collaborates with other CDC programs, federal agencies, and state and local health departments to increase the quality and availability of data sources and improve the utilization of Tracking Network data to protect the health of Americans. By 2024, CDC will implement seven public health data modernization imperatives including interoperability, data sharing, and reporting through a common portal.

In 2020, the Tracking Program has supported CDC's Emergency Operation Center by using the Tracking Network platform to host and visualize COVID-19 data in near real-time. These data have been used to create more than 15 COVID-19 measures. The Tracking Network platform has been able to uniquely link these COVID-19 data with other measures relevant to response efforts, including hospital and shelter locations, asthma prevalence data, demographic data, and other unique measures like CDC's Social Vulnerability Index.

Budget Request

CDC's FY 2022 request of **\$34,000,000** for the Environmental and Health Outcome Tracking Network is level with FY 2021 Enacted. CDC will continue to focus on capacity building for current recipients to ensure that public health actions based on these data continue.

Funding State and Local Tracking Programs

CDC funds state and local tracking programs through competitive cooperative agreements to create, maintain, and add to their own local tracking networks, as well as to contribute to and receive data from the national system. According to the Council for State and Territorial Epidemiologists, less than half of all states report having adequate environmental epidemiology capacity. CDC supports the maintenance of vital environmental health surveillance and epidemiology capacity.

The funding provided to state and local Tracking Programs has demonstrated savings in time, money, and resources. For example, the New Jersey Tracking Network enables the health department to answer questions quickly and easily. Now, staff have an extra 40 hours per week to focus on other priority issues. Furthermore, the infrastructure and expertise developed through funding to the state and local levels has enabled the Tracking Network to serve as the primary surveillance data platform in six state health departments. Since 2005, state and local public health officials have used Tracking Network data to complete more than 500 data-driven actions that prevent or control adverse health effects from environmental exposures.

Recently, many state and local Tracking recipients have used their expertise in data science and GIS to develop data visualizations and dashboards to support emergency response efforts. In Iowa, the COVID-19 data dashboard was built using the Tracking Program data portal platform and maintained by Tracking staff. In the first week following its release, the dashboard was viewed more than 3.4 million times.

Further, CDC supports over 200 state personnel and facilitates a mentoring program with current and potential recipients. The program also helps states save money. For example, Minnesota estimates that its public health data website saves the state \$3.6 million per year by making data publicly available and reducing the number of public data inquiries the state has to process.³⁰⁵

Tracking Network Grants¹

(dollars in millions)	FY 2022		
	FY 2020 Final	FY 2021 Enacted	President's Budget
Number of Awards	26	26	26
- New Awards	0	0	0
- Continuing Awards	26	26	26
Average Award	\$0.775	\$0.755	\$0.755
Range of Awards	\$0.592-\$0.842	\$0.577-\$0.820	\$0.577-\$0.820
Total Awards	\$20.149	\$19.626	\$19.626

¹ These funds are not awarded by formula.

³⁰⁵ <http://www.health.state.mn.us/divs/hpcd/tracking/stories/index.html>.

Environmental Health Laboratory Budget Request

CDC's Environmental Health Laboratory improves the detection, diagnosis, treatment, and prevention of diseases resulting from exposure to harmful environmental chemicals and diseases needing advanced laboratory measurement for accurate diagnosis. The lab is widely recognized for its expertise in measurement science. It develops and applies innovative techniques to assess disease risk, determine exposure levels among the U.S. population, and respond rapidly to public health emergencies. It also supports state public health laboratories in assessing harmful exposures in their communities and works directly with state newborn screening programs to implement and ensure accurate tests for early detection of diseases that cause severe disability or death when untreated. In addition, the lab harmonizes diagnostic tests for chronic diseases to ensure results are accurate and precise for diagnosing disease, guiding treatment and prevention, and supporting high-quality health research.

Budget Request

CDC's FY 2022 request of **\$67,750,000** for the Environmental Health Laboratory is level with FY 2021 Enacted. In FY 2022, CDC will continue to maintain the world's most advanced, state-of-the-art public health laboratory—delivering the unique diagnostic methods, profiles of measurements, and measurement quality needed for public health decisions.

Using Biomonitoring to Assess Americans' Exposure to Harmful Chemicals and Nutrition Status

CDC uses biomonitoring—measurements in human blood and urine—to help identify harmful environmental exposures or nutrition deficiencies among the U.S. population. The Environmental Health Laboratory measures more than 400 chemicals, including a subset of PFAS compounds, and nutrition indicators in participants of the ongoing National Health and Nutrition Examination Survey (NHANES) and other national studies. CDC then publishes findings in the regularly updated *National Report on Human Exposure to Environmental Chemicals* and *National Report on Biochemical Indicators of Diet and Nutrition in the U.S. Population*. These reports are the most comprehensive assessments of Americans' exposure to environmental chemicals and Americans' nutrition status—providing national reference data that helps physicians, scientists, and public health officials identify harmful exposures and adequate nutrition levels.

In FY 2020, CDC released new biomonitoring data for ethylene oxide hemoglobin adducts among cigarette smokers and non-smokers. These data aided federal, state, and local public health agencies, and others currently investigating potential exposures to ethylene oxide.

Also in FY 2020, CDC responded to the national outbreak of electronic cigarette, or vaping, product use-associated lung injury (EVALI). CDC rapidly developed and applied 22 laboratory methods for measuring priority potential toxicants in EVALI-associated product emissions and bronchoalveolar lavage (BAL) fluid. CDC data showed vitamin E acetate in product emissions and in BAL fluid from nearly all case patients and were published in *The New England Journal of Medicine*.³⁰⁶ CDC further collaborated with external partners to show that e-cigarette emissions of vitamin E acetate caused lung injury in mice. These data conclusively established inhaled e-cigarette emissions of vitamin E acetate as the cause of the outbreak.

CDC continued five-year cooperative agreement funding to New Hampshire, New Jersey, New York, Michigan, Iowa, and Minnesota in FY 2020, expanding nationwide capacity to measure priority environmental chemicals, like PFAS and heavy metals, in human samples. Funding supported population-based studies at the state level

³⁰⁶Blount, B.C., et al. 2020. Vitamin E Acetate in Bronchoalveolar-Lavage Fluid Associated with EVALI. *New England Journal of Medicine* 382; pp. 697-705. Accessible as of 4/5/21 at <https://www.nejm.org/doi/full/10.1056/NEJMoa1916433>.

and targeted investigations of groups at higher risk for exposure or consequences of exposure—including pregnant women, children, and firefighters. In FY 2022, CDC expects to release new biomonitoring results, adding to previously published data for 352 chemicals and 58 nutrition indicators. CDC will also collaborate on nearly 100 studies that assess environmental exposures in high risk population groups or investigate the relationship between environmental exposures and adverse health effects. These studies help determine harmful levels of exposure, identify true hazards, avoid unnecessary regulation, and assess the effectiveness of exposure reduction interventions.

CDC's Laboratory Response Network for Chemical Threats (LRN-C) Technical Program provides supportive services to 54 local and state public health laboratories. These services include a chemical threat response materials program, proficiency testing programs, lab referral capabilities, secured data messaging portals, cooperative agreement technical assistance and response readiness drills. With these resources, LRN-C member laboratories provide counterterrorism measures and CDC surge capacity, coordination with local hospitals and first responders as well as sentinel surveillance support with sample packaging and shipping. In FY 2020, CDC continued the proficiency testing program that assures the quality of measurements for 39 chemical threat agents in participating state, local or territorial LRN-C laboratories, reporting 40,670 proficiency testing results for threat agents. CDC also provided exercises, training, or quality assurance to 57 public health laboratories.

As part of this program, CDC improved nationwide access to critical laboratory reference materials by distributing the Opioid Polysubstance Material Kit and the new Fentanyl Analog Screening Emergent Panel V3, part of the Traceable Opioid Material® Kits registered by HHS. CDC also created a free online resource that helps clinical laboratories confidently identify 213 synthetic opioid-related compounds using any high-resolution mass spectrometer. CDC evaluated 19 commercial immunoassays for detection of 30 fentanyl analogs, providing critical information for application and interpretation of these assays and guiding updates to improve rapid detection of novel synthetic opioids.

In FY 2020, CDC embarked on the first Laboratory Response Network for Radiologic Threats Pilot Program. CDC provided analytical methods and technical guidance for gamma screening and alpha/beta screening to two state laboratories and one Department of Energy laboratory. Participants in the pilot validated the methods and participated in a one-time exercise to test throughput. In FY 2021, CDC will enroll 2-3 additional laboratories and generate a performance testing program. Prior to the pilot program, CDC was the only bioassay laboratory in the nation capable of performing these tests; this program represents the entire nationwide capacity to respond to radiologic or nuclear events.

Better Disease Diagnosis and Treatment by Improving the Quality of Laboratory Tests

Accurate and precise laboratory measurements are essential for correct diagnosis and treatment of disease. CDC uses expert measurement science to improve the accuracy, precision, and cost effectiveness of laboratory tests for environmental chemicals, nutrition indicators, heart disease, chronic diseases, and newborn screening. The lab develops reference methods and materials and provides quality assurance programs and trainings to assure the quality of tests in state, clinical, research, and academic laboratories. CDC's efforts reach nearly 2,000 domestic and international laboratories, helping reduce diagnosis and treatment errors, unnecessary medical procedures, and repeat laboratory tests. CDC also uses its unique, reference-quality methods to assist other federal agencies as they address emerging issues, such as ensuring the quality of blood lead measurements.

Starting in FY 2018 through FY 2020, CDC received additional funding to improve the quality and reliability of diagnostic tests for hormones. With this funding, CDC is expanding its pilot hormone harmonization program to include new biomarkers and reach more manufacturers, hospital laboratories, and commercial laboratories.

In FY 2020, CDC generated the most comprehensive assessment of hormone levels in the U.S. population using NHANES 2019-2020. This is the foundation for harmonized reference intervals and facilitates the transition from non-harmonized tests to harmonized tests in patient care.

In response to the COVID-19 pandemic, the Environmental Health Laboratory developed a reliable mass spectrometry method for detecting and quantifying antigens from SARS-CoV-2 that may inform COVID-19 vaccine development and quality assurance. The laboratory also characterized the site-specific glycan content of the SARS-CoV-2 spike protein. These data may be used to better understand vaccine efficacy and antibody-based COVID-19 medical countermeasures.

In FY 2022, CDC will begin to harmonize three new clinical tests by developing or improving reference methods for priority chronic disease biomarkers such as parathyroid hormones and creatinine and by assigning target levels to reference materials for thyroid and other hormones. CDC will further expand the reach of ongoing harmonization programs to additional laboratories and manufacturers to harmonize results on high priority lab tests. These activities will improve the diagnosis, treatment, and prevention of chronic kidney diseases, diabetes, certain cancers, osteoporosis, developmental diseases (such as polycystic ovary syndrome) and thyroid diseases.

CDC will continue to provide other quality assurance programs and materials, conduct trainings, and transfer laboratory testing methods to state, local, research, and clinical laboratories. CDC will help state newborn screening programs use new testing technology to improve detection of diseases like cystic fibrosis and congenital adrenal hyperplasia. CDC will continue partnering with private sector companies and laboratory test manufacturers to improve accuracy and precision of test results.

Earlier Identification of Diseases in Newborns by Supporting State Screening

CDC helps assure comprehensive and accurate newborn screening test results in the United States by providing training, technical assistance, quality assurance materials, and funding to state newborn screening programs. CDC supports states as they implement testing for all conditions on the HHS Recommended Uniform Screening Panel (RUSP). CDC develops and evaluates test methods for conditions on the RUSP, transfers technology to state laboratories, and works directly with states to overcome testing issues to accelerate nationwide adoption of screening for priority conditions. CDC also works to improve newborn screening test performance and streamline interpretation of complex data for better detection of newborn disorders.

CDC is continuing efforts to modernize quality assurance systems, implement advanced technology for data analytics, support expert workforce in state newborn screening programs, and partner with newborn screening stakeholders to identify and disseminate best practices.

In FY 2020, CDC received additional funding for its newborn screening quality assurance program. CDC launched a new performance testing program that created a renewable source of dried blood spot quality assurance materials, expanding CDC's capability to meet state newborn screening laboratory needs. CDC also funded five states to implement testing for conditions on the RUSP and work with CDC on newborn screening quality improvement activities.

Asthma Budget Request

Nearly 24.8 million Americans suffer from asthma today, including nearly six million children. Asthma takes almost 4,000 lives and causes 1.6 million emergency department visits per year. The disease also costs the nation \$81.9 billion annually.³⁰⁷ Asthma disproportionately affects Black or African American children, who are twice as likely to be hospitalized and more than four times more likely to die from asthma than White children. The National Asthma Control Program (NACP) seeks to decrease the number of deaths, hospitalizations, and emergency department visits, and reduce limitations on activity, including school days or workdays missed due to asthma, by helping millions of Americans gain control over their condition and reducing asthma attacks from poorly controlled asthma.

Budget Request

CDC's FY 2022 request of **\$30,000,000** for the National Asthma Control Program is level with FY 2021 Enacted. In FY 2022, CDC will offer education and expertise, quantify risks and vulnerabilities to asthma control, and fund state and territorial health departments to implement comprehensive asthma control programs. CDC will prioritize proven prevention and control efforts that reduce the number of asthma hospitalizations and emergency department visits.

Comprehensive Asthma Control Programs

CDC's NACP plays an important role in addressing Americans' asthma by funding jurisdictions to improve the reach, quality, effectiveness, and sustainability of asthma control services and to reduce asthma morbidity, mortality and disparities by implementing evidence-based strategies across multiple sectors. In FY 2020, NACP launched the first full year of CCARE, Controlling Childhood Asthma and Reducing Emergencies, a program with the goal of preventing 500,000 Emergency Department visits and hospitalizations due to asthma by August 31, 2024, and further developed EXHALE, a set of six strategies that contribute to better asthma control and that CDC and partners are using to support CCARE:

- Education on asthma self-management;
- eXtinguishing smoking and exposure to second-hand smoke;
- Home visits for trigger reduction and asthma self-management education
- Achievement of guidelines-based medical management
- Linkages and coordination of care across settings
- Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources.

Because no single intervention can, by itself, achieve asthma control on a population level, CDC implements a tiered approach to asthma control by using interventions with the strongest evidence of effectiveness, delivered as a comprehensive package. For people with asthma, a comprehensive approach assures availability of and access to guidelines-based medical management and appropriate medication use. For people whose asthma remains poorly controlled, additional steps provide progressively more individualized services, such as self-management education and home, and school-based trigger reduction.

CDC funds 25 state, city, and territorial health departments for asthma prevention activities. These programs focus their efforts on geographic areas or communities with a high or disproportionate burden of asthma. CDC

³⁰⁷ Nurmagambetov, T., Kuwahara, R., & Garbe, P. (2018). The economic burden of asthma in the United States, 2008–2013. *Annals of the American Thoracic Society*, 15(3), 348–356. <https://www.atsjournals.org/doi/abs/10.1513/AnnalsATS.201703-259OC>.

funds have helped many asthma funding recipients achieve success in decreasing emergency department (ED) visits and asthma-related hospitalizations:

- The Montana Asthma Control Program funds local health departments to implement the Montana Asthma Home Visiting Program (MAP), providing asthma self-management and trigger reduction education for children enrolled in Medicaid. Children who have completed the full six-visit series (152 of 338 enrolled) have experienced:
 - An 88% decrease in emergency department visits and an 80% decrease in missed school days due to asthma among children who have completed the full six-visit series.
 - An estimated \$2,124 savings per child, with savings due to avoided healthcare utilization sustained up to two years after completing the program.

The MAP launched a new web-based database for data collection and reporting in January 2020. However, due to the COVID-19 pandemic, in-home visiting has been suspended in favor of telehealth methods until social distancing recommendations can be relaxed.

- In New Mexico, average emergency department visits were reduced by 83% between 2013 and 2017 among participants at a hospital that implemented a self-management education program with a certified asthma educator.
- The Rhode Island Asthma Control Program partners with healthcare providers, certified asthma educators, and community health workers at local hospitals to provide intensive asthma self-management and trigger reduction education to high-risk pediatric asthma patients. These intensive sessions have reduced emergency room and hospital costs by 76%, an average of \$1,606 per program participant, with an overall return on investment (ROI) of \$1.33 per \$1 spent.
- The Vermont Asthma Program reported on the use of Open Airways for Schools (OAS), a school-based asthma self-management curriculum for elementary and middle school students from the American Lung Association (ALA), in Vermont schools from 2014-2019. 14% of the state's school nurses became OAS-certified and trained in enhanced asthma management, and 98% of enrolled students completed all OAS sessions. Proper asthma inhaler technique improved from 64% of enrolled students to 97%, and 69% of enrolled students achieved improved asthma control at the end of the program.

Collaborative efforts across states to develop best practices and to test, scale, and deploy innovative approaches that meet local needs will continue in FY 2022. These efforts additionally support the CDC initiative, Controlling Childhood Asthma, Reducing Emergencies, which launched in September 2019 with the goal of preventing half a million hospitalizations and emergency department visits among children with asthma in five years.

In 2020, CDC funded four non-governmental organizations to develop communication, education, or policy strategies to enhance the management of asthma and indoor and outdoor air quality, aimed at individuals with asthma, their caretakers, clinicians, and other stakeholders. This partnership with the ALA, the Allergy and Asthma Network, the Allergy and Asthma Foundation of America, and the National Environmental Education Foundation allows CDC's NACP to reach a national audience in a coordinated manner.

Asthma Surveillance

Asthma control efforts succeed with effective asthma surveillance. State and local health departments rely on asthma surveillance to accurately direct their efforts to reduce the burden of asthma. CDC provides state-specific adult and child asthma prevalence data and other important measures of asthma control through existing data systems in the agency. The Behavioral Risk Factor Surveillance System (BRFSS) administers an in-

depth Asthma Call-Back Survey (ACBS), and the National Health Interview Survey (NHIS) publishes national estimates of asthma burden. In FY 2022, CDC will continue to support the use of ACBS and publish national estimates of asthma burden.

Asthma Grants to Health Departments¹			
(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Number of Awards	25	25	25
- New Awards	0	0	0
- Continuing Awards	25	25	25
Average Award	\$0.604	\$0.604	\$0.604
Range of Awards	\$0.450–\$0.800	\$0.450–\$0.800	\$0.450–\$0.800
Total Awards	\$15.704	\$15.704	\$15.704

¹ These funds are not awarded by formula.

Environmental Public Health Activities Budget Request

Americans are impacted by environmental health threats to the water we drink, the air we breathe, the food we eat, and the spaces where we live, work, and play. The World Health Organization (WHO) estimates that, overall, 13 percent of the disease burden in the United States is due to environmental factors. The WHO also estimates that 5.6 million disability-adjusted life years and 398,000 deaths annually can be attributed to environmental factors in the United States.³⁰⁸

Our constant interactions with our environment affect our health, quality of life, and exacerbate health disparities. Children, the elderly, racial and ethnic minorities, the economically disadvantaged, and people with disabilities or chronic health conditions such as asthma are especially vulnerable to environmental hazards. According to a recent study conducted by the Environmental Protection Agency, Black Americans are disproportionately burdened by air pollution compared to White Americans—regardless of income.

CDC aims to protect all populations from environmental hazards, exposures, and threats. CDC programs funded under Environmental Public Health Activities support core environmental health programs and research that protect Americans from emerging and everyday environmental health threats wherever they live. These programs are critical for ensuring environmental public health practitioners at state, local, tribal, and territorial health departments have the resources, tools, and evidence-based guidance to detect, prevent, and control environmental public health hazards.

Environmental public health is a foundational area in state, tribal, local, and territorial public health departments with a rapidly expanding set of responsibilities for responding to emerging issues and emergencies to protect the public. These environmental health threats include diverse issues like drinking water contamination; unsafe retail food practices; extreme weather-related events, including hurricanes, wildfires, and flooding; the health effects of climate change; radiation and chemical emergencies and environmental and medical exposures to radiation; and community concerns about cancer clusters. CDC, in conjunction with partners within HHS and across the federal government, protects and secures the American people from these threats by identifying the environmental exposures that make people sick, investigating how those exposures are transmitted in the environment, and finding ways to eliminate the threat to people's health—thereby saving money and lives.

Budget Request

CDC's FY 2022 request of **\$150,600,000** for Environmental Health Activities is **\$103,000,000** above the FY 2021 Enacted level. The FY 2022 request includes a **\$100,000,000** increase for the Climate and Health program to expand the program to all states and territories to identify potential health effects associated with climate change and implement health adaptation plans. The FY 2022 request also includes \$3,000,000 to support operations of the Vessel Sanitation Program in the case that user fees cannot be collected.

Climate and Health Program

Climate change is already adversely impacting health and well-being in the United States, and these health impacts are projected to increase in the future. Climate-related events such as heat waves, floods, droughts, and extreme storms affect everyone, but not everyone is affected equally. Factors such as age, location, race, and occupation all affect an individual's resilience to climate-related health risks.

CDC's Climate and Health Program directly addresses these issues by supporting state, tribal, local, and territorial public health agencies to prepare for specific health impacts of a changing climate. Since 2009, the

³⁰⁸ Pugh, KH and Zarus, GM. May 2012. The Burden of Environmental Disease in the United States. *Journal of Env. Health*. Volume 74, Number 9.

program has provided local adaptation grants, conducted epidemiological studies, and created guidance and training. The Climate and Health Program (CHP) focuses on the public health-related aspects of climate extremes, including ways to reduce health risks by seeking to establish and use evidence-based interventions targeting the most vulnerable populations:

- Leading efforts to identify populations vulnerable to changes in climate.
- Preventing and adapting to current and anticipated health impacts.
- Ensuring systems are in place to detect and respond to current and emerging health threats.

As the only U.S. Government investment dedicated to preparing our nation to anticipate and adapt to the health effects linked to climate change, CDC's climate and health program is uniquely positioned to provide resources and assistance to some of the most at-risk communities around the country through its core program of data, science, and action:

- Establishing a national climate and health surveillance strategy that builds upon CDC's data modernization initiative and leverages NCEH's National Environmental Public Health Tracking Network;
- Expanding the science base, which consists of studying how a changing climate is impacting health as well as how communities can more effectively and equitably adapt to it;
- Increasing the capacity of federal, state, local, tribal, and territorial practitioners by leveraging the evidence base to design and implement context-specific adaptive actions within communities;
- Building the environmental health workforce capacity and expertise on climate change; and
- Telling the story, which means not only giving the best information we can about how climate will affect health, but also sharing best practices and examples of how communities are adapting.

Some tribal populations are among the most at-risk groups, often experiencing the worst effects of climate change because of higher exposure, higher sensitivity, and lower adaptive capacity due to historical, socioeconomic, and ecological reasons. CDC partners with the National Indian Health Board (NIHB) on the Climate-Ready Tribes Initiative (CRTI) to build capacity within American Indian and Alaska Native Tribes to identify, assess, and take action to mitigate climate-related health threats. This initiative currently funds six Tribes (Seneca Nation of Indians, Winnebago Tribe of Nebraska, Greenville Rancheria, the Pala Band of Mission Indians, the Sitka Tribe of Alaska, and the Lummi Nation). The NIHB shares fact sheets and climate resources created by funded tribes and hosts webinars for the Climate and Health Learning Community.

Currently CDC funds 16 states, five cities, and six tribes to anticipate the health effects of climate change by applying the best climate science available, predicting health impacts, and preparing public health programs to protect their communities by following the Building Resilience Against Climate Effects (BRACE) Framework. CDC developed the BRACE framework to help communities prepare for the health effects of climate change by anticipating climate impact, assessing vulnerabilities, projecting disease burden, assessing public health interventions, developing adaptation plans, and evaluating the impact and quality of activities.

CDC collaborates with states, cities, territories, and tribes to develop and implement adaptation plans to protect at-risk populations and locations. For example, to address Extreme Heat, the San Francisco Department of Public Health established a Heat Vulnerability Index to identify factors that make neighborhoods more vulnerable to extreme heat such as the amount of heat-absorbing concrete and tree density. This index is being used in a variety of adaptation efforts such as guiding where to designate cooling centers and where to conduct education and outreach efforts. Other local agencies are using the index, too. For example, city planners use the index to determine where more trees should be planted to offer shade and boost cooling effects.

In addition, CDC scientists are working to both advance climate science and initiate new activities. In 2020 CDC’s Tracking Program, in collaboration with the Climate and Health Program, launched CDC’s Heat & Health Tracker. This first-of-its kind online tool can help emergency and public health planners prepare for and respond to extreme heat events. Users can explore how extreme heat affects their county, identify at-risk populations, and explore available response resources. The Heat & Health Tracker provides timely, user-friendly, local-level heat and health data that can be used to inform decisions, describe and locate vulnerable populations, and determine resources and potential needs.

CDC also recently (August 2020) released a report on “Preparing for the Regional Health Impacts of Climate Change in the United States” that not only empowers communities to protect public health from a changing climate, but also helps public health planners and decision makers to better understand the health impacts climate change has and will have on their community, and actions that can be taken to prepare for and respond to those impacts.

In FY 2022, CDC will use additional resources to expand the Climate and Health program to support all states and territories to identify potential health effects associated with climate change and implement health adaptation plans. An expansion of existing strategies and development and implementation of new strategies would further expand the reach and public health impact of the Climate and Health Program:

- Supporting additional health departments through technical assistance and funding
- Using health equity and environmental justice as a cornerstone for climate and health work
- Expanding the state of the science and build the evidence base for climate adaptations
- Enhancing surveillance and track climate-related disease outcomes
- Coordinating study of health impacts of greenhouse gas mitigation activities
- Enhancing the effectiveness of climate and health risk communication.

Safe Water

Clean and safe water is core to our nation's health, security, and way of life. The 330 million adults and children in the United States rely on our nation’s water supply for drinking, recreation, sanitation, and hygiene. Environmental contamination and waterborne illness occur naturally, as well as through industrial processes and accidents, water system failure, and changing environmental conditions, including extreme weather events such as storms and floods. Overall, water-related illness, such as Legionnaires’ disease, results in an estimated 40,000 hospitalizations and \$970 million in healthcare costs each year.³⁰⁹

An estimated 42.5 million Americans use drinking water sources that are not monitored for contaminants; those in rural or tribal communities are at particular risk for exposure to contaminated water sources. CDC’s Safe Water program helps protect public health by decreasing environmental threats and reducing exposures to waterborne contaminants in water systems. The Safe Water program provides expertise with an environmental health focus to state, local, tribal, and territorial health officials to address or eliminate environmental threats to water systems and reduce exposures to waterborne contaminants. CDC’s Safe Water program has conducted research to estimate contaminant levels in well water, assess the disease and economic burden of exposure to arsenic in private wells, and evaluate the effectiveness of interventions to prevent harmful exposures related to unmonitored water sources.

Through its new Environmental Health Capacity Program (EHC), CDC awarded approximately \$8.7 million in FY 2020 to 50 recipients to strengthen capacity of health department environmental health programs and improve

³⁰⁹ Adam, EA et al. 2017. “Prevalence and direct costs of emergency department visits and hospitalizations for selected diseases that can be transmitted by water, United States,” J. Water Health. 15(5):673-83.

overall environmental health practice. All EHC recipients will have projects to establish and strengthen procedures to build core capacity around data. In addition, CDC funds 24 of the recipients to strengthen environmental health programs and services for drinking water and recreational water. Efforts under the Safe Water for Community Health (Safe WATCH) program include identifying at-risk water systems with elevated levels of chemical, radiological, and biological contaminants (e.g., arsenic, uranium, nitrates, and *E. coli*). Between 2015 and 2020, the state and county health departments participating in Safe WATCH sampled a total of 26,427 wells and found that approximately 16 percent of the wells had contaminated water considered unsafe to drink.

In FY 2020, CDC provided \$4.1 million to 37 (32 state, 4 local, and the District of Columbia) health departments to better detect and stop outbreaks of Legionnaires' disease through the Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC). CDC works with the health departments to develop safe water management plans to control the presence of *Legionella* bacteria in building plumbing systems. Over 65 percent of documented waterborne disease outbreaks are caused by *Legionella* bacteria. As a result, CDC has increased its focus on the prevention of *Legionella* outbreaks.

CDC's Safe Water program has been integral to CDC's prevention and response activities. In FY 2020, CDC responded to 13 outbreaks of Legionnaires' disease. A recent outbreak of Legionnaires' disease associated with a state fair in September 2019 resulted in 4 deaths and 96 hospitalizations. Findings from this investigation suggest that exposure occurred where vendors were displaying hot tubs. This led to CDC publication of a Health Advisory alerting environmental and public health practitioners about the need to maintain, clean, and disinfect hot tubs properly to reduce potential exposure to *Legionella*.

Hazards such as drowning, exposure to pool chemicals, or waterborne illness from swimming in unsafe pools and aquatic facilities combine to cause over 3,000 deaths, 5,000 hospitalizations, and thousands of illnesses annually. CDC protects the American people during their 300 million pool visits every year through the national Model Aquatic Health Code, which provides voluntary guidance for local and state agencies on the design, construction, operation, and maintenance of pools, spas, and hot tubs.

In FY 2022, CDC will continue to support state, territorial, local, and tribal governments to protect their citizens from waterborne contamination and illness, including prevention and response to legionellosis outbreaks and other contaminants found in building plumbing systems. CDC will also continue to prioritize efforts to keep small drinking water systems free from contamination.

CDC works with communities to examine the impact of exposure to per- and polyfluoroalkyl substances (PFAS), a large group of man-made chemicals. CDC also developed the PFAS Exposure Assessment Technical Tools to help state and local health agencies accurately assess exposures to PFAS in their communities. Over the last decade, interest in PFAS has been growing. CDC/ATSDR and our partners in state health departments are investigating exposure to PFAS at a number of sites.

Harmful algal blooms (HABs), the rapid growth of algae in fresh, marine, or brackish waters that produce toxins and can cause a variety of illnesses in people and animals, are increasing in frequency, geographic extent, and severity. This may be due to climate change, farming practices, storm and wastewater runoff, and other environmental factors, making this a very critical emerging environmental public health issue. CDC provides emergency response and scientific services to support state and local officials dealing with HABs. In FY20, through our new Environmental Health Capacity Program, CDC is supporting several state and local health departments to conduct HABs activities. CDC is also supporting projects through the Safe WATCH program to develop a vulnerability index for HABs, update the interagency HAB event surveillance system, and create an internship program for HABs surveillance and investigation.

CDC, in collaboration with the Florida Department of Health, is currently conducting a study in and around Lake Okeechobee to assess human exposures and health effects associated with exposure to cyanobacterial HABs (CyanoHABs). The study will help inform Florida health departments about the effects CyanoHABs may have on the coastal population and will provide insights on local public health actions that can be taken to reduce exposures to CyanoHABs.

CDC is also currently contributing to peer-reviewed publications on recently conducted evaluations on the utility of using electronic health records to identify HAB exposure, and a manuscript on a study that demonstrated how data collected at poison control centers using a follow-up questionnaire was useful in identifying sources and risk factors associated with HAB exposures. The latter activity will inform HAB incident responses, communication, and outreach at the state and national level.

Safe Water Grants (EHC)¹			
(dollars in millions)	FY 2022		
	FY 2020 Final	FY 2021 Enacted	President's Budget
Number of Awards	24	24	24
- New Awards	24	0	0
- Continuing Awards	0	24	24
Average Award	\$0.102	\$0.102	\$0.102
Range of Awards	\$0.049–\$0.249	\$0.049–\$0.249	\$0.049–\$0.249
Total Awards	\$2.458	\$2.458	\$2.458

¹These funds are not awarded by formula.

Environmental Health Assessments - Legionnaires' Disease (ELC)¹			
(dollars in millions)	FY 2022		
	FY 2020 Final	FY 2021 Enacted	President's Budget
Number of Awards	37	37	37
- New Awards	0	0	0
- Continuing Awards	37	37	37
Average Award	\$0.023	\$0.023	\$0.023
Range of Awards	\$0.005–\$0.430	\$0.005–\$0.430	\$0.005–\$0.430
Total Awards	\$1.000	\$1.000	\$1.000

¹These funds are not awarded by formula.

Vessel Sanitation Program

CDC's Vessel Sanitation Program (VSP) has a long history of working with the cruise ship industry to prevent and control the introduction, transmission, and spread of gastrointestinal (GI) illnesses on cruise ships. VSP's knowledge of cruise ship reporting structures, facilities, operations, management, and construction enabled the program to play a critical role in detecting, mitigating, and preventing the spread of COVID-19 on cruise ships. Like other close-contact environments, scientific evidence points to cruise ships as a high risk setting for person to person transmission of respiratory viruses like COVID-19 through exposures to respiratory droplets or contact with contaminated surfaces.

VSP consists of environmental health officers and epidemiologists that:

- Review, inspect, and provide guidance on cruise ship sanitation, food safety, water safety, ventilation, and vector control activities during routine biannual ship inspections

- Monitor GI illnesses and respond to outbreaks
- Train cruise ship managers on public health best practices to prevent and control transmission of GI illness and other infectious illnesses
- Provide reliable and current public health information for passengers, crew, and other stakeholders
- Work to better understand how environmental systems and practices on cruise ships contribute to the spread of viruses and other pathogens among passengers and crew

In FY 2019, VSP conducted 177 operations inspections and 49 construction inspections, plan reviews, and equipment reviews to ensure ships meet public health standards. Additionally, VSP trained 728 ship staff on VSP's public health practices and 54 ship staff on VSP's construction and design guidelines. VSP took action to prevent the spread of diseases on cruise ships, including monitoring 21 elevations and outbreaks of acute gastroenteritis on cruise ships, working with cruise ship staff and lines to determine the causes. For example, VSP investigations led to the identification of norovirus-contaminated frozen raspberries from China as the point source food exposure responsible for 26 outbreaks in 12 weeks in one cruise line's fleet of ships. VSP also began using geospatial analysis to better understand the distribution of GI and other infectious diseases on cruise ships and to identify contributing environmental factors. CDC applied these techniques during the COVID-19 response.

Early in the COVID-19 outbreaks, VSP developed and implemented cruise ship disinfection and quarantine plans. The quarantine of the Grand Princess led CDC to rapidly develop and implement a ship disinfection, quarantine, and passenger disembarkment plan. These actions prevented additional cases of COVID-19 by limiting exposures during the ship-based quarantine of the Grand Princess cruise ship crew.

In FY 2020, the program strengthened the collection and use of environmental health data to augment epidemiological and laboratory activities on cruise ships. VSP also developed in-depth environmental health training to the environmental health workforce and the cruise ship industry on the control of COVID-19 and other communicable diseases on cruise ships. Addressing the crew member mental health needs during the pandemic, VSP created infographics and a web-based toolkit including resources and Q&As.

CDC's Global Migration Task Force Maritime Unit, in which VSP is fully embedded, monitored an average of 60 (range: 48, 102) cruise ships traveling within U.S. jurisdiction during the CDC-imposed No Sail Order from July to September 2020. During this time, VSP also managed the weekly CDC updates to the Status of No Sail Order Response Plans and Commercial Transport of Crew for use by the Federal Aviation Administration and other federal, state, and local partners to verify whether cruise ships are allowed to use commercial travel for crew transportation. CDC received almost 13,000 public comments from the cruise industry and general public during a 60-day Request for Information (RFI) that are being used to craft updates to ship guidance, including the phased Framework for Conditional Sail Order (CSO). Between April and May 2021, CDC published requirements and recommendations for simulated voyages that will enable cruise ship operators to apply for conditional sailing certificates. Though CDC may adjust these requirements and recommendations based on public health considerations or other factors, the conditional sailing certificates enable restricted passenger voyages to begin.

COVID-19 greatly increased the demand for VSP support and guidance to the cruise industry and cruising public. VSP responsibilities and workload became more demanding and time consuming due to enhanced procedures required to prevent COVID-19 transmission on cruise ships. In the future VSP disease prevention activities will include increased surveillance to understand transmission, conduct checks on the implementation of safety guidelines, and disseminate findings and guidance to the cruise ship industry, traveling public, public health professionals, and state and local authorities.

Budget Request

In previous years, funding to support the work of the Vessel Sanitation Program (VSP) was obtained through the collection of user fees for cruise ship inspection. During the COVID-19 response, these inspections and the collection of fees have been suspended. In FY 2022, CDC is requesting \$3,000,000 to support operations of the Vessel Sanitation Program in the case that user fees cannot be collected.

Before the cruise industry can be fully operational and revenue generating, there will be increased demand for the activities of the Vessel Sanitation Program. Like other close-contact environments, scientific evidence supports cruise ships as a high risk for transmission of COVID-19 from person to person through exposure to respiratory droplets or contact with contaminated surfaces. The program will conduct surveillance to understand transmission, provide enhanced training to the cruise ship industry, conduct checks on the implementation of safety guidelines and disseminate findings and guidance to the cruise ship industry, traveling public, public health professionals, and state and local authorities. In addition, the expanded requirements for cruise ship inspections may exceed what can be reasonably charged for user fees during the initial start-up period.

Environmental Health Security, Emergency Preparedness, and Response

CDC provides critical assistance and expertise to help federal, state, and local entities respond to disease outbreaks and emerging health threats, build capacity in disaster epidemiology to better prepare for and respond to public health emergencies, investigate and respond to toxic health threats, provide unique expertise and training regarding radiation exposure and radiological and nuclear events, and work to ensure that the nation has a strong and knowledgeable environmental health workforce now and in the future. CDC's environmental health workforce supports all non-infectious disease emergency response scenarios (chemical, radiological, and natural disasters).

Emerging environmental health threats are non-infectious exposures and resultant health effects that are novel, newly recognized, or increasing in public health significance. CDC has a unique team of environmental epidemiology and medical toxicology experts that have assisted public health agencies in the U.S. and globally with responding to and investigating emerging environmental health hazards as well as preventing outbreaks of illness caused by non-infectious, toxic agents. For example, in FY 2018, CDC's epidemiology and medical toxicology experts assisted state and local health departments, poison control centers, healthcare providers, and laboratories during a large, multi-state outbreak investigation of brodifacoum poisoning, a long-acting anticoagulant used as a rodenticide, among persons who used synthetic cannabinoids. The outbreak resulted in more than 320 cases, including eight deaths, of severe coagulopathy (bleeding that occurs because the blood will not clot) during March–October 2018 across 10 states. During the recent COVID-19 pandemic, CDC's multidisciplinary team of epidemiologists and medical toxicologists identified and assisted states in responding to emerging environmental concerns related to ingesting alcohol-based hand sanitizers containing methanol, and elevated chemical exposures related to misuse of cleaning and disinfectant products. CDC's Toxicological Outbreak Investigation course also helps build capacity for international, state, and local public health agencies to respond to similar outbreaks caused by non-infectious environmental contaminants.

Public health and emergency management officials rely on CDC's disaster epidemiology experts to help build capacity at the state and local levels to better prepare for and respond to public health emergencies. In particular, CDC's disaster epidemiologists provide guidance, trainings, tools, and other resources related to disaster-related morbidity and mortality surveillance and community needs assessments before or after a public health emergency occurs. Some examples of their products include a rapid needs assessment toolkit—Community Assessment for Public Health Emergency Response (CASPER)—to identify information gaps, initiate public health action, quickly prioritize resources in response to a disaster or emergency, and assess new or

changing community needs. Since FY 2016, CDC has conducted 33 CASPERs, provided technical assistance on 89 others, and trained over 2,000 public health staff on the CASPER methodology. Recently, CDC's disaster epidemiologists developed a Death Certification training program that is now required training for all death certifiers in Puerto Rico, with an emphasis on the disaster-related deaths curriculum for physicians and physician assistants. A signed Administrative Order was released by the Puerto Rico Secretary of Health in September, 2020.

CDC's Environmental Health Training in Emergency Response courses teach state and local officials how to restore clean drinking water, dispose of sewage properly, ensure food is protected from unsafe environmental conditions, and prevent the spread of diseases after disasters. CDC disaster epidemiologists also help build state and local capacity in collecting and reporting morbidity and mortality data during public health emergencies. In FY 2018, CDC examined circumstances of deaths that occurred in the contiguous United States following Hurricane Irma and identified two unique subcategories of heat-related and oxygen-dependent deaths in which power outage contributed to exacerbation of an existing medical condition. These results emphasized the importance of conducting detailed assessments of circumstances of death following natural disasters to help public health practitioners develop more effective public health interventions to prevent deaths in future disasters.

In 2020, CDC developed guidance and considerations for hurricane and other natural disaster planning, preparedness, response, and recovery in light of COVID-19, including developing tabletop exercise scenarios to challenge/train contact tracers and shelter managers prior to standing up hurricane shelters that may receive individuals with COVID-19.

CDC has leveraged its existing environmental health resources and expertise to support its response to the COVID-19 pandemic, as environmental factors are inextricably linked to the spread of COVID-19. NCEH has made important contributions to COVID-19 response that have included a broad range of roles and types of expertise: direct outbreak response, surveillance, data management, survey development, epidemiological analysis, technical assistance, communications planning, and operations coordination. In addition, CDC staff have served as the subject matter experts on the CDC's COVID-19 response team in environmental health service areas such as cleaning and disinfection, ventilation, food services, safe water systems, and environmental health data and tracking to guide safe reopening and prevent exposure and infection in places where people live, work, and play. For example, CDC deployed field teams of environmental health experts to collaborate with Indian Health Service and Navajo Nation to improve access to safe water sources and identify homes at higher risk for COVID-19 in Navajo Nation. Many residents of Navajo Nation have limited access to running water and live in multigenerational homes, which makes community interventions like handwashing and social distancing more difficult to implement. CDC's actions helped implement effective community-based interventions in Navajo Nation to help slow the spread of COVID-19.

Preparing for and Responding to Adverse Weather Events and Flooding

CDC works to secure communities against the effects of adverse weather events and flooding. During the 2017 and 2018 hurricane seasons, CDC deployed staff to work on the hurricane response, including disaster epidemiologists and environmental health experts. These staff protected people from toxic exposures spread by flood waters and assessed the impact of the storm on healthcare facilities. They also worked with the Assistant Secretary for Preparedness and Response (ASPR) and FEMA to prioritize remediation efforts, inform residents about effectively and safely cleaning up mold, and help local agencies with health communications.

Additionally, during this unprecedented year for hurricanes and wildfires, CDC worked with HHS, FEMA, NOAA, the American Red Cross and other partners to ensure states had the information they needed to keep people safe, including guidance about how to shelter people safely during the pandemic. CDC sent teams to Louisiana

to support recovery efforts after Hurricanes Laura, Marco, Delta, and Zeta affected the state, and has provided technical assistance and support to Oregon for wildfire recovery.

Radiological and nuclear preparedness and radiation exposure hazards

The public health response to radiological and nuclear incidents is uniquely challenging and requires specific skill sets not readily available within state and local public health communities. Radiation experts from CDC are developing science-based interventions and strategies and stand ready for a 24/7 response to potential radiological and nuclear threats. The release of radioactive material would require consideration of protective measures (e.g., evacuation and shelter-in-place), provision of subject matter expertise in support of multi-agency coordination of consequence management activities, and consideration of radiological and nuclear impacts upon critical response and recovery.

During a radiological and nuclear incident, there would be significant competing demands for relevant subject matter experts at every level of the response. In addition, risk communication, specialized laboratory response, epidemiology, and medical countermeasures activities require personnel with expertise and competencies in radiological and nuclear response. CDC has the unique expertise required to lead the public health response to radiological and nuclear incidents. State and local health departments rely on CDC expertise to train, plan for and respond to a nuclear or radiological emergency.

CDC's radiation protection experts develop evidence-based environmental public health strategies and interventions to protect the public from radiation-related hazards, and disseminate best practices guidance, training, tools, and information to professional and lay audiences. CDC also participates in responses to major nuclear incidents. In the past decade, CDC has provided more than 21,000 emergency radiation preparedness toolkits to clinicians and state and local public health professionals and other national and international partners. Formal and informal evaluation has indicated that these are valuable resources for planning (pre-event) and just-in-time (intra-event) use. CDC also provides expertise and assistance to federal, state and local partners in exercising preparedness plans to enhance effective public health response to a radiation emergency and helped inform the planning for and response to a national-level exercise that simulated detonation of an improvised nuclear device in an urban area.

Public health officials also rely on the expertise of CDC's radiation program to assist in investigations of public exposures from environmental, medical and emergency sources, and provide evidence-based recommendations to protect the public. CDC assesses radiation-related hazards of public health concern, such as excess exposures from diagnostic medical procedures, particularly among children; radon exposure, which is the second leading cause of lung cancer in the United States; technically enhanced naturally occurring radioactive materials (e.g., from fracking); non-ionizing radiation sources; and other new radiation technologies. CDC also is studying the effects of low-dose ionizing radiation received from environmental, emergency and other sources to protect the public. Examples of radiation-related investigations include:

- In FY 2019, CDC collaborated with the National Council for Radiation Protection and Measurements (NCRP) and published "Medical Radiation Exposure of Patients in the United States," that highlighted that efforts over the past decade led to a 20 percent drop in a patient's radiation dose.³¹⁰
- CDC assisted the Ohio Department of Health in investigating potential contamination in a school from a nearby nuclear facility in 2019.
- CDC coordinated efforts to contact, evaluate, test and follow-up with American citizens potentially exposed to radioactive material (Polonium 210) used in a poisoning incident in London.

³¹⁰ <https://www.healthimaging.com/topics/molecular-imaging/radiology-20-drop-patients-radiation-dose>.

- The Radiation Studies program, in collaboration with the Environmental Public Health Tracking Program and other partners, developed and released CRC SimPLER, a free, publicly available, online tool to help state and local emergency and public health planners prepare for setting up community reception centers (CRCs) to monitor people following a large-scale radiation emergency.

Chemical Threats and Preparedness

Sea disposal was common for excess, obsolete, or unserviceable chemical munitions prior to 1970. Significant storms, commercial fishing, and dredging operations can bring these munitions to the surface, creating a public health hazard to the worker and food supply. CDC, along with other partners, developed tools for commercial fishing personnel encountering chemical munitions to help reduce risks of exposure. CDC continues to be available to provide technical assistance for commercial fishing as well as to hospitals, and State and Federal agencies when chemical munitions are recovered.

It is estimated that the Deepwater Horizon oil spill discharged nearly 5 million barrels (>200 million gallons) of oil in the Gulf of Mexico. The use of dispersants as part of the Deepwater Horizon response raised concerns regarding the behavior and fate of the oil and dispersants, and their potential impacts on human health and the environment. CDC experts are assisting the Coast Guard, EPA, and NOAA, to determine the health impacts of various oil dispersion chemicals and have represented HHS on the National Response Team.

Food Safety

Every year, 48 million Americans get sick from foodborne diseases, and 3,000 people die. The United States spends approximately \$78 billion per year on costs (healthcare, workplace, and other) related to foodborne illnesses.³¹¹ Environmental factors are responsible for many of these foodborne illnesses, particularly in restaurants, where two-thirds of these outbreaks begin. CDC supports state and local environmental health programs in the identification and prevention of environmental factors that contribute to foodborne illness outbreaks. In FY 2020, CDC awarded \$1.5 million to eight state and local health department environmental health programs to work together to improve environmental health practice through research on identifying and preventing environmental risk factors contributing to foodborne illness.

CDC collects and translates high-quality surveillance data on the environmental causes of foodborne outbreaks through the National Environmental Assessment Reporting System (NEARS). NEARS is the only national effort to systematically collect, analyze, interpret, and disseminate environmental data that help identify the causes of outbreaks and prevent them. In FY 2020, CDC modernized NEARS and moved it to the same reporting platform as CDC's other foodborne outbreak reporting system, the National Outbreak Reporting System (NORS). This action is a significant move toward integrating NEARS and NORS. This action also makes data entry easier for reporting sites.

CDC released a surveillance summary based on NEARS data in March 2019. This summary shows how NEARS data can help prioritize training and interventions for state and local food safety programs and the retail food establishment industry by identifying gaps in food safety policies and practices and types of establishments vulnerable to outbreaks. In September 2020, CDC published a journal article based on NEARS data that found contamination of food by ill food workers contributed to more than half of outbreaks with contributing factor data and that most establishments with outbreaks lacked written policies for practices to keep food from being contaminated by workers.

³¹¹ Scharff, R. (2012). Economic burden from health losses due to foodborne illness in the United States. *Journal of Food Protection*, 75(1), 123–131.

To support a well-trained environmental health workforce and to ensure that high-quality data are collected and reported to NEARS, CDC delivered extensive, in-person, interactive training on foodborne illness outbreak investigations in May 2019 to food safety program representatives from 22 state and local health departments. Participants rated the training highly and asked for the training to be delivered to their colleagues. In spring 2020, CDC supported another offering of the NEARS Explorers program, in which state and local health department personnel interested in NEARS participated in webinars and meetings to learn about NEARS. This program led to a 15% increase in the number of state and local jurisdictions participating in NEARS.

CDC's Environmental Health Specialists Network (EHS-Net) supports state and local environmental health and epidemiological staff to identify and address environmental factors of foodborne outbreaks. Because EHS-Net relies on staff from environmental health programs with food safety skills and experience, it is unique in its ability to collect real-time data on food safety policies and practices in retail food establishments. EHS-Net findings have been used to inform significant, national food safety policy and practice guidelines. Most recently, EHS-Net work on links between kitchen manager food safety certification and restaurant food safety were used to support changes to the 2017 FDA Food Code that strengthened manager certification requirements (i.e., the Food Code states that food service establishments must have a certified kitchen manager present during all hours of operation). EHS-Net findings also recently informed the development of CDC's new version of Epi-Ready, an influential training on foodborne outbreak investigation for environmental and public health professionals. In FY 2022, CDC will continue efforts to promote best practices and conduct trainings to ensure food safety in retail establishments.

In FY 2022, CDC will continue food safety programs by:

- responding to environmental health emergencies,
- addressing environmental causes of foodborne and waterborne illness outbreaks,
- providing training and guidance for the nation's environmental health workforce,
- providing expertise on disaster epidemiology,
- providing expertise on radiation and health, and
- supporting public health program partners to detect, prevent, and control EH hazards through data-driven, evidence-based approaches

State Table: Environmental Health Funding¹

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$600,000	\$600,000	TBD	TBD
Alaska	\$316,414	\$316,414	TBD	TBD
Arizona	\$1,311,155	\$1,311,155	TBD	TBD
Arkansas	\$0	\$0	TBD	TBD
California	\$3,101,193	\$3,101,193	TBD	TBD
Colorado	\$1,459,645	\$1,459,645	TBD	TBD
Connecticut	1,705,647	\$1,705,647	TBD	TBD
Delaware	\$376,489	\$376,489	TBD	TBD
District of Columbia	\$621,292	\$621,292	TBD	TBD
Florida	\$2,544,875	\$2,544,875	TBD	TBD
Georgia	\$1,673,901	\$1,673,901	TBD	TBD
Hawaii	\$480,000	\$480,000	TBD	TBD
Idaho	\$40,000	\$40,000	TBD	TBD
Illinois	\$2,127,054	\$2,127,054	TBD	TBD
Indiana	\$1,390,115	\$1,390,115	TBD	TBD
Iowa	\$2,458,528	\$2,458,528	TBD	TBD
Kansas	\$1,194,388	\$1,194,388	TBD	TBD
Kentucky	\$1,858,398	\$1,858,398	TBD	TBD
Louisiana	\$1,362,030	\$1,362,030	TBD	TBD
Maine	\$2,181,505	\$2,181,505	TBD	TBD
Maryland	\$2,054,837	\$2,054,837	TBD	TBD
Massachusetts	\$2,301,945	\$2,301,945	TBD	TBD
Michigan	\$9,831,520	\$9,831,520	TBD	TBD
Minnesota	\$3,464,518	\$3,464,518	TBD	TBD
Mississippi	\$534,000	\$534,000	TBD	TBD
Missouri	\$2,161,963	\$2,161,963	TBD	TBD
Montana	\$500,000	\$500,000	TBD	TBD
Nebraska	\$482,812	\$432,812	TBD	TBD
Nevada	\$621,900	\$621,900	TBD	TBD
New Hampshire	\$2,952,080	\$2,952,080	TBD	TBD
New Jersey	\$2,352,736	\$2,352,736	TBD	TBD
New Mexico	\$2,004,245	\$2,004,245	TBD	TBD
New York	\$5,395,142	\$5,395,142	TBD	TBD
North Carolina	\$1,732,525	\$1,732,525	TBD	TBD
North Dakota	\$0	\$0	TBD	TBD
Ohio	\$1,374,000	\$1,374,000	TBD	TBD
Oklahoma	\$498,096	\$498,096	TBD	TBD
Oregon	2,099,740	\$2,099,740	TBD	TBD

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Pennsylvania	\$1,571,253	\$1,571,253	TBD	TBD
Rhode Island	\$1,994,902	\$1,994,902	TBD	TBD
South Carolina	\$534,000	\$534,000	TBD	TBD
South Dakota	\$0	\$0	TBD	TBD
Tennessee	\$991,646	\$991,646	TBD	TBD
Texas	\$3,284,301	\$3,284,301	TBD	TBD
Utah	\$1,774,170	\$1,774,170	TBD	TBD
Vermont	\$2,489,010	\$2,489,010	TBD	TBD
Virginia	\$3,148,938	\$3,148,938	TBD	TBD
Washington	\$2,456,606	\$2,456,606	TBD	TBD
West Virginia	\$481,600	\$481,600	TBD	TBD
Wisconsin	\$2,719,883	\$2,719,883	TBD	TBD
Wyoming	\$0	\$0	TBD	TBD
Subtotal, States	\$88,610,997	\$88,610,997	TBD	TBD
American Samoa	\$0	\$0	TBD	TBD
Guam	\$503,021	\$503,021	TBD	TBD
Marshall Islands	\$0	\$0	TBD	TBD
Micronesia	\$0	\$0	TBD	TBD
Northern Marianas	\$0	\$0	TBD	TBD
Puerto Rico	\$510,000	\$510,000	TBD	TBD
Palau	\$0	\$0	TBD	TBD
Virgin Islands	\$0	\$0	TBD	TBD
Subtotal, Territories	\$1,013,021	\$1,013,021	TBD	TBD
Total Resources	\$89,624,018	\$89,624,018	TBD	TBD

¹This table is a compilation of NCEH grant programs Building Resilience Against Climate Effects, EH16-1602, 93.070; Radiation Health Protection and Measurements Involving Radiation or Radioactive Materials, EH16-1604, 93.070; Childhood Lead Poisoning Prevention, EH17-1701/EH18-1806, 93.197; Enhancing Innovation and Capabilities of the Environmental Public Health Tracking Network, EH17-1702, 93.070; Lead Exposure Registry of Flint Residents – Michigan, EH17-1704, 93.197; Identifying Common and Unique Barriers to the Exchange of Hospital Inpatient and Emergency Department Data, EH18-1801, 93.070; Developing Standards and Principles to Effectively Administer and Integrate Public Health Statistics and Information Systems into the National Environmental Public Health Tracking Network, EH18-1802, 93.070; Radiation Protection of the Public as Practiced by the State and Local Radiation Programs; EH18-1803, 93.070; State-Based Public Health Laboratory Biomonitoring Programs, EH19-1901, 93.070; A Comprehensive Public Health Approach to Asthma Control Through Evidence-Based Interventions, EH19-1902, 93.070; Promoting Asthma Friendly Environments Through Partnerships and Collaborations, EH20-2002, 93.070; National Public Health Surveillance for Chemical and Radiologic Exposures and Emerging Drug Threats, EH20-2003, 93.070; Enhancing Disease Detection in Newborns: Building Capacity in Public Health Laboratories, EH20-2004, 93.065; Strengthening environmental health capacity (EHC) to detect, prevent, and control environmental health hazards through data-driven, evidence-based approaches, EH20-2005, 93.070; and represents all funding within a jurisdiction (including funding to local, tribal, and other grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://wwwn.cdc.gov/FundingProfiles/FundingProfilesRIA/>.

INJURY PREVENTION AND CONTROL

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$677.379	\$682.879	\$1,103.169	+\$420.290
Total Request	\$677.379	\$682.879	\$1,103.169	+\$420.290
FTEs	419	480	860	380
-- Intentional Injury	<u>\$119.050</u>	<u>\$123.550</u>	<u>\$283.550</u>	<u>+\$160.000</u>
-- Domestic Violence and Sexual Violence	\$33.700	\$34.200	\$39.200	+\$5.000
-- <i>Child Maltreatment</i>	\$7.250	\$7.250	\$7.250	\$0
-- <i>Child Sexual Abuse Prevention</i>	\$1.000	\$1.500	\$1.500	\$0
-- Community and Youth Violence Prevention	\$15.100	\$15.100	\$115.100	+\$100.000
-- Domestic Violence Community Projects	\$5.500	\$5.500	\$10.500	\$5.000
-- Rape Prevention	\$50.750	\$51.750	\$101.750	\$50.000
-- Suicide Prevention	\$10.000	\$12.000	\$12.000	\$0
-- Adverse Childhood Experiences	\$4.000	\$5.000	\$5.000	\$0
-- NVDRS	\$23.500	\$24.500	\$34.500	+\$10.000
-- Unintentional Injury	<u>\$8.800</u>	<u>\$8.800</u>	<u>\$8.800</u>	<u>\$0</u>
-- Traumatic Brain Injury (TBI)	\$6.750	\$6.750	\$6.750	\$0
-- Elderly Falls	\$2.050	\$2.050	\$2.050	\$0
-- Injury Prevention Activities	\$28.950	\$28.950	\$28.950	\$0
-- Opioid Overdose Prevention and Surveillance	\$475.579	\$475.579	\$713.369	+\$237.790
-- Injury Control Research Centers	\$9.000	\$9.000	\$9.000	\$0
-- Firearm Injury and Mortality Prevention Research	\$12.500	\$12.500	\$25.000	+\$12.500

Enabling Legislation Citation: PHS A § 203*, PHS A § 214, PHS A § 301, PHS A § 304, PHS A § 307, PHS A § 308, PHS A § 310, PHS A § 311, PHS A § 317, PHS A § 317N*, PHS A § 319, PHS A § 319D*, PHS A § 327, PHS A § 352, PHS A § 391, PHS A § 392, PHS A § 392A*, PHS A § 393, PHS A § 393A*, PHS A § 393B, PHS A § 393C, PHS A § 393D, PHS A § 394, PHS A § 394A*, PHS A § 399, PHS A § 399P*, PHS A § 1102, PHS A § 1706*, Bayh-Dole Act of 1980 (P. L. 96-517), Family Violence Prevention and Services Act §§ 303* and 314, National Narcotics Leadership Act of 1988 (chapter 2), Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities (SUPPORT) Act § 7011 and § 7131 (P. L. 115-271), Comprehensive Addiction and Recovery (CARA) Act of 2016 § 102 (P. L. 115.271), Violence Against Women and Department of Justice Reauthorization Act of 2005 § 402* (P. L. 113-4)

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural; Competitive Cooperative Agreements/Grants, including Formula Grants; and Competitive Contracts

CDC's goal is to keep people safe where they live, work, play, and learn. It is the nation's leading authority on violence and injury prevention. This includes detecting, understanding, and addressing trends in public health problems such as suicide and substance use disorder. Like diseases, injuries are preventable—they do not occur

at random. CDC prevents violence and injuries using the same public health methods that are used to prevent diseases: carefully defining the problem through surveillance, studying factors that increase or decrease risk for injury, designing and evaluating interventions that target these risk factors, and taking steps to ensure that proven strategies are implemented in communities nationwide.

As the world grapples with the worst public health crisis in a century, CDC is working with many state and local health departments to implement violence and injury prevention programs while they simultaneously respond to the COVID-19 pandemic. Health departments have needed to adapt programs and services to a virtual environment as part of this response.

CDC is leveraging its capabilities to actively advance health equity and to address the epidemic of systemic racism. Achieving health equity requires working across government to modernize public health and its infrastructure in a way that takes stock of social determinants of health, such as inadequate housing, lack of access to healthy water, and racial discrimination, as well as the resulting trauma that adversity may have on emotional and physical well-being. Childhood trauma has a tremendous impact on health, including increased risk for suicide and opioid overdose, as well as future violence victimization and perpetration. Addressing Adverse Childhood Experiences (ACEs), as well as childhood adversity itself, is critical to primary prevention. Together, these public health approaches to protecting environmental, social, and emotional health prevent both injuries and infectious and chronic diseases.

CDC applies its scientific expertise in surveillance, research, prevention, and response to increase understanding of the overdose epidemic as it evolves, and to implement data-informed prevention efforts to reduce overdose, prevent suicide, and protect children and youth from ACEs. ACEs increase the risk of overdose and suicide later in life. Understanding the shared root causes between ACEs, overdose, and suicide is essential to informing more holistic and effective programs and policies.

With support from Congress in advance of the pandemic, CDC was able to invest in modernizing public health infrastructure through Injury Prevention and Control activities, which helped build enterprise-wide capacity when the pandemic arrived. For example, CDC previously made improvements to data systems such as the National Syndromic Surveillance Program (NSSP), to improve timely tracking of opioid-related overdoses. These improvements were later leveraged to address other urgent threats like e-cigarette and vaping product associated lung injury (EVALI) and, now, COVID-19.

INJURY PREVENTION AND CONTROL

BY THE NUMBERS

COVID-19 Response

- **342**—Deployments to CDC’s COVID-19 response served by Injury Center staff.
- **\$12 million**—In funding sent to Indian Health Boards to prevent injury and violence that has been exacerbated by COVID-19.
- **22**—States receiving funding to address the impact of COVID-19 on suicide and ACES.

Opioid/Overdose Prevention

- **\$296 million**—In funding allocated to 66 jurisdictions to advance opioid overdose surveillance and prevention activities.
- **81,230**—The highest number of drug overdose deaths ever recorded in a 12-month period occurred in the 12-months preceding May 2020.
- **21%**—Decrease in the number of high-dose opioid prescriptions from 2017 to 2018 (from 48.6 million to 38.4 million).
- **\$1.02 trillion**—The cost of fatal opioid overdoses and opioid use disorder in the United States in 2017.
- **74%**—Of survey respondents exposed to the *Rx Awareness* campaign pilot who reported the campaign was effective or very effective at improving knowledge.

Adverse Childhood Experiences (ACEs) Prevention

- **4**—States funded to build surveillance infrastructures that will inform ACEs prevention activities.
- **61%**—Adults who report having experienced at least one ACE in their lifetime.
- **44%**—Reduction of cases of depression in adults if ACEs were prevented.

Suicide Prevention

- **\$7.5 million**—In funding sent to 8 states, 2 tribes and 1 university for comprehensive suicide prevention.
- **48,344**—Suicide deaths in 2018, making it the 10th leading cause of death in the United States and the 2nd leading cause of death among people ages 10-44.
- **35**—States with a 30% or greater increase in suicide rates between 1999 and 2018.

Injury and Violence Prevention

- **279,525**—Copies of CDC’s technical packages for violence prevention that have been disseminated to states, territories, and partners to share evidence to prevent and reduce violence.
- **9**—CDC-funded Injury Control Research Centers (ICRCs) that are studying how to prevent injuries and violence and working with community partners to put research findings into action.

National Violent Death Reporting System (NVDRS)

- **52**—States and territories collecting data through CDC’s NVDRS. NVDRS data can be used to define public health priorities, develop and evaluate programs and policies, and conduct research regarding violent deaths at the state level.

Injury Prevention and Control Funding History	
Fiscal Year	Dollars (in millions)
2018	\$647.974
2019	\$647.967
2020	\$677.379
2021 Enacted	\$682.879
2022 President's Budget	\$1,103.169

CDC's FY 2022 request of **\$1,103,169,000** for Injury Prevention and Control is **\$420,290,000** above FY 2021 Enacted.

In FY 2022, firearm injury and mortality research funding will be doubled from previous levels to identify the most effective ways to prevent firearm related injuries and deaths and to expand the number of states participating in the FASTER initiative, which will broaden firearm injury data collection. CDC will also encourage states to collect data on firearm safety in the Behavioral Risk Factor Surveillance System (BRFSS) to better monitor safe firearm storage practices.

Building on these efforts to address firearm injury and death, CDC is also investing \$100 million in a new evidence-based community violence intervention initiative, which aims to prevent intentional violence, such as mass casualty violence or gang violence. CDC will support implementation of evidence-based violence prevention strategies, with the greatest potential in the 25 cities, the highest overall number of homicides, and the 25 cities with the highest number of homicides per capita. In addition, CDC will support modernizing data systems to monitor youth and community violence in real time. These efforts will address the causes of violence in communities and help reduce the health inequities that characterize such violence across the United States.

CDC is investing an additional \$237.79 million for opioid overdose prevention and surveillance, including local investments and innovation to reach a total of 25 of the nation's largest cities/counties and 40 smaller communities heavily impacted by the overdose crisis, as well as continued support for all 50 states, territories, and local jurisdictions to track and prevent overdose deaths. CDC will support collection and reporting of real-time, robust mortality data, investments in prevention for people put at highest risk, and upstream prevention programs. In FY 2022, CDC will also prioritize updating the *CDC Guideline for Prescribing Opioids for Chronic Pain*.

CDC will invest an additional \$50,000,000 for rape prevention and education, to enhance support to state and territorial health departments to initiate, expand, or enhance approved prevention activities. In addition, CDC will support state, territorial, and tribal sexual assault coalitions to coordinate and provide prevention activities and to collaborate with entities engaged in sexual violence prevention.

CDC will use the additional \$10,000,000 requested for NVDRS to collect data on gender identity and sexual orientation. These data will increase our understanding of violent deaths among disproportionately affected groups and inform efforts towards decreasing the number of deaths across groups.

With the additional \$5,000,000 for intimate partner violence (IPV), CDC will develop and implement an appropriate surveillance strategy to estimate the burden of IPV among older adults. This estimate will also help inform updates to CDC's technical package on preventing IPV. CDC will also work to prevent dating violence among youth with disabilities by developing targeted recommendations, messaging, and resources based on the successful frameworks used in CDC's other teen dating violence prevention initiatives.

With the additional \$5,000,000 for domestic violence community projects, CDC will expand the Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) program by funding up to 20 additional recipients to build capacity to implement and evaluate IPV prevention strategies in their states.

Intentional Injury Prevention Budget Request

Violence is a serious problem in the United States, affecting people in all stages of life. In addition to the many survivors of violence who suffer from physical, mental, and emotional health problems throughout their lives because of violence, 19,141 people were victims of homicide in 2019. Below are statistics on the pervasiveness of other intentional injuries:

- Sexual violence (SV)—1 in 3 women and 1 in 4 men experience SV involving physical contact during their lifetimes.
- Intimate partner violence (IPV)—About 1 in 4 women and nearly 1 in 10 men have experienced physical violence or stalking by an intimate partner during their lifetime.
- Child abuse and neglect—At least 1 in 7 children have experienced child abuse and/or neglect in the past year.
- Adverse childhood experiences (ACEs)—More than 60% of adults report having experienced at least one ACE, and 1 in 6 adults have experienced 4+ ACEs.
- Youth violence—Each day, about 13 young people are victims of homicide, and about 1,100 are treated in emergency departments for nonfatal assault-related injuries.
- Teen dating violence—In the last year, nearly 1 in 11 female and approximately 1 in 15 male high school students report having experienced physical dating violence, and about 1 in 9 female and 1 in 36 male high school students report having experienced sexual dating violence.
- Suicide—In 2019, suicide took more than 47,500 lives, and suicide was the second leading cause of death among people aged 10 to 44.

Violence not only harms individuals, but also can harm communities by affecting local economies, increasing demand on law enforcement, and straining social services. The COVID-19 pandemic has created the need to remain vigilant in providing violence prevention services while individuals are isolating at home. Public health measures necessary to contain the COVID-19 outbreak, such as extended shelter-in-place orders, may have unintended effects on the potential for interpersonal and self-directed violence in the home. CDC has provided guidance to violence prevention funding recipients on how to adapt and implement their efforts in a virtual environment to ensure that essential violence prevention efforts continue.

As the nation's public health agency, CDC's expertise and leadership is essential in preventing violence. CDC collects critical data and works with state and local public health agencies, universities, and non-governmental organizations to implement and evaluate prevention programs. Strategies representing the best available evidence to prevent or reduce public health problems like youth violence, suicide, child abuse and neglect, IPV, and SV are shared through a popular suite of resources called technical packages. States, territories, and other partners have downloaded these resources almost 170,000 times and obtained over 110,000 copies. Additionally, CDC released an online tool called *Violence Prevention in Practice*³¹² in 2019 to help partners select and implement strategies presented in the technical packages, and translated technical packages on preventing suicide and youth violence into Spanish to reach a broader audience.

CDC is committed to stopping violence before it begins. One critical component of primary prevention is addressing ACEs, or childhood traumas that include experiences such as exposure to violence, abuse, and neglect and household challenges like parental incarceration or mental illness. Other examples of ACEs include traumatic experiences such as bullying, experiencing racism, and the death of a parent. In addition, conditions such as living in under-resourced or racially segregated neighborhoods, frequently moving, experiencing homelessness, or undergoing food insecurity can be traumatic and exacerbate the effects of other ACEs. Finally, historical and ongoing traumas due to systemic racism, such as discrimination, multigenerational poverty, as well as limited educational and economic opportunities, intersect with and exacerbate the experience of other

³¹² <https://vetoviolence.cdc.gov/apps/violence-prevention-practice/#/>.

ACEs, leading to disproportionate effects in certain populations. The trauma and toxic stress that can result from these forms of childhood adversity have implications for every domain of health and wellbeing across the lifespan. Preventing ACEs, in addition to preventing the childhood adversity itself, also prevent a significant portion of later life adversities and health challenges.

In late 2019, CDC released estimates of the potential to improve Americans' health by preventing ACEs in *CDC Vital Signs*,³¹³ which showed that 61 percent of adults in the United States have experienced at least one type of ACE in their lifetime. Preventing ACEs is critical because the same report found that ACEs are associated with at least 5 of the top 10 leading causes of death in the United States. Furthermore, someone who experienced ACEs is more likely to perpetrate or become a victim of future violence. In FY 2020, CDC funded 4 states to implement a new Notice of Funding Opportunity (NOFO), Preventing ACEs Data to Action (PACE:D2A),³¹⁴ to build state-level surveillance infrastructures that ensure the capacity to collect, analyze, and use ACEs data to inform statewide ACEs prevention activities. CDC is using the \$1 million increase in FY 2021 to fund two additional states that had applied but were unable to receive funding in FY 2020. There was widespread interest in this initiative, reflecting a strong desire in the field to focus on ACEs prevention. Recipients will use this funding to leverage multi-sector partnerships and resources to improve ACEs surveillance infrastructures, as well as coordinate and implement ACEs prevention strategies across the state and within communities. CDC also provided resources to states, tribes, and non-governmental organizations to address the impact of COVID-19 on ACEs. These funds can help communities adapt and implement their prevention work in a virtual format.

In addition to responding to the COVID-19 pandemic, CDC has worked hard to address injuries and violence exacerbated by the pandemic, such as suicide and ACEs. CDC provided funding to the Safe States Alliance and the Association of State and Territorial Health Officers (ASTHO) to develop and deploy suicide and ACEs prevention resources to state health departments. Similarly, CDC provided funding to the National Association of City and County Health Officials (NACCHO) and Prevention Institute to address the unique needs of counties, cities, and large metropolitan areas in providing suicide and ACEs prevention training and technical assistance. With these resources, the organizations are developing data-informed community assessment tools, as well as virtual training and technical assistance resources that can be utilized during shelter-in-place circumstances created by the pandemic. In addition, CDC awarded \$12 million to Indian Health Boards to focus on preventing injury and violence associated with suicide, ACEs, and intimate partner violence. Awardees will use a data-to-action approach—conduct rapid assessments, evaluate and improve surveillance, and implement prevention efforts—to inform prevention efforts in tribal communities. CDC also provided funding to 22 states to address the impact of COVID-19 on suicide and ACEs. These funds can help communities adapt and implement their prevention work in a virtual format.

Rape Prevention and Education (RPE): CDC's 5-year RPE grants are one of few government funding sources dedicated to primary prevention of rape and other forms of sexual violence (SV), supporting health departments in all 50 states, Washington, D.C., and territories. RPE recipients' efforts are informed by programs, practices, and policies identified within *STOP SV: A Technical Package to Prevent Sexual Violence*.³¹⁵ This technical package emphasizes promoting positive social norms, providing opportunities to empower and support girls and women, teaching healthy relationship skills, and creating protective environments.

For example, RPE supported Iowa to reduce the prevalence of SV among students. According to the 2019 Youth Risk Behavior Survey,³¹⁶ among students grades 9-12 in Iowa, 10.2% reported they had experienced sexual violence by anyone and 5.7% reported experiencing sexual dating violence. Iowa's RPE sub-recipient, the University of Northern Iowa (UNI), is using the Mentors in Violence Prevention (MVP) Initiative model to teach

³¹³ <https://www.cdc.gov/vitalsigns/aces/index.html>.

³¹⁴ <https://www.cdc.gov/injury/fundedprograms/preventing-adverse-childhood-experiences/index.html>.

³¹⁵ <https://www.cdc.gov/violenceprevention/pdf/SV-Prevention-Technical-Package.pdf>.

³¹⁶ <https://nccd.cdc.gov/Youthonline/App/Results.aspx?TT=G&OUT=0&SID=HS&QID=QQ&LID=IA&YID=2019&LID2=XX&YID2=2019&COL=T&ROW1=N&ROW2=N&HT=QQ&LCT=LL&FS=S1&FR=R1&FG=G1&FA=A1&FI=I1&FP=P1&FSL=S1&FRL=R1&FGL=G1&FAL=A1&FIL=I1&FPL=P1&PV=&TST=True&C1=IA2019&C2=XX2019&QP=G&DP=1&VA=CI&CS=Y&SYID=&EYID=&SC=DEFAULT&SO=ASC&PF=1>.

young people to speak up against inappropriate behavior and intervene to prevent violence. UNI has trained over 2,900 mentors across 40 high schools who facilitate the curriculum with over 21,000 high school freshmen. Across MVP schools, findings indicate that the percent of students who would do nothing to speak out against various aggressive scenarios dropped from 24 percent to approximately 5 percent from 2014 to 2019. UNI is currently developing new relationships with state-level organizations such as the Iowa High School Athletic Association and the Iowa School Counselors Association to improve their SV prevention policies and expand the reach of the program. In FY 2020, CDC provided RPE recipients with additional funding to offer online prevention trainings, work with shelters on tele-prevention, and monitor and respond to COVID-19 related trends impacting intimate partner violence, sexual violence, and violence experienced by children across many states.

CDC used the \$1 million increase in FY 2021 funding to support state and territorial health departments to initiate, expand or enhance approved activities including violence prevention activities amidst the pandemic.

Rape Prevention and Education Grants^{1,2}

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Number of Awards	53	53	TBD
- New Awards	0	0	TBD
- Continuing Awards	53	53	TBD
Average Award	\$0.751	\$0.792	TBD
Range of Awards	\$0.040 - \$3.559	\$0.040 - \$3.559	TBD
Total Awards	\$39.829	\$42.020	TBD

¹ Funding is awarded by formula.

Intimate Partner Violence (IPV): Data analysis from CDC's National Intimate Partner and Sexual Violence Survey (NISVS) found that IPV creates significant lifelong burdens for its victims. NISVS is an ongoing, nationally representative survey that assesses SV, stalking, and IPV victimization among adults in the United States. This survey uniquely measures the immediate risks and long-term health outcomes from experiencing violence. Based on these data, CDC estimates that the lifetime cost was \$103,767 per female victim and \$23,414 per male victim.

In 2018, CDC began a new 5-year cooperative agreement called Domestic Violence Prevention Enhancements and Leadership through Alliances (DELTA) Impact. DELTA Impact funds 10 state domestic violence coalitions to implement and evaluate proven IPV prevention strategies identified in *Preventing Intimate Partner Violence Across the Lifespan: A Technical Package of Programs, Policies, and Practices*.³¹⁷ For example, the North Carolina Coalition Against Domestic Violence (NCCADV) implemented bystander intervention strategies at a community college campus. Training evaluation data indicated that 85% of students felt the training was helpful in preparing them to respond to disclosure of IPV and SV, 83.3% of participants showed an increase in skills to solve problems nonviolently, and 62% felt the training was helpful in preparing them to intervene when they observed inappropriate behavior displayed by students. NCCADV is now expanding the program to other colleges and universities through peer-leaders and a student-led, designed social marketing campaign to address social norms around IPV on campus. One county in North Carolina has committed funding to implement the high school curriculum to all 9th-grade health education classes. NCCADV anticipates training 700 college and high school students on this intervention by 2023. CDC is assisting DELTA recipients with adapting and implementing prevention programs online as they work to adjust to pandemic conditions.

Despite the strides made in understanding and preventing intimate partner violence, there are groups who have been disproportionately affected and need additional support. The older adult population (aged ≥ 65 years) is growing faster in the United States than are younger groups; many older adults require care and are vulnerable to violence perpetrated by a caregiver or someone they trust. More research is needed to uncover the causes

³¹⁷ <https://www.cdc.gov/violenceprevention/pdf/ipv-technicalpackages.pdf>.

for, and solutions to, violence such as intimate partner violence or violence by a caregiver against older adults. An accurate national prevalence estimate is the first step in preventing violence against older adults.

Child Abuse and Neglect: Child sexual abuse is a significant but preventable adverse childhood experience. About 1 in 4 girls and 1 in 13 boys experience one type of child sexual abuse at some point in childhood. Child abuse and neglect have long-term repercussions for both the child and for society. CDC published research in 2018 showing that, for each person in the United States who experiences nonfatal child abuse and neglect, the lifetime cost to society is more than \$830,000 and the per-victim cost for fatal child maltreatment exceeds \$16 million.

CDC is using FY 2020 funding to Johns Hopkins University and Virginia Commonwealth University to evaluate programs for their impact on preventing child sexual abuse. In addition, CDC is using the \$500,000 increase in FY 2021 to release a new research funding opportunity to include prevention of adult and youth perpetration. CDC has also implemented the Essentials for Childhood (EfC) Framework³¹⁸ to address this critical issue. In FY 2020, CDC funded seven state health departments to implement EfC: California, Colorado, Kansas, Massachusetts, North Carolina, Utah, and Washington. These health departments are implementing strategies outlined in *Preventing Child Abuse and Neglect: A Technical Package of Policy, Norm, and Programmatic Activities*³¹⁹ to reduce child abuse, neglect, and other ACEs in their states.

EfC recipients help decision makers ensure that public dollars are invested in interventions that work. Between 2013 and 2018, EfC states increased the percentage of Community-Based Child Abuse Prevention dollars invested in evidence-based programs from 24 to 52 percent. For example, Colorado used EfC funding to extend Nurse-Family Partnership—a program where nurse home visitors provide information, caregiver support, and training about child health, development, and care to families—to every county. As a result, Colorado documented a 48 percent relative reduction in child abuse and neglect, as well as reductions in its risk factors (e.g., parental substance use, timing of subsequent births, child behavioral problems).

Youth Violence and Teen Dating Violence: Teen dating violence is another adverse childhood experience that affects millions of young people in the United States, and some youth – including youth with disabilities have been disproportionately impacted. Preventing violence during childhood and adolescence, including dating violence, can help improve the health, economic, and social trajectory of a young person’s life.

CDC funds five National Centers of Excellence in Youth Violence Prevention (YVPC) whose research shows that prevention of youth violence is possible. CDC also supports five communities through local health departments (Baltimore, MD; Houston, TX; Minneapolis, MN; Monterey County, CA; and Multnomah County, OR) to prevent multiple forms of violence affecting adolescents, including peer-to-peer violence, bullying, and teen dating violence. The Monterey County Health Department is implementing Safe Dates, a program for teens to learn skills that facilitate healthy relationships, including anger management, conflict resolution, and the avoidance of gender stereotypes. Safe Dates has been implemented in four traditional high schools in Salinas, California and a continuation school, reaching approximately 2,000 students annually since 2016. In the 2019 cycle of Safe Dates, 62% of students improved their scores in non-violent social problem solving through positive changes in anger management and conflict resolution skills. The broader impact is apparent in a declining rate of domestic violence victimization of youth, ages 10 to 24 years, from a rate of 4.3 per 1,000 in 2016 to 3.4 per 1,000 in 2019. Monterey County is working to implement Safe Dates in additional settings and adapting to offer the program through a virtual platform compatible with school technology.

Suicide Prevention: Historically, suicide prevention largely focused on crisis intervention and referring suicidal persons to mental health treatment. However, CDC data from 27 states have shown that while depression and

³¹⁸ <https://www.cdc.gov/violenceprevention/pdf/essentials-for-childhood-framework508.pdf>.

³¹⁹ <https://www.cdc.gov/violenceprevention/pdf/can-prevention-technical-package.pdf>.

other mental health conditions are a significant risk factor for suicide, fewer than half of individuals who die by suicide have a known mental health condition. Multiple factors contribute to suicide. These problems include issues related to relationships, substance use, physical health, jobs, money, and housing, among others. This evidence demonstrates a need for a comprehensive public health approach to address suicide before risks occur, with a focus on populations who have been marginalized.

CDC provides data and information to states and communities to understand who dies by suicide, why they have died by suicide, and how to prevent suicide. For example, data from the National Violent Death Reporting System identifies contributing factors, and *Preventing Suicide: A Technical Package of Policy, Programs, and Practices*³²⁰ compiles the best available evidence on how to prevent suicide. To improve the timeliness of data on suicide attempts, CDC funds a pilot to demonstrate the feasibility of monitoring nonfatal suicide related outcomes using syndromic surveillance data in 10 states. In 2020, CDC began a new 5-year Comprehensive Suicide Prevention (CSP) program that awarded funds to eight states and one university to implement and evaluate a comprehensive prevention approach to suicide. This program leverages surveillance, local data, and support from partners to help states and communities choose the best prevention programs tailored for their needs. CSP aims to reduce suicide and suicide attempts among populations at higher risk by 10%. In addition, CDC funded the Southern Plains Tribal Board Foundation and Wabanaki Health and Wellness to increase capacity to adapt, implement, and evaluate suicide prevention programs.

Community Violence: Community violence is intentional violence affecting victims who are not intimately related to the perpetrator, such as mass casualty violence, gang violence, and other forms of violence occurring in communities. In the United States, 19,141 lives were lost to homicide and there were 1.2 million emergency department visits for assault in 2019. Data suggest that rates of the most severe forms of violence are increasing in many areas. Also on the rise are certain risk factors for violence, such as the community disengagement and disconnection spurred by COVID-19. While certain communities have been particularly affected by violence across the country, no one is immune to violence's serious and lasting effects on physical, mental, and social health, in both rural and urban areas alike.

Youth in the United States have been placed at particular risk of violence, with homicide being the 3rd leading cause of death among youth aged 10-24. Homicide is the leading cause of death among Black youth in this age group. Youth who experience violence as victims, perpetrators, or witnesses have experienced an ACE. People who experience ACEs, including youth who have experienced violence, are more likely to have short-term and chronic physical and mental health conditions and behavioral difficulties, including future experiences with violence, smoking, substance use, obesity, high-risk sexual behavior, depression, academic difficulties, school dropout, and suicidal behavior. Some of these consequences are also risk factors for other causes of death including suicide, opioid overdose, and heart disease.

CDC's [*Comprehensive Technical Package for the Prevention of Youth Violence and Associated Risk Behaviors*](#) shows communities and states how to sharpen their focus on prevention activities and prioritize strategies with the greatest potential to prevent violence in their community. CDC supports systems to monitor deaths, injuries, and risk behaviors associated with youth and community violence through the National Violent Death Surveillance System (NVDRS), the National Syndromic Surveillance System (NSSS), and the Youth Risk Behavior Surveillance System (YRBSS).

³²⁰ <https://www.cdc.gov/violenceprevention/pdf/suicidetechnicalpackage.pdf>.

Budget Request

CDC's FY 2022 request of **\$228,550,000** for Intentional Injury Prevention is **\$105,000,000** above FY 2021 Enacted. In FY 2022, CDC will continue the efforts described in the narrative above, including supporting state and local health departments to prevent violence that affects youth, prevent rape, sexual and intimate partner violence; and prevent child abuse and neglect. CDC will continue supporting the 4 state health departments in the PACE:D2A program to build state-level surveillance infrastructures that provide capacity to collect, analyze, and use data to inform ACEs prevention activities. CDC will provide technical assistance to the nine awardees of the Comprehensive Suicide Prevention program that will focus on populations placed at increased risk of suicide and two tribal awardees focused on increasing capacity to adapt, implement, and evaluate suicide prevention programs. CDC will continue to work with states on the use of syndromic surveillance to rapidly detect changes in suicide emergency department visits and prioritize prevention efforts.

With the additional \$50,000,000 for rape prevention and education, CDC will enhance support to state and territorial health departments to initiate, expand or enhance approved prevention activities. In addition, CDC will support state, territorial, and tribal sexual assault coalitions to coordinate and provide prevention activities and to collaborate with entities engaged in sexual violence prevention.

With the additional \$5,000,000 for intimate partner violence, CDC will develop and implement an appropriate surveillance strategy to estimate the burden of IPV among older adults. This estimate will also help inform updates to CDC's technical package on preventing IPV. CDC will also work to prevent dating violence among youth with disabilities by developing targeted recommendations, messaging, and resources based on the successful frameworks used in CDC's other teen dating violence prevention initiatives.

With the additional \$5,000,000 for domestic violence community projects, CDC will expand the reach of the Domestic Violence Prevention Enhancement and Leadership Through Alliances (DELTA) program by funding up to 20 additional recipients to build capacity to implement and evaluate proven IPV prevention strategies in their states.

With the \$100,000,000 investment in the new community violence intervention initiative, CDC will fund the 25 cities with the highest number of homicides and the 25 cities with the highest number of homicides per capita to implement evidence-based strategies to prevent community violence. CDC also proposes to fund up to 5 non-governmental organizations that have expertise in partnering with communities most impacted by community violence to provide technical assistance. CDC will support the implementation and monitoring of proven, evidence-based strategies to address community violence, including strategies in hospital settings. Beyond the five National Centers of Excellence in Youth Violence Prevention (YVPC) that CDC currently funds, CDC will fund an additional 24 awards to further build the evidence base for preventing violence in communities experiencing the greatest burden, and to reduce the racial, ethnic, and economic inequities that characterize such violence across our country. CDC will modernize data systems to enhance the ability of states, cities, and communities to monitor youth and community violence in real time. This will include improvements to NVDRS so the data can be used more rapidly.

National Violent Death Reporting System Budget Request

The National Violent Death Reporting System³²¹ (NVDRS) is critical to the nation’s efforts to prevent violence. NVDRS is the only national, state-based surveillance system that pools information from multiple data sources into a usable, anonymous database that provides a complete picture on the circumstances of all types of violent deaths, such as homicides and suicides (including opioid-related suicides). CDC supports NVDRS programs in all 50 states, Washington, D.C., and Puerto Rico.

NVDRS revealed the rising suicide rates across the country in 2018. CDC’s research also showed that mental health conditions are often seen as the cause of suicide, but suicide is rarely the result of any single factor. NVDRS data showed that more than half of those who died by suicide did not have a known mental health condition. Instead, they suffered more from relationship problems and other life stressors, such as problematic substance use, job-related or financial problems, and recent or impending crises. CDC is currently developing a new NVDRS module to collect data on the incidence of suicide among public safety officers to prevent suicide among this group.

With NVDRS data, states and communities can make informed decisions to prevent violence and monitor progress over time. For example, Kansas has ranked fifth in the nation in the rise of per capita rate of death by suicide over the last 17 years. In Kansas, death by suicide increased 45 percent compared to the national average increase of 25.4 percent. In 2018, the Kansas Attorney General and partners formed a taskforce to focus on reducing the high rate of suicide among Kansas youth. The taskforce used NVDRS data to provide baseline information and considered CDC-recommended suicide prevention strategies. As a result, the Kansas Attorney General published a state report with eight specific recommendations to help the state achieve its aspirational goal of zero youth suicides. The Kansas legislature subsequently acted on one of the recommendations to establish a Kansas Youth Suicide Prevention Coordinator in May 2019.

Budget Request

CDC’s FY 2022 request of **\$34,500,000** for NVDRS is **\$10,000,000** above FY 2021 Enacted. In FY 2022, CDC will support 52 recipients to collect NVDRS data. CDC will provide technical assistance to help recipients implement and maintain the system, monitor and report data, and use these data to inform prevention efforts that can ultimately save lives. CDC will continue to increase the use of NVDRS data by characterizing deaths collected (e.g., homicide, suicide, deaths of undetermined intent, deaths due to legal intervention, and unintentional firearm deaths) among various populations (e.g., ethnic, racial, rural, sexual and gender minorities, military). CDC will also work with data providers to identify ways to improve data completeness, timeliness, and quality and continue to enhance system infrastructure with NVDRS web-based system refinements. CDC will use the additional \$10,000,000 requested for NVDRS to improve the ability of the system and its users to collect data on gender identity and sexual orientation. These data will increase our understanding of violent deaths among disproportionately affected groups and inform efforts towards decreasing the number of deaths across groups.

National Violent Death Reporting System (NVDRS) Grants¹

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President’s Budget
Number of Awards	52	52	TBD
- New Awards	0	0	TBD
- Continuing Awards	52	52	TBD
Average Award	\$0.313	\$0.313	TBD
Range of Awards	\$0.173-\$0.942	\$0.173-\$0.942	TBD
Total Awards	\$16.258	\$16.258	TBD

¹ These funds are awarded by formula.

³²¹ <https://www.cdc.gov/violenceprevention/datasources/nvdrs/index.html>.

Unintentional Injury Prevention Budget Request

The personal and societal impacts of unintentional injuries are extensive. Unintentional injuries are the leading cause of death for individuals 1 to 44 years old in the United States and are responsible for more than \$130 billion in medical costs annually. As the nation's agency to protect America's health, CDC is committed to preventing unintentional injuries, including two priority unintentional injuries: falls and traumatic brain injuries (TBI).

Falls: Falls are the leading cause of injuries among older Americans. More than one in four adults aged 65 and older falls each year, resulting in about 36 million falls and an estimated \$50 billion spent on fall-related medical costs. Fall death rates have risen about three percent per year since 2007, with fall-related deaths expecting to surge as the baby boomers continue to grow older.

CDC is the only federal agency to inform older adults and caregivers about falls, provide state-level data on falls burden, and equip healthcare providers with the tools to make fall prevention a routine part of clinical care. The CDC Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative offers a coordinated, tailored approach to screen, assess, and intervene to reduce fall risks. In 2020, CDC released *STEADI-Rx Older Adult Fall Prevention Guide for Community Pharmacists*,³²² which encourages pharmacists to screen, assess, and coordinate fall risk care with their older patients. Multiple STEADI-based programs have been implemented. For example, CDC is working to describe best practices in adapting STEADI resources for hospital settings. *A Best Practice Guide for Preventing Older Adult Falls After Hospital Discharge* will be released in 2021, offering healthcare systems a 10-step framework for promoting safe mobility and managing older patients' post-discharge fall risk. This is an important step in reducing costly hospital readmissions, as falls are the third-leading readmission diagnosis in the United States.

TBI: TBI is caused by a bump, blow, or jolt to the head that disrupts brain functions, and may range in severity from mild to severe. A TBI may lead to short- or long-term problems with memory, sleep, movement, sensation (e.g., vision or hearing), or emotions (e.g., personality changes, depression).

Although TBI is preventable, it remains a serious public health concern resulting in death and disability for thousands of people each year in the United States. In 2017, approximately 61,000 TBI-related deaths and 227,000 TBI-related hospitalizations occurred in the United States. This equals to more than 160 TBI-related deaths and 620 TBI-related hospitalizations each day. Americans aged 75 years and older have the highest numbers and rates of TBI-related hospitalizations and deaths, accounting for about 30% of TBI-related hospitalizations and 27% of TBI-related deaths.

CDC's strategic priorities for TBIs focus on primary prevention of TBI, developing and testing programs to help students successfully return to school following a TBI, caring for patients with TBI in rural settings, and improving the diagnosis and management of mild TBI (mTBI), also called concussion. In 2019, CDC conducted a pilot study focused on evaluating methods for establishing a national concussion surveillance system. Preliminary results from over 10,000 adults found that more than one in seven participants reported experiencing a head injury in the preceding 12 months. Falls were the leading cause of these injuries among this sample of adults. Similarly, among a sample of over 3,500 children and adolescents (as reported by an adult in their household), more than one in seven experienced a head injury in the preceding 12 months. More than 60% of these injuries among children and adolescents occurred while engaged in sports- or recreation-related activities. Establishing an ongoing national concussion surveillance system would provide the first-ever comprehensive estimates of TBI in the United States, identify trends and the populations who are at higher risk, and provide critical information about the effectiveness of prevention efforts.

³²² <https://www.cdc.gov/steady/pdf/Steady-Implementation-Plan-508.pdf>.

Due to the potential for lifelong effects of pediatric TBI, CDC leveraged resources to develop and publish the first ever evidence-based clinical guideline³²³ on the diagnosis and management of pediatric mTBI in the United States. To encourage widespread adoption of these guidelines, CDC partnered with the American Academy of Pediatrics (AAP) to create an online training for healthcare providers throughout the United States, as well as to pilot telehealth initiatives designed to improve mTBI care in rural communities. To date, more than 150 health care professionals and school administrators have participated in the CDC/AAP telehealth pilot and over 25,000 health care providers have completed the online training. These efforts have the potential to lead to improved care for the hundreds of thousands of children who sustain a TBI in the United States each year.

Budget Request

CDC's FY 2022 request of **\$8,800,000** for Unintentional Injury Prevention is level with FY 2021 Enacted. At this level, CDC will continue building upon key unintentional injury efforts, including STEADI, the mTBI guidelines, and the concussion pilot project, all in pursuit of preventing and minimizing the impacts of unintentional injury. CDC will also continue to analyze survey data and to assess methods available for conducting ongoing surveillance of traumatic brain injury across the United States.

³²³ <https://www.cdc.gov/traumaticbraininjury/PediatricmTBIGuideline.html>.

Injury Prevention Activities Budget Request

Violence and injuries affect everyone across the spectrums of sex, race, or economic status. Each year, 240,000 people—one person every three minutes—die from injury. For every injury death, 13 people are hospitalized and 129 are treated in emergency departments and released. For those who survive, major injuries can cause lifelong mental, physical, and financial problems.

One injury area CDC focuses on is motor vehicle safety. Each year, about 38,000 people are killed and 2.2 million people are treated in emergency departments for injuries from motor vehicle crashes. Over one in four crash deaths involves drunk driving, and about half were unrestrained. In 2018, crash deaths resulted in \$55 billion in medical and work loss costs in addition to the immeasurable burden on the victims' families and friends.

CDC's leading experts work with state health departments to gather data and provide guidance on effective motor vehicle safety prevention and interventions. These primary prevention efforts prioritize certain populations, including children, teens, older adults, and American Indian and Alaska Natives (AI/AN). In 2019, CDC released *Linking Information for Nonfatal Crash Surveillance (LINCS): A Guide for Integrating Motor Vehicle Crash Data to Keep Americans Safe on the Road*.³²⁴ This guide provides technical assistance to states to initiate or expand nonfatal motor vehicle crash data linkage activities to support data-driven decision making. In 2020, CDC released 160 fact sheets including national data on distracted driving, drug-impaired driving and data linkage; 51 state-based fact sheets on seat belts and child restraints, alcohol-impaired driving, and costs of crash deaths; and four tribal fact sheets related to seat belt use, child passenger safety, and alcohol-impaired driving, and effective interventions.

Motor vehicle safety is crucial regardless of age. For teens who are just beginning to drive, CDC created the Parents Are the Key initiative to help reduce teen driving-related injuries and deaths. And although driving helps older adults stay mobile and independent, the risk of being injured or killed in a motor vehicle crash increases in older adulthood. For this reason, CDC developed MyMobility Plan.³²⁵ It offers tips and resources for older adults to stay mobile and independent as they age, prevent or reduce the effects of possible mobility changes, and review their medicines to reduce their risk of falls and car crashes.

One of the best ways to prevent violence and injuries is to empower states to protect their residents. That is why CDC developed the Core State Violence and Injury Prevention Program (Core SVIPP),³²⁶ a crosscutting program that supports 23 state health departments or their bona fide agencies to strengthen injury surveillance programs and implement, evaluate, and disseminate effective prevention interventions. Currently, states receive base program funding to focus on four priority areas: motor vehicle injury prevention, youth sports concussion/traumatic brain injury (TBI), child abuse and neglect, and sexual violence/intimate partner violence. These topics were chosen because they have shared risk and protective factors across the different mechanisms of injury.

Many states are taking advantage of Core SVIPP to support strategic interventions. For example, the Arizona Core SVIPP implemented a program to educate the public on the effectiveness of properly using child safety seats to reduce infant and toddler deaths and injuries. It provided a car seat technician training at the Salt River Pima-Maricopa Indian Community, training 20 new car seat technicians to administer the Children are Priceless Passengers class and to conduct car seat inspections. Nationally certified child safety seat technicians must teach each class. Core SVIPP staff coordinated the training and fostered a strong partnership with the Indian Health Service (IHS) to ensure community engagement. The lead instructor for the course was from IHS and trained previously through Core SVIPP.

³²⁴ https://www.cdc.gov/transportationsafety/pdf/linkage/CDC_LINCS_Guide_508c.pdf.

³²⁵ https://www.cdc.gov/transportationsafety/older_adult_drivers/mymobility/index.html.

³²⁶ <https://www.cdc.gov/injury/stateprograms/index.html>.

The Kentucky Office of Highway Safety (KOHS) and the Kentucky Violence and Injury Prevention Program (KVIPP) created a motor vehicle risk index hot spot map. It mapped motor vehicle collisions, human factors, fatalities, emergency department visits, and hospitalizations by county of residence. They identified ten counties with poor motor vehicle safety outcomes to prioritize seat belt education and enforcement efforts. Together with the Kentucky Safety and Prevention Alignment Network, KOHS and KVIPP implemented the Local Heroes campaign in the rural counties that were identified as high risk. It ran in conjunction with the national Click It Or Ticket campaign, a highly visible enforcement seatbelt campaign. The Local Heroes campaign spotlights well-known law enforcement officers in a community setting as the face of the campaign to encourage seatbelt use and increase connections between officers and their communities. Local officers participated in video, digital, and print public service announcements. The KOHS also used the hot spots map to pinpoint seat belt enforcement projects.

The Minnesota Core SVIPP partnered with the Brain Injury Interagency Leadership Council to develop a survey about abusive head trauma (AHT) education. Hospital administrators at all birthing centers in the state completed an electronic survey with questions about the hospital's AHT education. The survey also asked if a signed statement was involved after AHT education was provided and if not, whether the hospital would be willing to incorporate one into its routine. The signed statement ensures parents viewed the video and understood the content. In addition, a sample of mothers who had recently delivered a baby at one of Minnesota's birthing hospitals completed a survey about their experiences in receiving AHT education.

The national and localized responses to the COVID-19 pandemic have led to considerable implications for injury and violence prevention activities. Some support resources were unavailable and inaccessible due to social distancing and isolations at home. CDC's Core SVIPP provided a timely and flexible mechanism to help states address suicide and ACEs priority topic areas. These COVID-19 linked projects were recently awarded, and early analysis of project proposals indicates that recipients are using resources to enhance virtual and online implementation of suicide and ACEs prevention activities.

Budget Request

CDC's FY 2022 request of **\$28,950,000** for Injury Prevention Activities is level with FY 2021 Enacted. At this level, CDC will conduct prevention activities in areas of greatest need, such as motor vehicle crash-related injury prevention, via support for LINC'S, MyMobility Plan, and Parents Are the Key. The Injury Prevention Activities budget line also supports crosscutting programs such as Core SVIPP.

Core State Violence and Injury Prevention Program Grants^{1,2,3}			
(dollars in millions)	FY 2020	FY 2021	FY 2022
	Final	Enacted	President's Budget
Number of Awards	23	23	23
- New Awards	0	0	0
- Continuing Awards	23	23	23
Average Award	\$0.292	\$0.292	TBD
Range of Awards	\$0.248-\$0.475	\$0.248-\$0.475	TBD
Total Awards	\$6.723	\$6.723	\$6.723

¹ All Core SVIPP states receive base funding. Select states are funded for expanded components above their base funding.

² These funds are not awarded by formula.

³ A new competition with take place during FY 2021 renaming this program Core State Injury Prevention Program (Core SIPP). The first round of Core SIPP awards will be made in FY 2021. The FY 2021 awards reflected in this table are the FY 2021 Core SVIPP awards that are nearing completion.

Opioid Overdose Prevention and Surveillance Budget Request

The drug overdose epidemic in the United States continues to evolve and is becoming more complex through an increasing range of drugs, such as synthetic opioids (e.g., illicitly-manufactured fentanyl) and stimulants, and an increase in polysubstance use (i.e., use of more than one substance). In 2019, 70,630 drug overdose deaths occurred in the United States, up from 67,367 in 2018 as predicted by CDC's provisional data.³²⁷ In 2019, adults aged 35-44 had the highest rate of drug overdose deaths (40.5 per 100,000). Opioids—mainly synthetic opioids (other than methadone)—are currently the main driver of drug overdose deaths with the age-adjusted rate of synthetic drug overdose deaths having increased from 1.0 per 100,000 in 2013 to 11.4 in 2019. From 2012 through 2019, the rate of drug overdose deaths involving cocaine increased more than 3-fold (from 1.4 to 4.9), while those involving psychostimulants with abuse potential increased more than 6-fold (from 0.8 to 5.0). Emerging trends like these in cocaine, psychostimulant, and synthetic cannabinoid use are influencing the severity of the epidemic. Beyond the human toll, the Council of Economic Advisers estimated the cost of the opioid crisis alone was \$696 billion in 2018.

The COVID-19 pandemic has substantial implications for drug misuse and related harms. For drug overdoses, linking people to care and treatment may be harder as people across the United States adapt to isolation at home, and as physical and mental health systems and pharmacies quickly shift to virtual delivery of care.

- Addressing the current overdose epidemic remains a priority for CDC. The Administration's strategy brings together surveillance, prevention, treatment, recovery, law enforcement, interdiction, and source-country efforts to address the continuum of challenges facing this country due to drug use. CDC's role is to prevent drug-related harms and overdose deaths. To this end, CDC has established the ambitious target of reducing drug overdose deaths by 15 percent from 2017 to 2021 using a five-pillar approach:
 - Conduct surveillance and research
 - Build state, local, and tribal capacity
 - Support providers, health systems, and payers
 - Partner with public safety
 - Empower consumers to make safe choices

Conduct surveillance and research: Timely, high-quality data are necessary for public health officials and other decision makers to understand the extent of the problem, focus resources, and evaluate the effectiveness of prevention and response efforts. CDC plays a critical role by helping states improve their surveillance systems to better monitor the overdose epidemic and optimize their response activities. In FY 2017, CDC began funding states to collect data on both fatal and nonfatal overdoses. CDC surveillance efforts have helped public health experts adapt to the rapidly changing epidemic, such as tracking trends in nonfatal and fatal overdoses to identify communities placed at risk and implementing more tailored strategies. Data have also equipped communities with the necessary information to help save lives in cases of nonfatal overdose. For example, Ohio detects drug-related anomalies to help identify suspected overdoses, makes these data, the alerts regarding anomalies, and automated report functions available in the state's syndromic system. The Ohio state health department encourages local health departments to use these data to quickly inform action and provides guidance on developing community response plans for increases in suspected drug overdoses.

CDC's State Unintentional Drug Overdose Reporting System (SUDORS) allows states to collect data on all unintentional or undetermined intent drug overdose deaths in one place. Data collected by SUDORS includes valuable contextual information from death scene investigations, detailed information on toxicology and drugs contributing to death, the route of administration, and other risk factors associated with fatal overdose.

³²⁷ https://www.cdc.gov/nchs/products/databriefs/db394.htm#section_1

Mortality reporting has been incentivized to provide SUDORS data as quickly as 6-11 months after the death occurs. This data system helps states spot trends and understand factors leading up to overdose deaths. CDC continues to look for upstream prevention efforts, such as collecting data on key risk factors like ACEs. In FY 2020, CDC supported all 50 states to include an ACEs module in their annual Behavioral Risk Factor Surveillance System (BRFSS) survey—a state-based phone survey that collects data on risk factors, chronic health conditions, and use of preventive services. CDC also included ACEs and opioid misuse surveillance questions on an internet panel survey to provide better insight into trends in ACEs and their connection to opioid misuse over time—a key function of public health surveillance and one that is not currently supported by existing retrospective data systems.

Research is another critical component in CDC's role in responding to the epidemic. Once CDC experts identify successful strategies, they work to understand how the interventions can be implemented in other jurisdictions, then continuously evaluate and refine them. For example, CDC led an evaluation of medication for opioid use disorder (MOUD) to improve the evidence base and how it can be scaled up to achieve population-level impact. This research assessed the type of MOUD and the contextual, provider, and individual factors that influence implementation and improve patient wellbeing.

Build state, local, and tribal capacity: States, communities, and tribes play an important role in preventing overdoses and related harms. For instance, they coordinate Prescription Drug Monitoring Programs (PDMPs), license healthcare providers, respond to drug overdose outbreaks, and run large public insurance programs such as Medicaid and workers' compensation. The Overdose Data to Action (OD2A) program³²⁸ provides approximately \$300 million per year to 47 states, Washington, D.C., 16 localities, and two territories to advance the understanding of the opioid overdose epidemic and to scale up prevention and response activities. Through OD2A, CDC helps states, territories, and localities implement linkage to care activities that facilitate connection with recovery community organizations, including peer recovery, harm reduction groups, or local treatment providers. To improve local prevention and response, OD2A directly funds localities and requires state recipients to direct 20 percent of prevention funds to local communities.

In addition to supporting surveillance capacity, CDC supports jurisdictions to put what they learn into action. In Maryland, CDC funds support Overdose Fatality Review Teams—comprised of multi-agency and multi-disciplinary members—to conduct confidential case reviews of overdose deaths to prevent future deaths. Teams identify additional opportunities for prevention, gaps in the system, and areas for increased collaboration among agencies and local partners. CDC resources also build jurisdictions' capacity to use PDMP data to inform action, educate the public about risks, customize prevention activities to communities, and prioritize populations of need (including rural and tribal communities). For example, Washington made the PDMP available directly within electronic health records at emergency departments and urgent care sites.

CDC also helps jurisdictions establish and improve patient linkages to MOUD and other supportive services. For example, Kentucky used CDC funds to develop the state's "Find Help Now" website, which links individuals to over 530 treatment facilities that are represented by 230 different providers. In communities that experience high rates of overdoses, CDC addresses upstream risk factors by supporting local public health departments to implement a comprehensive community approach that prevents ACEs and strengthens resilience after any ACE exposure. This work integrates public health institutes to rigorously evaluate the approach and share lessons to scale up successful mechanisms. Finally, CDC supports its Essentials for Childhood (EfC) recipients to address risk and protective factors for opioid misuse and ACEs. This supplemental funding supports partnership development, implementation, data collection, and evaluation activities conducted by state health departments.

Prevention efforts (e.g., harm reduction and linkage to care initiatives) had to adapt in the wake of the COVID-19 pandemic. In response, CDC identified and scaled up innovative practices across states. CDC also determined how substance use patterns and attitudes among youth changed due to COVID-19 and identified needs to

³²⁸ <https://www.cdc.gov/drugoverdose/od2a/index.html>.

support youth in decreasing or quitting substance use. CDC developed tailored public health messaging and interventions to prevent detrimental long-term consequences due substance misuse during COVID-19. These intervention strategies address both prescription and illicit opioids, emerging substances such as stimulants, and polysubstance use. CDC's efforts support integration of state and local prevention and response efforts, provide support for providers and health systems prevention (including use of PDMPs as a clinical decision support tool), enhance partnerships with public safety and first responders, establish and improve linkages to care, including MOUD and other supportive services, and empower individuals to make informed choices.

Support providers, health systems, and payers: CDC supports providers and healthcare systems with practices to increase safer prescribing, maximize the use of PDMPs, and advance insurer and health systems interventions at the federal, state, and local level. An impact study of the *CDC Guideline for Prescribing Opioids for Chronic Pain* (2016)³²⁹ found that there were approximately 14.2 million fewer opioid prescriptions filled from March 2016 to December 2017. A second study released in August 2018 showed that from 2017 to 2018, the number of high-dose opioid prescriptions decreased by 21%, and the number of naloxone prescriptions—a life-saving medication that can reverse the effects of an opioid overdose—increased 106 percent.

CDC also supports continuing medical education and other health professional training to advance better pain management practices, with specific focus on under-resourced populations (e.g. rural, tribal). In 2018, CDC published *Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain*³³⁰ to help healthcare systems integrate the guideline and associated quality improvement measures into their clinical practice. This resource offers primary care providers, practices, and healthcare systems a framework for managing patients on long-term opioid therapy. Afterwards, CDC launched a Quality Improvement (QI) Collaborative in 11 health systems across 12 states to implement the QI measures and track progress. These systems are implementing the guideline recommendations in over 120 primary care practices, including clinics in underserved and rural communities. Many systems are reporting improvements in prescribing and greater guideline-concordant care.

Through OD2A, CDC supports collaborations between health systems and state health departments. This includes identifying and scaling up promising prevention practices such as overdose protocols, coordinated care models for high-risk opioid patients, and quality improvement strategies to improve opioid prescribing practices. CDC is collaborating with the Office of the National Coordinator for Health Information Technology (ONC) to create sharable clinical decision supports to integrate guideline recommendations into electronic health records (EHRs), such as alerts in EHRs for morphine milligram equivalent thresholds, prompts to check the PDMP, and reminders for follow-up visits with patients.

Partner with public safety: Law enforcement is a critical partner in improving surveillance activities, sharing data, and tailoring interventions. CDC works with the Office of National Drug Control Policy (ONDCP) to support the Overdose Response Strategy (ORS), which is a public health/public safety partnership between CDC and High Intensity Drug Trafficking Areas (HIDTAs) across a majority of states. The ORS was created to help local communities reduce drug overdoses and save lives by sharing timely data, pertinent intelligence, and innovative strategies. The ORS aims to reduce fatal and nonfatal overdoses through prevention, law enforcement, response, treatment, and recovery. CDC funds yearly pilot projects in ORS states to build the evidence base for effective and local interventions. Projects include integrating overdose protocols into a mobile health program, conducting overdose education and naloxone distribution in jail/prison settings, and working with families and infants with Neonatal Abstinence Syndrome (NAS) to decrease opioid-related harms.

CDC also partners with ONDCP to provide funding for community-based projects as part of the ORS' Combatting Opioid Overdose through Community-level Intervention (COOCLI). This effort supports implementing strategies within a prioritized geographic area that other communities can employ. Projects include efforts on post-

³²⁹ <https://www.cdc.gov/drugoverdose/prescribing/guideline.html>.

³³⁰ <https://www.cdc.gov/drugoverdose/pdf/prescribing/CDC-DUIP-QualityImprovementAndCareCoordination-508.pdf>.

overdose linkage to care strategies using patient navigators and recovery coaches, justice-involved populations and access to medications for opioid use disorder (MOUD), and buprenorphine induction in the emergency department. One example is The Martinsburg Initiative, an innovative, multisector partnership focused on opioid overdose prevention. This project expands community resources and links law enforcement, schools, communities, and families to assess participants’ ACE scores, then link them to necessary resources and support.

Empower consumers to make safe choices: One of CDC’s priorities is raising awareness about the risks of opioid misuse and providing individuals with the resources and information they need to make informed choices. CDC’s *Rx Awareness* campaign features testimonials from people recovering from prescription opioid use disorder and people who have lost loved ones to opioid overdose. The campaign aims to increase awareness that prescription opioids can be addictive and dangerous, lower prescription opioid misuse, increase the number of patients seeking nonopioid pain management options, increase awareness about recovery, and reduce stigma. CDC continues promoting awareness of risks associated with nonmedical use of opioids, factors that increase risks (such as fentanyl in the local drug supply), and approaches to reduce risks. In FY 2020, CDC also began funding health education campaigns to educate the public about the risks of synthetic opioids, illicit drugs, and polysubstance use and abuse, promote harm reduction strategies, and increase empathy and compassion for people who use drugs (reducing stigma).

Budget Request

CDC’s FY 2022 request of **\$713,369,000** for Opioid Overdose Prevention and Surveillance is **\$237,790,000** above FY 2021 Enacted. In FY 2022 with the additional resources requested, CDC will increase local investments and innovation to reach approximately 25 of the nation’s largest cities/counties and 40 smaller communities heavily impacted by the overdose crisis, while continuing to support all 50 states, territories, and local jurisdictions to track and prevent overdose deaths. CDC will prioritize support to collect and report real-time, robust overdose mortality data and to move from data to action, building upon the work of the Overdose Data to Action (OD2A) program. To do so, CDC will partner with funded jurisdictions to implement surveillance strategies that include contextual information alongside data, as well as increase surveillance capabilities for polysubstance use and emerging substance threats such as stimulants. The additional resources requested will enable CDC to support investments in prevention efforts for people put at highest risk, for example, supporting risk reduction and access to medications for opioid use disorder (MOUD) for people transitioning from alternate residence (e.g. jail/prison, treatment facility, homeless shelter).

Recognizing the associations between ACEs, suicides, and substance use disorders, CDC will continue supporting upstream prevention programs, such as expanding ACEs data collection in communities experiencing high rates of drug overdoses and leveraging ongoing comprehensive suicide prevention approaches to test a comprehensive community approach for the primary and secondary prevention of ACEs. In FY 2022, CDC will prioritize updating the *CDC Guideline for Prescribing Opioids for Chronic Pain*.

Overdose Data to Action Grants^{1,2}			
(dollars in millions)	FY 2020	FY 2021	FY 2022
	Final	Enacted	President’s Budget
Number of Awards	66	66	TBD
- New Awards	0	0	TBD
- Continuing Awards	66	66	TBD
Average Award	\$4.572	\$4.572	TBD
Range of Awards	\$1.015-\$8.699	\$1.015-\$8.699	TBD
Total Awards	\$301.733	\$301.733	TBD

¹ These funds are not awarded by formula

² Estimated funding amount of awards may shift if jurisdictions adjust budgets.

Firearm Injury and Mortality Prevention Research Budget Request

Firearm injury and death is among the leading causes of death for people aged 1-64 in the United States.³³¹ In 2019, there were 39,707 firearm-related deaths in the United States. Addressing the gaps in knowledge around this issue and identifying effective prevention strategies are needed steps toward keeping people, families, schools, and communities safe from firearm injury.

CDC's approach to preventing firearm injuries focuses on three strategies: providing data to inform action, identifying effective solutions by conducting research, and increasing collaboration across multiple sectors to address the problem. CDC supports surveillance activities and data analysis to record the public health burden of firearm injuries. Understanding the patterns, characteristics, and impact of firearm violence is an important step toward preventing firearm injuries and deaths.

In FY 2020, CDC was appropriated \$12.5 million for firearm injury and mortality prevention, for activities including identifying causes and strategies for preventing injury, such as crime prevention. To do this, strengthening firearm-related data is critical. CDC has invested over \$2.25 million of this funding to build on existing CDC activities including the National Violent Death Reporting System (NVDRS) enhancements, surveillance support activities, and syndromic surveillance. CDC's Firearm Injury Surveillance Through Emergency Rooms (FASTER) program is funding 10 state health departments to collect data on nonfatal firearm injuries to provide near real-time, local data that is unavailable from other data systems and not widely available.

CDC announced an \$8 million funding opportunity to support new research awards to prevent firearm related injuries, deaths, and crime by developing and evaluating interventions informed by this research. CDC received many applications and funded 16 awards. CDC also announced funding to support existing grants to support new investigators. The two grants awarded support early career scientists with career development experience in conducting violence prevention research. This initiative examines the impact of neighborhood firearm violence on children or youth and interventions to reduce selected risk factors related to firearm violence.

Several awardees are studying interventions that involve collaborations across multiple sectors. Researchers at University of Michigan and Virginia Commonwealth University are studying emergency department and hospital-based prevention programs, and researchers at Baylor College of Medicine are integrating data from trauma centers, the medical examiner's office, and law enforcement to examine individual-level and neighborhood-level risk factors for firearm violence.

Budget Request

CDC's FY 2022 request of **\$25,000,000** for Firearm Injury and Mortality Prevention Research is **\$12,500,000** above FY 2021 Enacted. In FY 2022, CDC will increase its research to identify the most effective ways to prevent firearm related injuries and deaths. CDC will also expand the number of states participating in the FASTER initiative, which will broaden firearm injury data collection. In addition, CDC will encourage states to collect data on firearm safety in the Behavioral Risk Factor Surveillance System (BRFSS) and to better monitor safe firearm storage practices.

³³¹ https://www.cdc.gov/injury/wisqars/fatal_help/data_sources.html#6.3.

Injury Control Research Centers Budget Request

CDC funds [Injury Control Research Centers](#) (ICRCs) to study ways to prevent injuries and violence and to work with community partners to put research findings into action. The ICRC Program forms a national network of nine academic research centers that focus on three areas—research, training, and outreach.

ICRCs are on the scientific front-line conducting research on the causes, outcomes, and prevention of injuries and violence. ICRC research focuses on important issues including motor vehicle injuries, interpersonal violence and suicides, opioid overdoses, older adult falls, and traumatic brain injuries. ICRCs work with states and communities to ensure research is put into action to prevent injuries and violence. They share research findings which leads to increased awareness and action. ICRCs play a critical role in training and developing the current and next generation of researchers and public health professionals. This helps guarantee a new supply of qualified practitioners and researchers to advance prevention research, address new problems, and reach new populations across the nation.

The University of Michigan ICRC partnered with the Michigan High Intensity Drug Trafficking Area, with support from the Michigan Department of Health and Human Services, to develop the System for Opioid Overdose Surveillance, or SOS. This system tracks opioid overdoses in near real-time, providing data within one day of an overdose. Previously, local public health, community groups, and local law enforcement providers found it difficult to access real-time data, which hindered rapid response to the overdose crisis. The SOS filled this gap at the local level. The SOS collects statewide Emergency Medical System naloxone administration data and medical examiner data from over 80% of the state. Discussions with community partners suggests the data are being used to inform local planning, implementation, and responses to opioid overdoses. For example, outreach and community organizations report being able to determine where a mobile unit that could distribute naloxone would be useful. As of May 2020, approximately 250 SOS-authorized members covering 57 (70%) Michigan counties had logged into the system.

The Columbia Center for Injury Science and Prevention (CCISP) ICRC worked with the New York State Department of Health and the CDC-funded Core State Violence and Injury Prevention Program to analyze New York data on back seat safety and found that unbuckled teens and adults sitting in the back seat of a motor vehicle are three times more likely to experience moderate-to-severe injury or death than those properly buckled. More than 95% of rear-seated ejections were unrestrained and unrestrained back seat passengers had seven times higher medical charges than those who were restrained.

Budget Request

CDC's FY 2022 request of **\$9,000,000** for ICRCs is level with FY 2021 Enacted. In FY2022, CDC will fund nine ICRCs to continue high quality research, training, and outreach activities, as well as effective translation of scientific discoveries into practice for the prevention and control of injuries and violence. These activities will focus on NCIPC research priorities in injury and/or violence prevention and control, including opioid overdose, suicide, and ACEs.

State Table: Core State Violence and Injury Prevention Program^{1,2,3}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$0	\$0	TBD	TBD
Alaska	\$0	\$0	TBD	TBD
Arizona	\$250,000	\$250,000	TBD	TBD
Arkansas	\$0	\$0	TBD	TBD
California	\$0	\$0	TBD	TBD
Colorado	\$475,000	\$475,000	TBD	TBD
Connecticut	\$0	\$0	TBD	TBD
Delaware	\$0	\$0	TBD	TBD
Florida	\$0	\$0	TBD	TBD
Georgia	\$249,999	\$249,999	TBD	TBD
Hawaii	\$250,000	\$250,000	TBD	TBD
Idaho	\$0	\$0	TBD	TBD
Illinois	\$249,989	\$249,989	TBD	TBD
Indiana	\$0	\$0	TBD	TBD
Iowa	\$0	\$0	TBD	TBD
Kansas	\$0	\$0	TBD	TBD
Kentucky	\$399,997	\$399,997	TBD	TBD
Louisiana	\$250,000	\$250,000	TBD	TBD
Maine	\$0	\$0	TBD	TBD
Maryland	\$475,000	\$475,000	TBD	TBD
Massachusetts	\$475,000	\$475,000	TBD	TBD
Michigan	\$250,000	\$250,000	TBD	TBD
Minnesota	\$248,384	\$248,384	TBD	TBD
Mississippi	\$0	\$0	TBD	TBD
Missouri	\$0	\$0	TBD	TBD
Montana	\$0	\$0	TBD	TBD
Nebraska	\$250,000	\$250,000	TBD	TBD
Nevada	\$0	\$0	TBD	TBD
New Hampshire	\$0	\$0	TBD	TBD
New Jersey	\$0	\$0	TBD	TBD
New Mexico	\$0	\$0	TBD	TBD
New York	\$250,000	\$250,000	TBD	TBD
North Carolina	\$325,000	\$325,000	TBD	TBD
North Dakota	\$0	\$0	TBD	TBD
Ohio	\$250,000	\$250,000	TBD	TBD
Oklahoma	\$250,000	\$250,000	TBD	TBD
Oregon	\$250,000	\$250,000	TBD	TBD
Pennsylvania	\$0	\$0	TBD	TBD
Rhode Island	\$250,000	\$250,000	TBD	TBD
South Carolina	\$0	\$0	TBD	TBD
South Dakota	\$0	\$0	TBD	TBD
Tennessee	\$250,000	\$250,000	TBD	TBD
Texas	\$0	\$0	TBD	TBD
Utah	\$250,000	\$250,000	TBD	TBD
Vermont	\$0	\$0	TBD	TBD
Virginia	\$250,000	\$250,000	TBD	TBD
Washington	\$325,000	\$325,000	TBD	TBD
West Virginia	\$0	\$0	TBD	TBD
Wisconsin	\$250,000	\$250,000	TBD	TBD
Wyoming	\$0	\$0	TBD	TBD

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Territories				
American Samoa	\$0	\$0	TBD	TBD
Guam	\$0	\$0	TBD	TBD
Marshall Islands	\$0	\$0	TBD	TBD
Micronesia	\$0	\$0	TBD	TBD
Northern Mariana Islands	\$0	\$0	TBD	TBD
Puerto Rico	\$0	\$0	TBD	TBD
Republic of Palau	\$0	\$0	TBD	TBD
Virgin Islands	\$0	\$0	TBD	TBD
Total Resources	\$6,723,369	\$6,723,369	TBD	TBD

¹ CFDA NUMBER: 93.136 Discretionary

² This state table is a snapshot of selected programs that fund states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://www.cdc.gov/Fundingprofiles/FundingProfilesRIA/>

³ All Core SVIPP grantees receive base funding for the program. A select group of states also receive funding for two enhanced components: a) Regional Network Coordinating Organization (Colorado, Maryland, Massachusetts, North Carolina, and Washington), and b) Surveillance Quality Improvement (Colorado, Kentucky, Maryland, and Massachusetts). For more information on these additional components, please go to <https://www.cdc.gov/injury/stateprograms/>

⁴ A new competition will take place during FY 2021 renaming this program Core State Injury Prevention Program (Core SIPP). The first round of Core SIPP awards will be made in FY 2021. The FY 2021 awards reflected in this table are the FY 2021 Core SVIPP awards that are nearing completion.

State Table: Rape Prevention and Education^{1,2}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$598,675	\$612,075	TBD	TBD
Alaska	\$243,914	\$245,958	TBD	TBD
Arizona	\$776,688	\$795,785	TBD	TBD
Arkansas	\$425,361	\$445,487	TBD	TBD
California	\$3,558,987	\$3,667,132	TBD	TBD
Colorado	\$906,979	\$922,244	TBD	TBD
Connecticut	\$737,890	\$747,744	TBD	TBD
Delaware	\$258,173	\$264,585	TBD	TBD
District of Columbia	\$ 238,641	\$ 240,518	TBD	TBD
Florida	\$1,954,500	\$2,011,294	TBD	TBD
Georgia	\$1,067,608	\$1,096,016	TBD	TBD
Hawaii	\$302,983	\$306,919	TBD	TBD
Idaho	\$324,899	\$329,536	TBD	TBD
Illinois	\$1,231,121	\$1,317,341	TBD	TBD
Indiana	\$748,663	\$766,939	TBD	TBD
Iowa	\$699,269	\$708,306	TBD	TBD
Kansas	\$430,285	\$438,295	TBD	TBD
Kentucky	\$561,974	\$574,199	TBD	TBD
Louisiana	\$571,920	\$595,938	TBD	TBD
Maine	\$294,535	\$298,204	TBD	TBD
Maryland	\$697,949	\$714,526	TBD	TBD
Massachusetts	\$766,407	\$785,186	TBD	TBD
Michigan	\$1,034,715	\$1,062,070	TBD	TBD
Minnesota	\$905,207	\$920,416	TBD	TBD
Mississippi	\$437,296	\$445,530	TBD	TBD
Missouri	\$954,538	\$971,326	TBD	TBD
Montana	\$519,749	\$522,622	TBD	TBD
Nebraska	\$344,181	\$349,436	TBD	TBD
Nevada	\$421,405	\$441,205	TBD	TBD
New Hampshire	\$289,598	\$298,588	TBD	TBD
New Jersey	\$1,164,421	\$1,224,663	TBD	TBD
New Mexico ⁵	\$350,869	\$362,921	TBD	TBD
New York	\$1,879,848	\$1,934,252	TBD	TBD
North Carolina	\$1,053,525	\$1,081,482	TBD	TBD
North Dakota	\$245,251	\$247,339	TBD	TBD
Ohio	\$1,179,868	\$1,211,868	TBD	TBD
Oklahoma	\$517,774	\$528,585	TBD	TBD
Oregon	\$782,401	\$793,680	TBD	TBD
Pennsylvania	\$1,280,578	\$1,315,803	TBD	TBD
Rhode Island	\$520,946	\$523,857	TBD	TBD
South Carolina	\$607,097	\$620,766	TBD	TBD
South Dakota	\$251,061	\$256,890	TBD	TBD
Tennessee	\$752,593	\$770,919	TBD	TBD
Texas	\$2,578,658	\$2,655,427	TBD	TBD
Utah	\$680,532	\$701,084	TBD	TBD
Vermont	\$233,770	\$235,491	TBD	TBD
Virginia	\$904,182	\$927,339	TBD	TBD
Washington	\$807,415	\$827,496	TBD	TBD
West Virginia	\$337,637	\$342,682	TBD	TBD
Wisconsin	\$654,483	\$693,403	TBD	TBD

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Wyoming	\$228,074	\$232,017	TBD	TBD
Territories				
American Samoa	\$0	\$0	TBD	TBD
Guam	\$0	\$0	TBD	TBD
Marshall Islands	\$0	\$0	TBD	TBD
Micronesia	\$0	\$0	TBD	TBD
Northern Mariana Islands	\$0	\$0	TBD	TBD
Puerto Rico	\$473,676	\$483,075	TBD	TBD
Republic of Palau	\$0	\$0	TBD	TBD
Virgin Islands	\$40,000	\$40,717	TBD	TBD
Subtotal States	\$39,315,093	\$39,315,093	TBD	TBD
Subtotal Territories	\$513,676	\$513,676	TBD	TBD
Total Resources	\$39,828,769	\$39,828,769	TBD	TBD

¹ CFDA NUMBER: 93.136 Discretionary

² This State Table is a snapshot of selected programs that fund all 50 states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <https://www.cdc.gov/fundingprofiles/>

State Table: National Violent Death Reporting System^{1,2}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$318,224	\$330,224	TBD	TBD
Alaska	\$196,513	\$204,513	TBD	TBD
Arizona	\$358,210	\$370,210	TBD	TBD
Arkansas	\$263,123	\$273,123	TBD	TBD
California	\$942,085	\$962,085	TBD	TBD
Colorado	\$321,405	\$333,405	TBD	TBD
Connecticut	\$224,676	\$234,676	TBD	TBD
District of Columbia	\$178,398	\$184,398	TBD	TBD
Delaware	\$177,313	\$183,313	TBD	TBD
Florida	\$691,468	\$709,468	TBD	TBD
Georgia	\$417,712	\$432,712	TBD	TBD
Hawaii	\$187,908	\$195,908	TBD	TBD
Idaho	\$204,021	\$212,021	TBD	TBD
Illinois	\$454,526	\$469,526	TBD	TBD
Indiana	\$340,671	\$352,671	TBD	TBD
Iowa	\$230,432	\$240,432	TBD	TBD
Kansas	\$244,240	\$254,240	TBD	TBD
Kentucky	\$276,180	\$288,180	TBD	TBD
Louisiana	\$318,086	\$330,086	TBD	TBD
Maine ³	\$187,056	\$195,056	TBD	TBD
Maryland	\$444,044	\$459,044	TBD	TBD
Massachusetts	\$256,816	\$266,816	TBD	TBD
Michigan	\$419,523	\$434,523	TBD	TBD
Minnesota	\$269,049	\$279,049	TBD	TBD
Mississippi	\$255,229	\$265,229	TBD	TBD
Missouri	\$357,064	\$369,064	TBD	TBD
Montana	\$195,175	\$203,175	TBD	TBD
Nebraska	\$194,245	\$202,245	TBD	TBD
Nevada	\$267,984	\$277,984	TBD	TBD
New Hampshire	\$188,896	\$196,896	TBD	TBD
New Jersey	\$276,454	\$288,454	TBD	TBD
New Mexico	\$245,091	\$255,091	TBD	TBD
New York	\$454,614	\$469,614	TBD	TBD
North Carolina	\$408,840	\$423,840	TBD	TBD
North Dakota	\$176,151	\$182,151	TBD	TBD
Ohio	\$435,824	\$450,824	TBD	TBD
Oklahoma	\$300,737	\$312,737	TBD	TBD
Oregon	\$270,256	\$280,256	TBD	TBD
Pennsylvania	\$462,710	\$477,710	TBD	TBD
Puerto Rico	\$272,935	\$282,935	TBD	TBD
Rhode Island	\$174,386	\$180,386	TBD	TBD
South Carolina	\$307,523	\$319,523	TBD	TBD
South Dakota	\$184,173	\$192,173	TBD	TBD
Tennessee	\$351,681	\$363,681	TBD	TBD
Texas	\$761,508	\$780,508	TBD	TBD
Utah	\$255,822	\$265,822	TBD	TBD
Vermont ³	\$172,505	\$178,505	TBD	TBD
Virginia	\$342,585	\$354,585	TBD	TBD
Washington	\$319,969	\$331,969	TBD	TBD
West Virginia	\$228,720	\$238,720	TBD	TBD

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Wisconsin	\$299,848	\$311,848		
Wyoming	\$175,686	\$181,686	TBD	TBD
Total Resources	\$16,258,290	\$16,833,293	TBD	TBD

¹ CFDA NUMBER: 93.136 Discretionary.

² This State Table is a snapshot of selected programs that fund states (and in some cases local, tribal, and territorial grantees). For a more comprehensive view of grant and cooperative agreement funding to grantees by jurisdiction, visit <http://wwwn.cdc.gov/Fundingprofiles/FundingProfilesRIA/>

³ Maine and Vermont are funded together, with Maine as the lead state under the award.

State Table: Opioid Overdose Prevention and Surveillance Programs^{1,2}

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$3,718,433	\$3,718,433	TBD	TBD
Alaska	\$3,633,274	\$3,633,274	TBD	TBD
Arizona	\$5,723,310	\$5,723,310	TBD	TBD
Maricopa County	\$2,688,960	\$2,688,960	TBD	TBD
Arkansas	\$3,517,401	\$2,870,980	TBD	TBD
California	\$5,716,685	\$6,795,310	TBD	TBD
Riverside County	\$2,353,139	\$2,353,139	TBD	TBD
San Diego County	\$2,185,228	\$2,185,228	TBD	TBD
Colorado	\$4,085,898	\$4,085,898	TBD	TBD
Connecticut	\$5,948,985	\$5,948,985	TBD	TBD
Delaware	\$5,827,830	\$5,827,830	TBD	TBD
District of Columbia	\$5,926,602	\$5,926,602	TBD	TBD
Florida	\$7,610,184	\$7,610,184	TBD	TBD
Broward County	\$3,576,845	\$3,576,845	TBD	TBD
Duval County	\$4,427,591	\$4,427,591	TBD	TBD
Palm Beach County	\$4,010,923	\$4,010,923	TBD	TBD
Georgia	\$5,118,298	\$5,118,298	TBD	TBD
Hawaii	\$3,398,294	\$3,398,294	TBD	TBD
Idaho	\$2,591,377	\$2,591,377	TBD	TBD
Illinois	\$5,615,555	\$5,615,555	TBD	TBD
Chicago	\$3,301,970	\$3,301,970	TBD	TBD
Indiana	\$7,153,983	\$7,153,983	TBD	TBD
Iowa	\$2,686,911	\$2,686,911	TBD	TBD
Kansas	\$3,136,762	\$3,136,762	TBD	TBD
Kentucky	\$7,657,148	\$7,657,148	TBD	TBD
Louisiana	\$4,984,910	\$4,984,910	TBD	TBD
Maine	\$4,625,213	\$4,625,213	TBD	TBD
Maryland	\$7,214,413	\$7,214,413	TBD	TBD
Baltimore County	\$2,616,028	\$2,616,028	TBD	TBD
Massachusetts	\$7,138,651	\$7,138,651	TBD	TBD
Michigan	\$7,013,333	\$7,013,333	TBD	TBD
Minnesota	\$3,970,647	\$3,970,647	TBD	TBD
Mississippi	\$2,756,000	\$2,753,000	TBD	TBD
Missouri	\$4,922,875	\$4,922,875	TBD	TBD
Montana	\$2,410,752	\$2,410,752	TBD	TBD
Nebraska	\$2,563,404	\$2,563,404	TBD	TBD
Nevada	\$4,228,798	\$4,228,798	TBD	TBD
Clark County	\$2,967,392	\$2,967,392	TBD	TBD
New Hampshire	\$3,672,978	\$3,672,978	TBD	TBD
New Jersey	\$7,433,765	\$7,433,765	TBD	TBD
New Mexico	\$4,764,005	\$4,764,005	TBD	TBD
New York	\$6,251,633	\$6,251,633	TBD	TBD
New York City	\$2,359,358	\$2,359,358	TBD	TBD
North Carolina	\$7,003,731	\$7,003,731	TBD	TBD
North Dakota	N/A	N/A	TBD	TBD
Ohio	\$8,698,506	\$8,698,506	TBD	TBD
Cuyahoga County	\$4,411,596	\$4,411,596	TBD	TBD
Franklin County	\$3,974,855	\$3,974,855	TBD	TBD
Hamilton County	\$5,311,920	\$5,311,920	TBD	TBD
Oklahoma	\$4,191,979	\$4,191,979	TBD	TBD

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Oregon	\$3,034,987	\$3,034,987	TBD	TBD
Pennsylvania	\$8,448,267	\$8,448,267	TBD	TBD
Allegheny County	\$5,157,865	\$5,157,865	TBD	TBD
Philadelphia	\$5,865,402	\$5,865,402	TBD	TBD
Rhode Island	\$4,464,125	\$4,464,125	TBD	TBD
South Carolina	\$4,240,372	\$4,240,372	TBD	TBD
South Dakota	\$2,622,603	\$2,622,603	TBD	TBD
Tennessee	\$6,696,197	\$6,696,197	TBD	TBD
Texas	N/A	N/A	TBD	TBD
Harris County	\$2,079,506	\$2,079,506	TBD	TBD
Utah	\$3,831,181	\$3,831,181	TBD	TBD
Vermont	\$3,173,012	\$3,173,012	TBD	TBD
Virginia	\$4,626,878	\$4,626,878	TBD	TBD
Washington	\$4,390,240	\$4,390,240	TBD	TBD
West Virginia	\$7,357,338	\$7,353,338	TBD	TBD
Wisconsin	\$5,195,302	\$5,195,302	TBD	TBD
Wyoming	N/A	N/A	TBD	TBD
Territories				
Marshall Islands	N/A	N/A	TBD	TBD
Micronesia	N/A	N/A	TBD	TBD
Northern Mariana Islands	\$1,015,000	\$1,015,000	TBD	TBD
Puerto Rico	\$2,436,720	\$2,436,720	TBD	TBD
Subtotal States	\$298,281,603	\$298,281,603	TBD	TBD
Subtotal Territories	\$3,451,720	\$3,451,720	TBD	TBD
Total Resources	\$301,733,323	\$301,733,323	TBD	TBD

¹ CFDA NUMBER: 93.136 Discretionary.

² Estimated funding amount of awards may shift if jurisdictions adjust budgets

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NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$342.800	\$345.300	\$345.300	\$0
PHS Evaluation Transfer	\$0	\$0	\$0	\$0
Total Request	\$342.800	\$345.300	\$345.300	\$0
FTEs	1,074	1,087	1,087	0
-- National Occupational Research Agenda (NORA)	\$117.000	\$117.000	\$117.000	\$0
-- <i>Agriculture, Forestry, Fishing (AgFF) (non-add)</i>	\$26.500	\$26.500	\$26.500	\$0
-- Education and Research Centers	\$30.000	\$30.000	\$30.000	\$0
-- Personal Protective Technology	\$20.000	\$20.000	\$20.000	\$0
-- Mining Research	\$60.500	\$61.500	\$61.500	\$0
-- Other Occupational Safety and Health Research	\$111.600	\$113.100	\$113.100	\$0
-- National Mesothelioma Registry and Tissue Bank	\$1.200	\$1.200	\$1.200	\$0
-- Firefighter Cancer Registry	\$2.500	\$2.500	\$2.500	\$0
Mandatory Programs Total	\$591.941	\$696.843	\$696.843	\$0
World Trade Center ¹	\$491.440	\$550.526	\$641.485	+\$90.959
Energy Employees Occupational Illness Compensation Program Act (EEOICPA) ²	\$50.597	\$50.763	\$50.763	\$0

¹ Reflects the federal share of WTCHP only. These amounts are based on trend analysis and are the best estimates at the time but are subject to change.

² EEOICPA level reflects post-sequestered amount.

Enabling Legislation Citation: PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308(d), PHSA § 310, PHSA § 311, PHSA § 317, PHSA § 317A*, PHSA § 317B*, PHSA § 319, PHSA § 327, PHSA § 352, PHSA § 399MM, PHSA § 399V-6, PHSA § 1102, PHSA § 2695, Black Lung Benefits Reform Act of 1977 § 19 (Pub. L. 95-239)*; Bureau of Mine Act, as amended by Pub. L. 104-208; Energy Employees Occupational Illness Compensation Program Act of 2000; Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164 and Pub. L. 109-236; Firefighter Cancer Registry Act of 2018 (Pub. L. 115-194)*; Never Forget the Heroes: James Zadroga, Ray Pfeifer, and Luis Alvarez Permanent Authorization of the September 11th Victim Compensation Fund Act (Pub. L. 116-34); Occupational Safety and Health Act of 1970 §§20–22, Pub. L. 91-596 as amended by Pub. L. 107-188 and 109-236 (29 U.S.C. 669–671); Radiation Exposure Compensation Act, §§ 6 and 12; Toxic Substances Control Act, Pub. L. 94-469 as amended by 102-550*.

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite

Allocation Methods: Direct Federal/Intramural, Competitive Grant/Cooperative Agreements, Contracts, Other

CDC's occupational safety and health research protects the nation's 160 million workers and provides the only dedicated federal investment for research needed to prevent injuries and illnesses, which cost the United States \$250 billion annually.³³² CDC's National Institute for Occupational Safety and Health (NIOSH) was established by the Occupational Safety and Health Act of 1970 and, distinct from the Occupational Safety and Health Administration's regulatory function, works cooperatively with employers and employees to adapt new

³³² <https://www.bls.gov/news.release/pdf/empisit.pdf>.

knowledge in occupational safety and health into workable solutions. NIOSH's research efforts are aligned under the National Occupational Research Agenda (NORA), a public-private partnership that identifies critical needs and shares scientific findings to keep people safe and healthy at work. NIOSH's core functions are critical to the COVID-19 response, including certifying respirators to meet healthcare needs, supporting states in food industry-related outbreaks, and working to provide updated safety guidelines for key industries. NIOSH also prepares for, responds to, and researches chemical, biological, radiological, and natural disasters. CDC also receives mandatory funding to administer the Energy Employees Occupational Illness Compensation Program and the World Trade Center Health Program.

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

BY THE NUMBERS

- **15,011** — Downloads of the Personal Protective Equipment (PPE) Burn Rate Calculator app, which was released in the May 2020 during COVID-19 pandemic and allows healthcare facilities to calculate their average PPE consumption rate or “burn rate” and how many days a PPE supply will last.
- **33** — Factsheets produced in coordination with the Emergency Operations Center addressing COVID-19 safety precautions for workers and volunteers in a variety of occupational settings.
- **8** — Interim infection prevention and control recommendations intended for healthcare settings, home care, emergency medical services systems, 911 call centers, and law enforcement personnel.
- **19** — Infographics and documents produced guiding the use of PPE.
- **218** — Health Hazard Evaluations (HHE) conducted in 40 states in 2020 addressing work-related health concerns of thousands of workers and managers.
- **23,200** — Downloads of Health Hazard Evaluation reports in 2020, and thousands more workers, managers, and other stakeholders benefit from the recommendations issued in HHE reports.
- **400,283** — Downloads of the NIOSH Ladder Safety Smartphone app. The app provides graphical guidance on safe ladder use and includes a patented innovation that allows users to set safe ladder angles more accurately and quickly than other methods.
- **1.8 million** — Views of CDC’s guidance for optimization of N95 respirator use when PPE supplies are stressed, running low, or exhausted.
- **701** — Respirator approval decisions and 663 quality assurance audits completed in the first ten months of 2020 making more types of respirators more available to essential workers.
- **83 percent** — Reduction in respirable dust levels from NIOSH-developed canopy air curtain technology for use in underground coal mines to protect machine operators from overexposure to respirable coal mine dust.

Occupational Health and Safety Budget Request

CDC's occupational health and safety research helps to keep Americans safe and healthy at work. The research reflects the economic and infrastructure needs of the American workforce as identified by employers and employees, data on occupational illness and injury, and the opportunities for making an impact. CDC conducts research to reduce worker illness and injury and advance worker well-being, recommends interventions and capacity building to keep workers safe, and enhances worker safety and health through global collaborations. This work addresses every segment of the American workforce.

NIOSH has played a critical role in the COVID-19 response by supporting states, tribes, localities, and territories, as well as industries and employers, in addressing the ongoing needs of the nation's workers. NIOSH conducted site visits and virtual consultations for employers in critical industries such as meatpacking and manufacturing and developed more than 40 factsheets for essential occupations such as transportation, food services, and first responders. As the country returned to work, NIOSH provided guidance to assist employers and workers in non-healthcare workplaces, including general business guidance, critical infrastructure guidance, and industry-specific guidance for meat and poultry processing, agriculture, manufacturing, and seafood processing.

NIOSH's efforts have also been critical for the use and supply of personal protective equipment (PPE) in the COVID-19 pandemic. The Respirator Approval Program (RAP) evaluates and approves all respirators used in American workplaces and is a critical asset within the U.S. public health infrastructure. In response to the continued shortage of filtering facepiece respirators, CDC published [Strategies for Optimizing the Supply of N95 Respirators: Crisis/Alternate Strategies](#).³³³ This guidance provides optimization strategies for N95 respirator use when PPE supplies are stressed, running low, or exhausted. The website has been viewed more than 1.8 million times. CDC also shortened the timeline for its approval of new N95 respirators to support the national effort to increase supplies of PPE, and provided the scientific basis for the National Strategic Stockpile's release of respirators and surgical gowns that were beyond manufacture-designed shelf life. CDC developed guidance documents, factsheets, science blogs, and informational videos on PPE-related issues including respirator decontamination and PPE optimization, as well as infection prevention and control recommendations for critical workers.

CDC is looking ahead at the changing nature of work and its impact on worker safety and health. The Total Worker Health Program supports and conducts ground-breaking research in workplace safety, health, and well-being within the context of a changing economy and shifting workplace and population demographics. NIOSH-funded Centers of Excellence with their regional presence and expertise play an important role in conducting novel research on the important connections between work and health. In February 2021, NIOSH released its inaugural Diversity and Inclusion Blueprint—a five-year strategic plan to expand diversity and inclusion throughout the institute.

CDC also evaluates emerging worker safety and health risks and develops evidence-based research solutions around new industries, organizational design, job arrangements, and ways to control risks that affect the future workforce. For example, CDC examines opioid use in workers, from identifying workplace conditions and determining work-related risk factors, to protecting workers and developing methods for detection and decontamination. CDC developed science-based recommendations, training videos, tool kits, and training to protect first responders from exposure to illicit drugs when responding to an emergency.

CDC's Mining Research Program addresses disaster prevention and response, respiratory-dust hazards, communication and tracking, oxygen supply, refuge alternatives, and training. The Pittsburgh Mining Research program collaborates with partners in industry, labor, academia, and government to conduct research on health

³³³ <https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html>.

hazards, safety hazards, and disaster prevention in mining. The Spokane Mining Research Program focuses on work-related illness, injury, and death in the extractive industries with an emphasis on their unique needs throughout the western United States, including Alaska.

The Enhanced Coal Workers' Health Surveillance Program (ECWHSP) supports a mobile medical unit that provides screening to coal miners at no cost in coal mining states, including a chest radiograph, Miner Identification Document, spirometry test, blood pressure screening, and respiratory assessment questionnaire at miners' worksites or in their communities. CDC also supports 39 NIOSH-Approved Spirometry Clinics in 12 states: CO, IL, IN, KY, MO, MS, ND, OH, PA, TX, WV, and WY. In 2020, CDC released an update to EXAMiner, an interactive training tool that allows mineworkers to search for hazards by performing a virtual workplace examination with the goal of finding as many hazards as possible. EXAMiner provides feedback to mineworkers on their performance and reinforces their knowledge of mine site hazards.

CDC implements the Firefighter Cancer Registry Act of 2018 which was signed into law on July 7, 2018. The Act requires CDC to develop a voluntary registry of firefighters to collect relevant health and occupational information to better understand the link between workplace exposures and cancer. The registry is modeled after a landmark study in which CDC, with funding assistance from the U.S. Fire Administration, examined whether firefighters have a higher risk of cancer due to job exposures.

CDC assesses acute exposure to per- and polyfluoroalkyl substances (PFAS) in airport, structural, and wildland-urban interface firefighters through fireground response and turnout gear. PFAS are a group of synthetic chemicals that have been integrated extensively into consumer products and industrial applications worldwide since the early 1950's. In occupational settings, workers may experience repeated and high levels of exposure to PFAS, and CDC's research is designed to assess the impacts on a variety of industries.

CDC field scientists assess workplace hazards through Health Hazard Evaluations (HHEs) to determine if workers are being exposed to hazardous materials or harmful conditions and if these exposures are affecting employee health. HHEs are available as a frontline service provided by CDC upon request from employers, employees, and employee representatives. Headquartered in Cincinnati, OH, the HHE program addresses the work-related health concerns of thousands of workers and managers. Already, 18 HHE formal final reports are posted on the NIOSH website.

Budget Request

CDC's FY 2022 request of **\$345,300,000** for NIOSH is level with FY 2021 Enacted. In FY 2022, CDC will focus on addressing occupational hazards with high public health burden, which may include: respirable dust in mining, falls in construction, cancer among firefighters, preparedness for emergency responders, chemical exposures and infectious diseases in healthcare workers, noise in manufacturing, fatalities in oil and gas extraction, and motor vehicle crashes across all industries. NIOSH will also work to address the effects of working hours and fatigue, non-standard work arrangements, and occupational stress -- conditions which cut across all industries. Specific programmatic areas of focus will include:

- Continuing the Firefighter Cancer Registry and developing an online registration system, secure database architecture, and communications plan.
- Continuing research on PFAS exposure in firefighters and other industry sectors with high to moderate PFAS use, such as manufacturing, services, and public safety.
- Focusing on the use of robotics, exoskeletons, and other emerging technologies in construction to determine the impact on health and safety.

- Developing and making available new technologies and recommended practices in mining that will reduce injuries and fatalities from machinery and rock falls, as well as exposures to harmful mine dusts, airborne pollutants, heat, and noise.
- Resuming mobile screening to coal miners at no cost in coal-mining states and continuing outreach efforts to decrease potential barriers that limit participation by active and non-active coal miners in the ECWHSP. While the COVID-19 pandemic prompted a cancelation of all travel and field surveys in FY 2020, the ECWHSP is upgrading its mobile screening unit with enhanced environmental controls aimed at reducing exposure to respiratory pathogens in preparation for future field surveys.
- Addressing emerging occupational safety and health issues that may require new approaches to prevention, such as occupational use of robots and advanced manufacturing.
- Continuing the Total Worker Health Program and Centers of Excellence, including the Center of Excellence for Workplace Mental Health.

Investments in physical infrastructure will also support NIOSH's core programs, as aging facilities result in frequent operational issues such as unexpected power outages, water shutdowns, and environmental control issues. CDC will leverage investments from the Department of Health and Human Services' Nonrecurring Expenses Fund (NEF) to conduct renovations and upgrade systems that will prepare CDC's RAP at NIOSH's Pittsburgh Facility for future infectious disease outbreaks and pandemics. CDC is also supporting its HHE program facilities in Cincinnati, OH through consolidating the three existing campuses into a new central facility through funding from the NEF. This consolidation will increase scientific collaboration, eliminate inefficiencies, and provide researchers with state of the art laboratories and facilities.

National Institute for Occupational Safety and Health Discretionary Funding History	
Fiscal Year	Dollars (in millions)
2018	\$334.067
2019	\$335.153
2020	\$342.800
2021 Enacted	\$345.300
2022 President's Budget	\$345.300

Occupational Safety and Health Research Grants¹				
(dollars in millions)	FY 2019	FY 2020	FY 2021	FY 2022
	Final	Final	Enacted	President's Budget
Number of Awards	153	137	137	137
- New Awards	20	5	64	15
- Continuing Awards	133	132	73	122
Average Award	\$0.59	\$0.66	\$0.66	0.66
Range of Awards	\$0.020-\$5.750	\$0.020-\$5.750	\$0.020-\$5.750	\$0.020-\$5.750
Total Awards	\$90.54	\$89.90	\$89.90	\$89.90

¹ These funds are not awarded by formula.

Energy Employees Occupational Illness Compensation Program Act (EEOICPA) Budget Request

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Energy Employees Occupational Illness Compensation Program Act (EEOICPA) ¹	\$50.597	\$50.763	\$50.763	\$0

¹Reflects post-sequestered level

The Energy Employees Occupational Illness Compensation Program Act (EEOICPA) is a mandatory federal program that provides compensation to U.S. Department of Energy employees or survivors of employees who have been diagnosed with a radiation-related cancer, beryllium-related disease, or chronic silicosis resulting from duties involving production or testing of nuclear weapons. CDC conducts dose reconstructions to estimate an employee’s occupational radiation exposure for certain cancer cases, evaluates petitions for adding classes of workers to the Special Exposure Cohort (SEC), and provides administrative support to the Advisory Board on Radiation and Worker Health (Advisory Board). The U.S. Department of Labor uses CDC's estimates in making compensation determinations. In FY 2020, CDC:

- Completed 2,400 dose reconstructions.
- Received four SEC petitions.
- Supported 16 meetings of the Advisory Board, its Subcommittees, and Work Groups.
- Informed recommendations of the Advisory Board, which prompted the HHS Secretary to add two classes of employees to the SEC, bringing the total number of classes added as of September 30, 2020 to 128.

CDC’s FY 2022 estimate of **\$55,358,000** in mandatory funding for EEOICPA is level with the FY 2021 Enacted, when adjusted for sequestration. As mandated by EEOICPA, CDC will use this funding to:

- Complete 2,400 radiation dose reconstructions to support the U.S. Department of Labor's adjudication of claims.
- Evaluate an estimated six petitions to add classes of employees to the Special Exposure Cohort.
- Provide administrative and technical support for the Advisory Board as it reviews technical documents and procedures used for dose reconstruction.
- Publicize acquired information related to radiation exposure at facilities involved with nuclear weapons production, testing, and disposal.

In accordance with EEOICPA, in FY 2022, CDC will complete radiation dose reconstructions for all claims requiring such information to permit final adjudication of the claim. CDC will use radiation monitoring information provided by the U.S. Department of Energy and any relevant information provided by claimants to develop a dose reconstruction report. The number of dose reconstructions completed each year has stabilized at approximately 2,400.

CDC will also evaluate petitions to add classes of employees to the SEC and present the evaluation reports to the Advisory Board, which makes recommendations to the HHS Secretary concerning whether a class of employees

should be added to the SEC. SEC-related work has increased in response to the need to conduct more long-term evaluations, consider multiple classes of workers included in an individual petition, and re-evaluate previous petitions/reports as new information becomes available. CDC will engage the Advisory Board to assist in reviewing SEC evaluation reports and the scientific validity and quality of dose reconstruction efforts.

World Trade Center Health Program Budget Request^{1,2}

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 PB +/- FY 2021
World Trade Center	\$491.440	\$550.526	\$641.485	+\$90.959

¹ The FY 2022 WTC Health Program amount is an estimate that may be revised during the FY 22 planning process. Totals displayed for FY 2022 align with current projections.

² Reflects the federal share of WTC Health Program only. These amounts are based on trend analysis and are the best estimates at the time but are subject to change.

The September 11, 2001 terrorist attacks in New York City, at the Pentagon in Arlington, Virginia, and in Shanksville, Pennsylvania, required extensive response, recovery, and cleanup activities. Thousands of responders and survivors were exposed to toxic smoke, dust, debris, and psychological trauma. The James Zadroga 9/11 Health and Compensation Act of 2010 (P.L. 111-347) created the World Trade Center (WTC) Health Program to provide healthcare benefits to eligible responders and survivors beginning on July 1, 2011. On December 18, 2015, the James Zadroga 9/11 Health and Compensation Reauthorization Act was enacted, extending the WTC Health Program through 2090. Pursuant to this statute, the WTC Health Program provides monitoring and treatment benefits to eligible responders and survivors, conducts research on WTC-related health conditions, and maintains a health registry to collect data on those affected by the September 11, 2001 terrorist attacks. As of September 30, 2020, the WTC Health Program enrollment included 106,666 eligible responders and survivors. The Program has paid claims for eligible treatment, including medication, for more than 36,136 of these responders and survivors in the past year.

WTC Health Program Enrollment

	Sept 30, 2019	Dec. 31, 2019	March 31, 2020	June 30, 2020	Sept. 30, 2020
New Members since July 2011 ¹	38,822	41,107	43,097	44,337	45,737
Total Members ²	99,769	102,049	104,018	105,272	106,666

¹New members enrolled under the Zadroga Act requirements (adjustments are made each quarter to account for member records changes), including Pentagon and Shanksville, PA.

²New members and members enrolled prior to 7/1/2011 (adjustments are made each quarter to account for member records changes).

WTC Health Program Paid Claims

Healthcare Services ¹	Sept. 30, 2019	Dec. 30, 2019	March 31, 2020	June 30, 2020	Sept. 30, 2020
Members who had monitoring or screening exams	45,003	46,254	46,180	43,008	37,279
Members who had diagnostic evaluations ²	27,888	28,858	28,150	25,433	22,959
Members who had out-patient treatment	27,919	29,407	30,159	30,304	30,424
Members who had in-patient treatment	902	1,000	1,062	1,024	1,016
Members who received medications	26,649	27,328	28,174	28,569	28,728

¹ Based on claims for services that were paid during the previous 12-month period.

² For determining if a member has a WTC-related health condition and for certifying that health condition.

CDC's FY 2022 estimate of **\$641,485,268** in mandatory Federal share funding for the WTC Health Program is **\$90,959,000** above the FY 2021 Enacted. Funds support the quality care, including treatment, of covered WTC-related health conditions for enrolled responders and survivors. Including New York City's required contribution of \$71,276,141, a total of \$712,761,409 in resources will support the WTC Health Program in FY 2022. Through FY 2020, the WTC Health Program certified approximately 24,600 cancer cases, which is an increase of more than 5,700 cases since the end of FY 2019. Of those members certified for at least one type of cancer, more than 10,500 members received cancer care in FY 2020, compared to approximately 8,550 in FY 2019.

Mandatory funding will support:

- Monitoring and treatment services, including services for certain types of cancer, for responders, and survivors in the WTC Health Program.
- Infrastructure for the Clinical Centers of Excellence (CCEs) and the Nationwide Provider Network (NPN) to support clinical activities.
- Infrastructure for data centers.
- Extramural research projects.
- Outreach and education projects.
- WTC Health Registry activities.
- WTC Health Program Scientific/Technical Advisory Committee.

The WTC Health Program provides monitoring and treatment services via a fee-for-service model of delivery. These services are provided at no cost to the WTC Health Program members. Where applicable, the WTC Health Program recoups money from Workers' Compensation for work-related health conditions. Similarly, the WTC Health Program seeks to coordinate benefits with public and private health insurance plans for treatment provided for WTC-related health conditions that are not work-related. In FY 2022, CDC will continue contracts with CCEs and the NPN to provide administrative and member services that support the provision of healthcare benefits, and contracts with data centers to provide data collection and analysis. CDC will also renew the interagency agreement with the Centers for Medicare and Medicaid Services to reimburse the CCEs and the NPN for clinical services provided to the WTC Health Program members.

The WTC Health Program provides healthcare benefits through CCEs, which work as a clinical consortium, and through the NPN according to standardized medical monitoring protocols, programmatic policies, and procedures across the clinical sites. This standardization and the fee-for-service model enable the WTC Health Program to track claims-level data for monitoring and treatment, analyze the data for program compliance, and report on spending at a more detailed level across the WTC Health Program. The WTC Health Program also engages with labor representatives and members of the New York City community to ensure awareness of emerging issues.

CDC will use FY 2022 funds to continue research projects and epidemiologic studies to help answer critical questions about physical and mental health conditions related to the September 11, 2001 terrorist attacks. Additionally, a portion of the FY 2022 funds will continue the cooperative agreement with the New York City Department of Health and Mental Hygiene for the WTC Health Registry to conduct regular surveys on more than 71,000 registrants. The WTC Health Registry's analysis of these surveys will continue to help assess health effects among persons impacted by exposures to the WTC disaster.

Funds will also support the WTC Health Program Scientific/Technical Advisory Committee. Upon request from the Administrator of the WTC Health Program, the Advisory Committee will make recommendations regarding additional eligibility criteria, the addition of new health conditions to the list of covered conditions, and research priorities.

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GLOBAL HEALTH

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$570.843	\$592.843	\$697.843	+\$105.000
Total Request	\$570.843	\$592.843	\$697.843	+\$105.000
FTEs	1,280	1,289	1,289	0
-- Global HIV/AIDS Program	\$128.421	\$128.421	\$128.421	\$0
-- Global Tuberculosis	\$7.222	\$9.222	\$9.222	\$0
-- Global Immunization Program	<u>\$226.000</u>	<u>\$226.000</u>	<u>\$226.000</u>	<u>\$0</u>
-- Polio Eradication	\$176.000	\$176.000	\$176.000	\$0
-- Measles and Other Vaccine Preventable Diseases	\$50.000	\$50.000	\$50.000	\$0
-- Parasitic Diseases and Malaria	\$26.000	\$26.000	\$31.000	+\$5.000
-- Global Public Health Protection	\$183.200	\$203.200	\$303.200	+\$100.000

Enabling Legislation Citation:

PHSA § 214, PHSA § 301, PHSA § 304, PHSA § 307, PHSA § 310, PHSA § 317T*, PHSA § 319, PHSA § 322, PHSA § 327, PHSA § 340C, PHSA § 361-369, PHSA § 2315, PHSA § 2341, Foreign Assistance Act of 1961 §§ 104A and 104C, Federal Employees International Organization Service Act § 3, Foreign Employees Compensation Program, Tom Lantos and Henry J. Hyde United States Global Leadership Against HIV/AIDS, Tuberculosis, and Malaria (P.L. 110-293, as amended by P.L. 115-305)

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural, Competitive Grants/Cooperative Agreements, Direct Contracts, Interagency Agreements

CDC’s mission is to protect the vulnerable, while also protecting the health of Americans, by working across the world to stop diseases where they occur. As the U.S. government lead for infectious disease emergency response, CDC supports global efforts to detect epidemic threats earlier, respond more effectively, and prevent avoidable catastrophes. CDC is the only U.S. government agency with both a global and domestic public health presence, and this connection and ability to coordinate activities is particularly important for infectious diseases, as threats overseas can and do become threats here at home.

CDC’s efforts support the overarching goal of strengthening global health security, while building the nation’s domestic defense against health threats and improving health outcomes in partner countries. With CDC experts embedded in countries around the world, CDC is supporting the global COVID-19 response by leveraging core public health capacities and relationships built through decades of CDC global health activities. These forward-deployed staff are the first responders, America’s first line of defense to protect Americans when infectious disease outbreaks or other public health emergencies strike.

CDC recognizes that the COVID-19 pandemic presents challenges for countries with fragile health systems already working to address epidemics like HIV, malaria, polio, measles, and other vaccine preventable diseases. CDC is working closely with U.S. government agencies, ministries of health, and other partners to assist countries in responding to COVID-19, while simultaneously developing and implementing adaptations to interventions for malaria, HIV, and vaccine-preventable diseases. CDC is working to mitigate disruptions to the

delivery of lifesaving prevention and treatment activities for these infectious diseases, as COVID-19 threatens years of progress.

CDC's FY 2022 request of **\$697,843,000** for **Global Health** is **\$105,000,000** above the FY 2021 Enacted level.

Global Public Health Protection

CDC's strategic investments in global disease detection and emergency response is critical to the nation's health security by building sustainable global capacity to prevent, detect, and respond to emerging infectious disease threats. CDC is the U.S. government's lead technical agency for infectious disease outbreak response and for implementing global health protection activities aimed at keeping Americans safe from the next, inevitable emerging disease threats and safeguards against future epidemics. CDC's FY 2022 request of **\$303,200,000** for **Global Public Health Protection** is **\$100,000,000** above the FY 2021 Enacted level. In FY 2022, CDC will continue to build on its foundation of technical expertise to assist countries to expand and improve their own disease surveillance, laboratory systems, workforce development, and emergency management and response capacities. This sustainable investment also leverages decades of global cooperation and support to control HIV and malaria, end TB, eradicate polio, and prepare for and detect influenza and other pandemic diseases, including the current partnerships to respond to the COVID-19 pandemic. CDC will also strengthen and expand collaboration with and support both regional and country-led responses confronting the most challenging health epidemics, often in complex geopolitical settings.

CDC recognizes that achieving global health security requires a coordinated, multisectoral approach and stands ready to continue leading global efforts to strengthen public health capacities and shield Americans from outbreaks that put each of us at risk. CDC remains committed to working side-by-side with countries and partners to develop strong surveillance systems that enable disease tracking and reporting, as well as helping to build better laboratory systems. By modernizing and expanding frontline disease detective training and continually enhancing emergency response capabilities, CDC demonstrates its commitment to strengthening global health security and protecting the health and livelihoods of the American people.

GLOBAL HEALTH

BY THE NUMBERS

- **Over 450**—Emergency outbreaks responded to by CDC-trained disease detectives in 2019 across the globe including Ebola in the Democratic Republic of Congo (DRC) and Uganda, acute encephalitis in India, and HIV/AIDS in Pakistan.
- **Over 260**—Surge staff from CDC’s Global Rapid Response Team deployed to support five countries, 40 states, the CDC Emergency Operations Center, and six other locations (including the Commonwealth of the Northern Mariana Islands and the U.S. Virgin Islands), quickly pivoting from global focus to domestic COVID-19 response needs.
- **60**—Countries supported by four regional offices, including forty-four countries with new direct CDC engagement.
- **10.5 million**—People receiving life-saving antiretroviral treatment (ART) from CDC in FY 2020, which is more than half of the 17.4 million people receiving ART support through PEPFAR and 40 percent of people receiving treatment worldwide.¹
- **8.1 million**—CDC supported TB screenings, through PEPFAR, for people living with HIV in 2019. TB is the number one killer of people living with HIV.¹
- **2,000**—Travelers who typically become infected with malaria abroad and then travel to the U.S. each year. CDC protects people living in America from the threat posed by imported malaria.² In 2020, CDC provided lifesaving treatment for 139 patients with severe malaria.*
- **140**—Global polio cases as of March 24, 2021. Polio incidence has dropped more than 99 percent since the launch of global polio eradication efforts in 1988. Only Afghanistan and Pakistan remain endemic for polio, and CDC works closely with them to implement program improvements to achieve final eradication.³
- **23.5 million**—Deaths prevented globally since 2000 due to measles vaccination.⁴
- **Over 1,530**—Emergency response and capacity building deployments. Since 2015, the Global Rapid Response Team (GRR) has supported more than 575 deployers cumulating in over 59,000 person-days responding to public health threats in more than 50 countries.
- **Over 19,000**—Graduates of CDC of CDC's Field Epidemiology Training Program. Since 1980, CDC has supported more than 80 countries across Frontline, Intermediate, and Advanced tiers*

*

References:

¹ HIV & Tuberculosis. (2020, December 10). From <https://www.cdc.gov/globalhivtb/index.html>

² Mace KE, Arguin PM, Lucchi NW, Tan KR. Malaria Surveillance — United States, 2016. MMWR Surveill Summ 2019. Retrieved 16 December 2019. <http://dx.doi.org/10.15585/mmwr.ss6612a1>

³ This Week. (n.d.). Retrieved 31 March 2021., From <http://polioeradication.org/polio-today/polio-now/this-week/>

⁴ Patel MK, Goodson JL, Alexander JP Jr., et al. Progress Toward Regional Measles Elimination — Worldwide, 2000–2019. MMWR Morb Mortal Wkly Rep 2020;69:1700–1705. Retrieved on November 13, 2020

Global Health Funding History¹	
Fiscal Year	Dollars (in millions)
2018	\$494.557
2019	\$494.175
2020	\$570.843
2021 Enacted	\$592.843
2022 President's Budget	\$697.843

¹FY 2018 and FY 2019 amounts are comparably adjusted to reflect \$7.222 million movement from Tuberculosis in the HIV/AIDS, Viral Hepatitis, STI and TB Prevention account to Global Tuberculosis in the Global account.

Global HIV/AIDS Budget Request

HIV remains a leading cause of death in many countries and is a leading cause of mortality among women of reproductive age. CDC is at the forefront of the fight against HIV, tackling the epidemic in more than 45 countries and regions around the world. CDC plays an essential role by ensuring that data and science rapidly evolve to practice that accomplishes the most efficient, high-impact public health results.

In 2019, there were nearly 38 million people living with HIV (PLHIV) and approximately 4,700 new infections each day.³³⁴ Importantly, the numbers of new HIV infections and AIDS-related deaths were decreasing. The introduction of the COVID pandemic, has added to the challenges of addressing the needs of PLHIV. Sustained investments and improved efficiencies in global HIV treatment and prevention are required to address new challenges and not lose the momentum on decreasing infections and deaths.

As an implementer of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), CDC is supporting strong international HIV programs and public health systems in Africa, Asia, Central America, and the Caribbean. CDC leverages its public health science expertise and its long-standing partnerships with ministries of health, community organizations, and other global partners to establish country-driven programs and systems that focus on ensuring evidence-based decision making through high-quality HIV monitoring and evaluation.

The U.S. government's support of life-saving antiretroviral therapy (ART) and large-scale implementation of combination prevention programs saves lives, prevents new infections, improves health, and protects families and communities. CDC in collaboration with U.S. universities, has led population-based HIV household surveys in PEPFAR supported countries, which directly measured reductions in new HIV infections and high rates of viral load suppression at a national level, while also identifying sub-populations yet to be fully reached. The results affirm that global efforts to end HIV are working and most importantly, that some countries are nearing or have achieved HIV epidemic control. The partnerships through PEPFAR have helped reduce AIDS-related deaths by more than half since 2004.

Recent modeling analyses predict that without program adaptations, COVID-related disruptions to HIV public health program implementation and service delivery could result in as much as a 10 percent increase in HIV deaths over the next five years in countries where CDC works.³³⁵ This potential rise in deaths is closely linked to disrupted HIV treatment or ART, which is one of the greatest weapons that exists to control the HIV epidemic. To address this challenge, CDC is accelerating expansion of differentiated service delivery models to ensure continued access to treatment while reducing the opportunity for exposure to COVID-19 in crowded clinic settings. These approaches also reduce the burden on fragile health care systems addressing numerous public health challenges, including COVID-19.

Budget Request

CDC's FY 2022 request of **\$128,421,000** for Global HIV/AIDS is level with FY 2021 Enacted.

In FY 2022, CDC will continue to support program implementation and scientific and technical experts at headquarters and in country with more concentrated efforts on countries, populations, and programs where resources can have the greatest public health impact. CDC will also optimize staffing and technical resources to address the highest-priority global HIV needs and ensure that ongoing activities are consistent with overall PEPFAR priorities. Driving impact, CDC will provide a data-driven public health response through:

³³⁴ DGHT HIV Factsheet (November 2019). Retrieved December 17, 2019. <https://wcms-wp.cdc.gov/globalhivtb/images/DGHT-HIV-Factsheet.pdf>.

³³⁵ Potential impact of the COVID-19 pandemic on HIV, tuberculosis, and malaria in low-income and middle-income countries: a modelling study (July 2020). Lancet. Retrieved August 17, 2020. [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30288-6/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30288-6/fulltext).

- Focused case finding by testing family members and partners of those receiving HIV services.
- Increasing the use of testing that informs providers how recently someone was infected with HIV.
- Improving health information systems that consolidate data from multiple sources enabling stronger analysis to inform decision making.
- Monitoring sentinel events and detecting transmission cycles through case-based surveillance.

CDC will continue to focus on achieving epidemic control by providing technical support to ensure access to HIV treatment and voluntary medical male circumcision, two proven methods of decreasing HIV incidence; expansion of annual viral load testing services, which measure the effectiveness of HIV treatment for individuals on PEPFAR-supported antiretroviral therapy; and continue to support countries to deliver services more effectively and efficiently. This includes immediately treating persons upon a positive diagnosis, which saves lives and prevents new infections. Tuberculosis (TB) remains the number one cause of death for those living with HIV. CDC will continue to support the screening of every CDC supported PLHIV for TB and lead in the PEPFAR effort. Ensuring people living with HIV have access to preventative TB treatment, reduces the chance they will become ill with TB.

Data-Driven Implementation for Rapid Program Improvement

CDC uses data to promote evidence-based interventions in the geographic areas and populations with the greatest HIV burden for maximum impact. CDC, in collaboration with partners, is leading HIV focused population-based household surveys, sometimes referred to as Population-based HIV Impact Assessments (PHIA). These surveys are used to monitor performance, measure impact, provide needed data to inform and drive rapid change, and have often measured reductions in new HIV infections and high rates of viral load suppression at a national level. Since 2015, population-based household surveys have been completed in 15 countries. Many country partners have been trained on basic laboratory and epidemiological techniques, supporting sustainability through knowledge sharing. With the success of these surveys, an additional 10 surveys are planned focused on adults and adolescents age 15 years and older. In FY 2022, CDC will continue to use these data to inform rapid change in programs to include intensive case finding and immediate initiation of treatment for men and young women, while improving treatment initiation and retention of children and youth living with HIV.

Innovative Technology and Essential Public Health Platforms Expertise

Laboratories and surveillance are essential elements to public health platforms and are critical for effective response to HIV and other public health threats. CDC researchers and partners continue to develop innovative and cost-effective tools for HIV response, including the detection and study of drug resistance and the development of new, superior HIV testing technologies that can be used both domestically and internationally.

CDC developed and implemented Dried Tube Specimen technology, used globally to develop safe, cost-efficient proficiency testing materials to assure the quality and accuracy of rapid HIV tests. CDC also developed a low-cost laboratory-based assay that distinguishes between recent and long-term HIV infections and is used to estimate HIV-1 incidence. This is important because viral loads are higher in recently infected individuals compared to individuals with long term infection; getting recently infected persons in care and on HIV treatment quickly is integral for epidemic control.

CDC's surveillance activities drive decision making for PEPFAR program implementation. In FY 2022, CDC will continue to support country driven surveillance and treatment, including quality diagnostic services. Surveillance helps determine what is happening on the ground and identify accurate interventions. Data provide information about behavior, incidence, prevalence, and mortality in population's pre- and post- HIV diagnosis.

CDC's global HIV platforms will continue to serve as a foundation for many countries' response to their individual COVID-19 epidemics, including expertise in epidemiology, surveillance, contact tracing, and laboratory.

Global Tuberculosis

Despite being preventable and curable, tuberculosis (TB) is the world's deadliest infectious disease. Globally, 1.7 billion people are infected with latent TB and on average 10 million people will become sick with active TB disease each year, including 1.2 million children. Drug-resistant TB is an additional threat to the public health system, with nearly half a million people becoming ill and only one in three people accessing treatment. CDC approaches TB with a coordinated and focused global response, as global reduction in TB is key to reducing rates here in the U.S.

CDC is on the frontlines in more than 25 countries working with partner governments to find, cure, and prevent TB. CDC supports the sustainability of country efforts to eliminate the disease. Through a unique combination of scientific and on-the-ground expertise, CDC is leveraging its own platforms and the President's Emergency Plan for AIDS Relief (PEPFAR) platforms to develop and catalyze innovative, data-driven approaches to strengthen surveillance and laboratory systems critical for program success. CDC's approach aligns with the U.S. government's TB Strategy, Sustainable Development Goal for TB, the End TB strategy, and the PEPFAR strategy for accelerating HIV/AIDS Epidemic Control. To end TB, the global community must come together to break the TB incidence and mortality curves by addressing the drivers of the epidemic, which include missed TB cases, HIV/TB co-infection, and drug-resistant TB.

The public health platforms built by CDC and partners, as well as innovative approaches to TB surveillance, treatment, prevention, and infection control, have improved country-level and global health care systems. A recent article in the *Lancet* highlights the potentially devastating effects on global TB programs due to the COVID-19 pandemic.³³⁶ This research indicates that disruptions to TB programs around the world could result in a 20 percent increase in excess TB related deaths in high-burden countries between 2020-2025. These factors underscore the importance of maintaining the continuity of TB programs to ensure resources are in place to rapidly close gaps in TB diagnosis, treatment, and prevention during the pandemic.

Budget Request

CDC's FY 2022 request of **\$9,222,000** for Global Tuberculosis, is level with FY 2021 Enacted. These funds will focus on infection, prevention, and control programs in Global TB priority countries, maintaining gains in TB preventive treatment (TPT), and providing technical assistance to countries adopting dual (TB/COVID) and triple (TB/COVID/Flu) testing.

In FY 2022, CDC's Global TB activities will prioritize the following actions:

- **Find:** improve case-finding approaches, particularly for high-risk populations, and improve diagnostic algorithms to optimize use of new and existing diagnostics.
 - CDC is the only U.S. government agency partnering with countries and WHO to conduct TB prevalence and drug resistance surveys to document the global burden of disease, allowing countries to better target health interventions and efforts.

³³⁶ The potential impact of the COVID-19 response on tuberculosis on high-burden countries: a modeling analysis (May 2020). Retrieved August 17, 2020. http://stoptb.org/assets/documents/news/Modeling%20Report_1%20May%202020_FINAL.pdf.

- **Cure:** optimize TB and multidrug-resistant TB (MDR-TB) treatment regimens; improve linkage to care and treatment, especially among people living with HIV; improve treatment adherence and cure rates among patients with drug-resistant TB; and assess costs to patients and barriers to care.
- **Prevent:** implement effective TB infection control practices in health facilities and congregate settings; scale-up preventive treatment for people living with HIV, young children, and those with compromised immune systems.
- **Sustain:** scale-up laboratory external quality assurance systems and training; strengthen surveillance systems to improve TB and MDR-TB burden estimates and track program performance; train ministry of health and national TB program staff on critical technical and programmatic areas, including infection control, diagnostics and quality assurance, data management, and operational research.

CDC's TB Reference Lab provides expert technical assistance to TB Programs and TB Reference Laboratories in the United States and in countries around the world to ensure the efficiency of diagnostic networks and accuracy of laboratory and point of care testing. The TB Reference Lab also provides in-house quality assurance testing and determines TB drug resistance patterns.

During the current COVID-19 pandemic, CDC and partners are working to ensure that TB services are prioritized as essential, and that access to care is assured and effectively maintained to avoid a negative impact on TB care and adverse patient outcomes. In addition to developing and disseminating guidance on TB prevention and control during COVID-19, CDC encourages robust implementation of infection prevention and control measures that are critical to ensure the safety of health care workers and patients accessing care at health facilities.³³⁷ CDC is working with partners to ensure respiratory infection control measures for COVID-19 are integrated into TB health facilities. These measures include triage and early identification and separation of symptomatic patients, fast tracking or expedited service, implementation of droplet and contact precautions, frequent handwashing, environmental engineering controls and the use of personal protective equipment. Work in this area also addresses TB diagnosis during the pandemic as TB and COVID-19 share many clinical features.

³³⁷ CDC Global HIV and TB – Global TB Overview (June 2020). Retrieved August 17, 2020. <https://www.cdc.gov/globalhivtb/who-we-are/about-us/globaltb/globaltbandcovid19.html>.

Global Immunization Budget Request

Vaccines are one of the most cost-effective lifesaving public health interventions. Although strong immunization programs in the United States have reduced the domestic disease burden and remain critical to keeping Americans safe and healthy, Americans remain at risk from other imported vaccine-preventable diseases (VPDs), such as polio and measles. COVID-19 has caused global disruptions to delivery and uptake of recommended immunizations. These disruptions threaten hard-won progress to reach more children and adolescents with a wide range of vaccines, including polio and measles. CDC's global immunization activities focus on reaching children in developing countries who are at the highest risk for illness and death from VPDs to prevent these diseases from reaching U.S. borders. CDC's global immunization program plays an essential role in early detection of VPDs and provides technical support for other nations to control disease outbreaks at the source. CDC's global immunization program is working with partners to develop and implement infection prevention and control guidance for vaccinators on how to safely undertake immunizations work in the COVID-19 environment and is working with partners to adapt immunization strategies considering the pandemic. In 2020, the global COVID-19 pandemic caused more than 117 million children in 37 countries to miss doses of measles vaccine.³³⁸ These missed vaccinations followed a worldwide measles resurgence in 2019 that resulted in public health emergencies declared in countries across Africa and Europe and claimed more than 140,000 lives. Since 2000, when measles was declared eliminated from the U.S., nearly all domestic measles cases have been caused by international importation of the measles virus.³³⁹ In recent years, the U.S. experienced several large, multi-state measles outbreaks. For instance, in 2019, there were 1,261³⁴⁰ cases in thirty-one states linked to travelers who brought measles back from other countries where large measles outbreaks were occurring, such as Israel, Ukraine, and the Philippines. These domestic outbreaks of imported measles were controlled in the U.S. by 2020. In addition to causing disease and death, VPD outbreaks are expensive for state and local health departments and the U.S. healthcare system. Overall, the cost to local health departments to investigate an outbreak of VPDs is approximately \$50,000 to \$100,000 per case.⁸

CDC's commitment to polio eradication dates to the establishment of the agency in the 1950s, at a time when the United States was starting domestic polio vaccination campaigns. In August 2020, the Africa Region was certified wild polio-free, marking the first time Africa has fully stopped circulation of wild poliovirus. Through the eradication effort, 18 million cases of paralysis have been averted.³⁴¹ As of March 24, 2021, 140 cases of wild poliovirus were reported in 2020, compared to 137 cases in 2019.

CDC remains committed to polio eradication by assisting countries to safely restart their polio immunization campaigns in a COVID-19 environment. For example, in Pakistan and Afghanistan, CDC is providing specific technical guidance on resumption of services, revised supplementary immunization activity scheduling, sub-national geographical prioritization, and operational and communication adjustments.

³³⁸ More than 117 million children at risk of missing out on measles vaccines, as COVID-19 surges. (April 2020). WHO. Retrieved on August 17, 2020. https://www.who.int/immunization/diseases/measles/statement_missing_measles_vaccines_covid-19/en/.

³³⁹ Documentation and Verification of Measles, Rubella and Congenital Rubella Syndrome Elimination in Region of the Americas. United States National Report. (28 March 2012). Retrieved August 17, 2020. <http://www.cdc.gov/measles/downloads/report-elimination-measles-rubella-crs.pdf>.

³⁴⁰ Measles Cases and Outbreaks. Measles Cases in 2019. (3 December 2019). From: <https://www.cdc.gov/measles/cases-outbreaks.html>.

³⁴¹ GPEI. Investment Case 2019 – 2023. (3 December 2019). Retrieved on August 17, 2020. <http://polioeradication.org/wp-content/uploads/2019/08/Polio-InvestmentCase-Report-20190819.pdf>.

Budget Request

CDC's FY 2022 request of **\$226,000,000** for Global Immunization is level with FY 2021 Enacted. CDC is committed to the global eradication of polio and robust control of vaccine preventable diseases (VPD).

In FY 2022, CDC will continue to support CDC's efforts as part of the Global Polio Eradication Initiative, using proven interventions to move towards global eradication to ensure Americans are no longer at risk from this crippling and sometimes deadly disease. CDC will strategically target its core VPD activities, such as measles and rubella elimination, to countries with the highest disease burden. CDC will continue to support scientific, technical, and operational experts at CDC headquarters and in the field to respond to VPD outbreaks at a reduced level.

Polio Eradication

CDC is the U.S. lead for scientific and technical efforts in polio eradication. CDC's leadership and guidance in accountability, environmental surveillance, and scientific and programmatic implementation has contributed substantially to the more than 99 percent decline in reported global polio cases.³⁴² However, to achieve and maintain worldwide polio eradication, CDC and its partners must minimize the risk of poliovirus reintroduction to areas declared polio-free through ongoing surveillance.

In FY 2022, CDC will focus activities on recovering from the months-long cessation of polio campaigns due to the COVID-19 pandemic. CDC's global immunization program worked with partners to develop infection prevention and control guidance for vaccinators on how to safely undertake immunization work in the COVID-19 environment. CDC will continue to provide technical assistance to countries for polio immunization campaigns during the COVID-19 pandemic.

CDC will employ strengths in quality assurance, diagnostic confirmation, and genomic sequencing of samples obtained worldwide. CDC will also promote national ownership, oversight, and accountability. CDC will conduct limited environmental surveillance of polio viruses to ensure prompt detection and to prevent potential outbreaks of paralytic polio disease, while maintaining basic capacity to verify interruption of virus circulation in high-risk countries. CDC provides epidemiologic, laboratory, and programmatic support in developing, monitoring, and evaluating programs and national-level surveillance VPDs in other countries, with an emphasis on polio and measles.

In FY 2022, CDC will prioritize polio eradication activities designed to eliminate barriers to stop circulation of wild poliovirus in Afghanistan and Pakistan, the last two places where wild polio still circulates. In addition, CDC will focus on ending ongoing vaccine-derived poliovirus outbreaks.

Measles and other vaccine-preventable diseases

CDC's leadership and global immunization expertise dates to 1966, when the agency established the CDC Smallpox Eradication Program. Forty years have passed since the world eradicated smallpox, and CDC's global immunization efforts now include the control, elimination, and eradication of vaccine preventable diseases (VPD), as well as strengthening immunization programs worldwide. CDC will always need to be able to detect, respond, and work to prevent importations of VPDs into the United States, even when we have eliminated those diseases domestically. These efforts protect Americans living in the U.S. and those traveling abroad from VPDs that have been eliminated or no longer circulate in the U.S. and provide a foundation for the global roll out of a vaccine for COVID-19, once available.

³⁴² Our Progress Against Polio. 19 March 2021. Retrieved March 31, 2021. <https://www.cdc.gov/polio/progress/index.htm>.

As a result of the COVID-19 pandemic, more than 160 million children in 38 countries have or will receive delayed measles vaccine delivery. Many of these countries are experiencing ongoing outbreaks. Fifteen countries resumed measles immunization campaigns in 2020 after previous delays and as of January 2021 the remaining 23 countries have plans to restart vaccination in 2021. CDC developed a new method of measuring pre-and post-campaign immunity profiles for countries to identify gaps in coverage which informs the ages the campaign should target and tracks progress against the goal of 95% measles vaccination coverage.

In a COVID-19 environment, countries require additional health workers, additional campaign days, extra planning and training, and masks/hand sanitizer on top of normal campaign planning. CDC has been able to direct funding and remote personnel support to help countries in their quest to restart measles vaccination during the ongoing pandemic. Re-starting measles immunization campaigns are essential to saving lives and restoring healthy populations. In 2019, global outbreaks of measles resulted in importation to the United States, highlighting that progress is fragile and that re-establishment of endemic measles is likely without continued commitment. Improved surveillance and ongoing immunization programs are required to sustain gains in measles and rubella elimination.

In FY 2022, CDC's focus will be resuming mass measles vaccine campaigns and purchase for those countries with the highest disease burden. CDC will strengthen the collection and use of surveillance data to better guide program strategy and implementation for measles and rubella elimination. CDC plans to continue capacity building collaborations with countries experiencing the highest burden of VPDs to achieve sustainability of their own immunization programs and surveillance systems.

Parasitic Diseases and Malaria Budget Request

Parasitic diseases lead to devastating health effects for hundreds of millions of people around the world and in the United States. They can be transmitted by insects or animals, from blood or tissue donation, congenitally, or through contaminated food or water. CDC works to protect Americans and the global community from parasitic diseases with three main priorities: reduce parasitic disease related death, illness, and disability in the U.S.; reduce the global burden of malaria; and eliminate targeted neglected tropical diseases (NTDs).

CDC is a global leader in malaria and parasitic disease research and technical innovation. CDC engages in strategic and applied research to accelerate global control and elimination of these deadly diseases. CDC's laboratories, including the insectary and parasitic disease laboratory, support the critical scientific leadership required to achieve these priorities.

Recent analysis examining the potential impact of the COVID-19 pandemic on malaria control efforts estimated that if intervention efforts are halted, the malaria burden in sub-Saharan Africa in 2020 could be more than double that of 2019.³⁴³ This would represent a return to malaria mortality levels not seen in two decades. CDC and its partners are working to ensure this worst-case scenario does not become reality by developing and implementing programs to mitigate disruption to malaria prevention and treatment activities, including supporting adaptations to insecticide-treated net campaigns and working to ensure access to antimalarial medicines.

Budget Request

CDC's FY 2022 request of **\$31,000,000** for Parasitic Diseases and Malaria is **\$5,000,000** above the FY 2021 Enacted level.

In FY 2022, CDC will be better able to respond to emergent needs, enhance the activities of its parasitic disease laboratories, and strengthen prevention, diagnosis, and treatment of parasitic diseases in the US and globally. CDC will work to update its reference diagnostic capacity to keep pace with the diagnostic services needed by states and countries, U.S. government agencies, and other public health partners. CDC will invest in new testing platforms and next-generation sequencing to improve parasitic disease diagnosis and aid in outbreak response. In FY 2022, to help reverse the rising trend in malaria infections in the US, CDC will focus on prevention, as well as diagnosis and treatment of malaria in the US. CDC will work with partners on outreach and education targeting high risk groups on prevention of malaria, and healthcare providers on prevention, diagnosis, and treatment.

Parasitic Diseases in the United States

CDC diagnoses, supports treatment, and prevents sickness and death in the U.S. and globally from parasitic infections. CDC maintains the national parasitic disease reference laboratories, including an online, interactive diagnostic resource, and coordinates national surveillance for notifiable parasitic diseases, including malaria. Because diagnostic capacity for parasitic diseases at the state-level has declined in recent years, states and counties rely on these CDC systems to monitor, accurately diagnose, and treat parasitic diseases. CDC also provides 24/7 expert consultation to health departments, physicians, hospitals, and laboratories and releases life-saving medications not available commercially.

³⁴³ The potential public health consequences of COVID-19 on malaria in Africa (August 7, 2020). Retrieved August 17, 2020. <https://www.nature.com/articles/s41591-020-1025-y>.

In 2020, CDC:

- Tested more than 3,500 specimens from U.S. residents and overseas government staff for parasitic diseases and responded to more than 3,000 inquiries through its 24/7 hotline, many of which were urgent requests related to life-saving consultations, diagnoses, and treatment.
- Provided life-saving medication to 105 patients with parasitic infections in the U.S.
- Filled the void when quinidine, the sole FDA-approved treatment for severe malaria, was no longer commercially available in the United States by distributing artesunate, an effective anti-malarial not commercially available at the time under an investigational new drug protocol.
- CDC distributed artesunate to 82 critically ill people across the country, saving lives that might have otherwise been lost.

Large outbreaks of Cyclosporiasis a foodborne parasitic illness, occur each year and have been associated with various types of imported fresh produce. In 2020, more than 1,200 cases were reported in the United States from 34 states. CDC, in collaboration with state and federal public health partners, investigated clusters of cases ultimately leading to the recall of certain salad products.

Due to complex parasite biology and scarcity of adequate laboratory tools, Cyclosporiasis has been a challenging foodborne illness to detect and investigate. CDC developed a novel genotyping tool³⁴⁴ that is supporting epidemiological investigations conducted by CDC, FDA, and state public health departments. In the 2020 Cyclosporiasis outbreak season, CDC assisted 14 states and the Public Health Agency of Canada to genotype 1,006 cases. In FY 2022 this novel genotyping tool will begin its transition to become a CDC service.

CDC has also been working with academic institutions in Texas and New York since 2015 to increase health care provider awareness of parasitic diseases in the U.S., particularly on Chagas disease. With CDC support, these institutions have become national resources for information, providing over 70 lectures in key locations where providers are likely to have contact with patients at risk for Chagas disease, developed multiple educational activities reaching over 9,200 health care providers, and forming the Texas Chagas Task Force with over 145 active members representing 75 institutions. In FY 2022, CDC will continue to build on these activities funding sites in Texas, New York City and Boston to expand Chagas disease screening and treatment, as well as provider education efforts using CDC's Extension for Community Healthcare Outcomes (ECHO) model.

Beginning in FY 2018, Congress provided CDC with resources specifically to address soil transmitted helminth infections in the U.S. Soil-transmitted helminths refer to the intestinal worms infecting humans that are transmitted through contaminated soil. CDC is working with academic institutions in Alabama and Mississippi to conduct surveillance to identify any ongoing transmission and provide source remediation and care when infections are found. In FY 2020, these activities experienced some delays due to the COVID-19 pandemic. In FY 2022, CDC anticipates that surveillance information will be available to inform appropriate public health interventions.

Global Malaria

CDC is a global leader in preventing and treating malaria, providing scientific expertise to endemic countries and partners to improve surveillance, laboratory systems, and management of malaria cases. CDC jointly implements the President's Malaria Initiative (PMI) with USAID in 24 African focus countries and three programs in the Greater Mekong sub-Region. CDC plays a unique role within PMI by providing technical leadership and advice to

³⁴⁴ Advanced Molecular Detection (AMD). (15 October 2019). Retrieved on August 17, 2020. <https://www.cdc.gov/amd/project-summaries/detecting-intestinal-illness.html>.

the U.S. Global Malaria Coordinator on surveillance, monitoring and evaluation, and operational research, which drives progress toward malaria elimination.

For years, CDC has worked with partner countries to build capacity and systems to combat malaria, which also equip them to better respond to other public health threats. These efforts keep America and the world safer. This year, PMI's service delivery platform has been essential to the COVID-19 response across communities in partner countries. The sustainable approach to address the malaria threat is to eliminate it. CDC works with ministries of health and other partners to strengthen laboratory diagnostics, surveillance, and evaluation to prevent and control malaria. Countries progressing toward malaria elimination need to carry out on-going, real time disease surveillance of malaria cases. CDC is identifying strategies to improve community and health facility case management that increase access to diagnoses and treatment.

Despite recent progress, malaria remains endemic in many regions and countries. The parasites that cause malaria and the mosquitoes that carry them continue to evolve and are showing signs of resistance to current treatment drugs or insecticides, making it more difficult to successfully prevent and treat the disease. In addition, with large-scale implementation of prevention strategies, there is a need to develop program efficiencies, improve interventions and tools, and ensure that new technologies developed in the lab are quickly adapted for use in the field. CDC conducts strategic and applied research to address these issues and accelerate malaria control and elimination. Without these next generation interventions, malaria elimination will remain an elusive goal.

A critical asset to CDC's public health mission is its global reference insectary. The insectary allows scientists to better understand how mosquitos and other insect vectors transmit disease; informs how to manage and mitigate insecticide resistance; and facilitates successful field implementation of vector-control interventions, such as insecticide-treated nets, and indoor residual spraying.

CDC will leverage partnerships in FY 2022 to evaluate novel vector control strategies on malaria transmission including spatial repellents, attractive targeted sugar baits, and the impact of housing modifications (such as closing eaves and screening windows). CDC's laboratory expertise plays an additional critical role: using advanced molecular detection (AMD) tools, CDC has developed a more sensitive, rapid, and less expensive method for surveillance of malaria drug resistance. CDC laboratory training on how to detect genetic markers of malaria drug resistance was offered to visiting technicians from Madagascar, Ethiopia, Rwanda, and Mozambique in 2019 and Angola in 2020. Testing samples for antimalarial resistance markers can help explain treatment failure at the molecular level and inform evidence-based recommendations for treating malaria

To build a next generation molecular surveillance network domestically, CDC is transferring this technology to public health laboratories in the U.S. CDC has developed standard methods for malaria drug resistance surveillance and made them available publicly through an open source platform. This test will aid in tracking imported drug resistant parasites into the U.S. and help with global efforts to mitigate spread of malaria drug resistance. These data can be used to inform prevention and treatment guidelines for U.S. travelers and military personnel.

In 2020, CDC—as co-implementer of PMI—helped to successfully continue malaria control in key countries despite challenges associated with the pandemic. For example:

- Of the nine national indoor residual spraying campaigns planned for 2020, eight were completed or are on-going with adaptations to prevent the spread of COVID-19, protecting approximately 9.68 million people from malaria.

- All ten of the insecticide-treated nets mass distribution campaigns planned for 2020 were able to proceed with adaptations to prevent the spread of COVID-19, preventing an estimated 78.7 million people from malaria infection for the next three years.

To help counterbalance the devastating effects of COVID-19 on the global fight against malaria, CDC developed a resource on maintaining essential services for malaria in low resource settings³⁴⁵, and also advised on the development of WHO's guidance on tailoring malaria interventions in the COVID-19 response³⁴⁶.

With COVID-19 emergency supplemental funds in FY 2020, CDC, alongside its partners from PMI, is rolling out new projects to improve our understanding of how to safely deliver malaria control interventions—e.g., insecticide-treated bed nets, indoor residual spraying, rapid diagnostic testing—in the context of the COVID-19 pandemic. These assessments will inform the global malaria community and facilitate the provision of safe and accessible malaria care and tools in the most affected countries.

Neglected Tropical Diseases

Neglected tropical diseases (NTDs) are a group of diseases, including several parasitic diseases, that cause substantial illness for more than one billion people globally. Affecting the world's poorest people, NTDs impair physical and cognitive development, contribute to mother and child illness and death, make it difficult to farm or earn a living, and limit productivity in the workplace.

CDC works to reduce the substantial illnesses and disability caused by NTDs, with a focus on those that can be controlled through mass drug administration (MDA) or other low-cost interventions. These diseases are lymphatic filariasis (LF or elephantiasis), onchocerciasis (river blindness), blinding trachoma, schistosomiasis, three soil-transmitted helminths (intestinal worms), and Guinea worm disease.

CDC works to improve NTD control programs through more accurate measures of program impact, and improved diagnostic and epidemiological tools to support elimination. CDC is providing financial and technical assistance to American Samoa to eliminate lymphatic filariasis (LF), based on the WHO global program using the recommended triple drug therapy. Surveys documented that mass drug administration (MDA) surpassed the WHO target of 65%, in 2019 (73%) and 2020 (77%). In 2020, CDC leveraged assistance from partners and continued to support the U.S. territory conduct activities documenting progress toward LF elimination targets and milestones, including hosting a virtual training on how to implement a modified impact assessment. Future work will include laboratory testing of samples collected during the impact assessment, as well as additional assistance for third round of MDA in the territory. American Samoa is currently on track to achieve validation of elimination of LF by 2025.

CDC has developed and validated a multiplex immunoassay that can detect antibodies to more than 30 different viral, bacterial, and parasitic disease agents from just a single small blood sample. This test provides a more cost-effective approach to obtain critical public health information, as most surveillance costs are related to sample collection. Since 2012, CDC has worked with partners in over a dozen countries to leverage disease-specific population-based serosurveys, by testing for exposure to additional diseases of public health interest using the multiplex immunoassay. In 2019, CDC launched efforts in Nigeria to test over 200,000 samples from a national HIV program impact survey, to collect critical data across a range of health threats including NTDs and malaria. In 2020, despite restrictions on travel and limitations on laboratory work because of the COVID-19 pandemic, technical staff from CDC were able to provide remote support, including creative solutions to get shipments

³⁴⁵ Maintaining Essential Services for Malaria in Low-Resource Countries (July 15, 2020). Retrieved on August 17, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/global-covid-19/maintain-essential-services-malaria.html>.

³⁴⁶ Tailoring malaria interventions in the COVID-19 response. WHO. (April 9, 2020). Retrieved August 17, 2020. <https://www.who.int/publications/m/item/tailoring-malaria-interventions-in-the-covid-19-response>.

from CDC to the National Reference Laboratory in Nigeria (NRL) in the absence of commercial flights to support testing being performed there. This allowed the NRL to complete testing for more than 40,000 samples. Results are being used to inform immunization and malaria control activities.

Global Public Health Protection Budget Request

In today's tightly connected world, a pathogen can spread from a remote area to major cities on all continents in as little as 36 hours. From Ebola and Zika, to influenza and now the novel Coronavirus SARS-CoV-2 (COVID-19), countries around the world face risks from dangerous pathogens every day. Diseases, like COVID-19, can emerge without warning and spread quickly, or re-emerge as we are seeing with Ebola. These outbreaks threaten our national and economic security, and the United States remains vulnerable until every country in the world can rapidly identify and contain them.

CDC is the U.S. government's lead technical agency for infectious disease outbreak response and for implementing global health security activities aimed at keeping Americans safe at home and abroad. With over 60 years of global health experience, CDC has the unique scientific and public health expertise to successfully work with countries to support public health capacity development, to close gaps in global preparedness, and address global health security challenges. For example, the Ebola epidemic of 2014-2016 started in December 2013 in Guinea, but was not identified until March 2014, by which time it spread to other countries. In the current 2021 outbreak, the first case in Guinea was identified in 15 days, a time short enough to contain the epidemic to a single district. A key factor in this shortened response time was use of global health security funds to support development of the Field Epidemiology Training Program (FETP) in Guinea. To date, the program has trained 179 Guineans – 175 of whom remain in key surveillance positions within the Guinean Ministry of Health. In addition to FETP development, significant improvements in laboratory testing capacity, emergency management, data surveillance and analysis, treatment centers, and vaccination plans allowed Guinea to mount a full response to the 2021 outbreak.

CDC advances the U.S. government Global Health Security Strategy (GHSS), National Biodefense Strategy (NBS), the National Strategy for COVID-19 Response and Pandemic Preparedness, and supports the Global Health Security Agenda (GHSA) by helping countries strengthen disease surveillance capacities, train disease detectives, manage emergencies, and improve laboratory capabilities.

CDC leverages extensive networks across ministries of health, academic partners, the private sector, non-governmental organizations, and faith-based and community-based organizations to support this work. Subject matter experts at CDC also monitor disease outbreaks around the clock and maintain rapid response teams prepared to deploy anytime, anywhere in case of emergencies or other public health threats. One critical focal point for CDC's investments in global health security includes continually expanding our ability to strengthen disease detection and response capabilities in other countries, so they can respond to threats and build sustainable capacity for response to highly communicable diseases in the future. This includes building capacity for stopping diseases at their source by supporting training of multidisciplinary workforces, identifying new and emerging pathogens, implementing outbreak prevention strategies, and preparing for and responding to health emergencies.

Budget Request

CDC's FY 2022 request of **\$303,200,000** for Global Public Health Protection is **\$100,000,000** above the FY 2021 Enacted level. This request includes **\$293,400,000** for Global Disease Detection and Emergency Response, which is **\$100,000,000** above FY 2021 Enacted. With additional resources CDC will expand its strategic regional presence by adding new subject matter experts in laboratory and surveillance in the current regions and establishing two new regional offices. In addition, CDC will strengthen bilateral partnerships through implementing additional global health security activities where CDC has presence, initiate and enhance National Public Health Institutes (NPHIs) and Field Epidemiology Training Program (FETP) in new countries, and expand the capabilities of Global Emergency Alert and Response Service (GEARS).

Strategic Regional Presence

In FY 2020, CDC began the process of building a robust, tangible CDC presence in strategic regions across the globe that allow CDC to meet its mission of protecting Americans by responding more rapidly, efficiently, and effectively wherever disease threats occur. To successfully build strong public health infrastructure and global health security, we need engagement, expertise, and perspectives from every country in a region. CDC established four regional platforms in Eastern Europe/Central (EECA), Middle East/North Africa Asia (MENA), South America, and Southeast Asia (SEA). CDC identified four regional directors to lead the regional office for each of the platforms, which combined can support activities Global Health Security activities in a total of 60 countries. The establishment of the regional offices expanded CDC's reach to provide support and technical assistance to 44 countries which previously had little support from CDC.

In FY 2021, CDC began conducting regional capacity and health threat assessments and developing 3-5-year programmatic strategies for these regional offices. In FY 2022, CDC will implement these strategic plans, focusing on broad-based capacities of public health surveillance and data use, laboratory capacity, workforce development, and emergency preparedness/outbreak response, and more targeted, specific capacities in infection prevention and control, antimicrobial resistance, vaccine preparedness and disease prevention, border health, and humanitarian health, among other activities and special investigations. This dual approach ensures that regional platforms address capacities needed to strengthen public health infrastructure for a broad range of threats, as well as those needed to target specific public health priorities such as COVID-19 and other emerging infectious diseases. In late FY 2021, CDC will finalize decisions on the location and timing for two additional regional platforms and will recruit and hire regional directors for the new regional offices in early FY 2022.

Global Disease Detection and Emergency Response/Global Health Security

CDC's Global Disease Detection and Emergency Response mission has evolved over the past 15 years, supporting countries in building their public health capacity to prevent, detect, and respond to disease threats at their source. In addition to responding to COVID-19, CDC is actively engaged in containing several other ongoing outbreaks including polio, cholera, measles, and influenza, while continually working to keep Americans safe at home and abroad. CDC partners with countries to build on existing investments in global health security and help countries make progress toward achieving the following core health security capabilities:

- Establishing workforce training programs to build the next generation of disease detectives and expand this successful program regionally to address disease threats that cross borders.
- Supporting countries in investigating and responding to public health events and emergencies.
- Strengthening laboratory testing capacity, surveillance systems, and reporting, at both the regional and country level.
- Developing centralized national databases that include linked suspect case reports and laboratory data for notifiable diseases and syndromes.
- Leveraging CDC leadership and staff in regional and country offices who are the public health experts, including disease detectives, that keep the U.S. informed of and engaged in both early detection and containment of overseas health threats.
- Improving coordination among human and animal health, environmental, and agricultural institutions to prevent, detect, and respond to zoonotic and emerging infectious diseases of greatest national importance.
- Drawing awareness to the intersection of Global Noncommunicable Diseases and COVID-19 by highlighting lessons learned from the COVID-19 pandemic.

In 2014, the U.S. made a five-year commitment to assist at least 30 countries in meeting the targets of the Global Health Security Agenda (GHSa). With five-year supplemental funding provided in FY 2015, CDC made significant progress to strengthen global health security in 17 Phase I countries³⁴⁷. The U.S. has affirmed its commitment to strengthening global health security and fully supports the next phase, GHSa 2024. In support of this vision, which builds upon the first five years of GHSa implementation, CDC and its partners are providing intensive support to two additional countries - Democratic Republic of the Congo and Nigeria.³⁴⁸

CDC remains committed to advancing health security in support of the priorities outlined in the Global Health Security Strategy and continues to build on the foundation of successful global health programs like PEPFAR and through new investments in global health security at the country, regional, and global levels. While significant progress has been made, the ongoing COVID-19 epidemic underscores the much work remains to strengthen countries' ability to prevent, detect, and respond to infectious disease threats. In FY 2022, in alignment with the vision for GHSa 2024, CDC will enhance and complement ongoing efforts to strengthen global health security, with a continued focus on strengthening the core public health capacities of laboratory, workforce development, surveillance, and emergency response. CDC will expand global health security in-country staffing in the 19 intensive support countries, building upon existing CDC presence, to allow CDC to identify emerging threats and provide on-the-ground expertise to address health security gaps in countries more rapidly.

Tools such as the Joint External Evaluations (JEEs) provide transparent data on countries' public health gaps and help inform strategic investments to fulfill critical remaining challenges. Currently, more than 113 countries have completed JEEs, and CDC experts have participated on over 60 percent of JEE missions to date. These assessments inform development of country plans to guide activities conducted by CDC and other partners, and guide allocation of resources for health security. This cycle of assessment and planning, in which CDC plays a vital role, ensures that the investments of the United States government promote ownership and engender strategic domestic investments by partner countries.

CDC supports three interconnected programs, to help countries build and strengthen their own public health systems. During global emergencies like COVID-19, the value of preparedness, coordination, and a strong global public health emergency response capability become evident. CDC's NPHI and FETP are critical assets that allow CDC to respond quickly and effectively to outbreaks and public health crises. Additionally, GEARS is a CDC headquarters system that augments and broadens disease detection and response capabilities through Global Rapid Response Team (GRRT) and Global Disease Detection Operation Center (GDDOC).

First, CDC provides intensive technical assistance to countries in developing their own **National Public Health Institutes (NPHIs)**, which serve as the focal point of a country's public health activities. Since 2011, CDC has worked with more than 25 countries to develop National Public Health Institutes. National public health institutes consolidate public health functions at the national level, bring data and expertise together, and coordinate public health surveillance, laboratory, workforce development, and emergency response. By coordinating these efforts, countries strengthen their public health systems, while also expanding their capacity for leadership, accountability, and programmatic impact. Ultimately, NPHIs are science-based organizations driven by data and evidence, which provide the foundational elements of a robust and sustainable public health system. NPHIs sustain CDC's investment in global health security by creating permanent institutions for the implementation of public health coordination.

Many NPHIs are taking the lead within their countries to coordinate public health preparedness and response activities for COVID-19. For example, since 2015 CDC has supported Pakistan's National Public Health Institute in

³⁴⁷ Advancing the Global Health Security Agenda: CDC Achievements and Early Impact. Retrieved December 16, 2019.

https://www.cdc.gov/globalhealth/healthprotection/resources/pdf/GHSaReport_final.pdf.

³⁴⁸ Global Health Security Strategy. Retrieved on January 20, 2021. <https://www.whitehouse.gov/wp-content/uploads/2019/05/GHSS.pdf>.

emergency response and preparedness capacity building. Now, Pakistan's NPHI is leading the nation's COVID-19 response. It supports testing and emergency operations; formulates case definitions and standard operating procedures; prepares health advisories and guidelines; and compiles and disseminates daily COVID-19 situation reports. Pakistan's NPHI also directed resources to the country's COVID-19 response by providing personal protective equipment, lab supplies, test kits, and infection prevention and control training to provincial COVID-19 labs. These efforts enhanced the country's COVID-19 diagnostic capabilities and strengthened health care worker safety. With additional resources in FY 2022, CDC will:

- Initiate NPHI development in new countries, with a goal of up to eight countries;
- Improve linkages among the functions within an NPHI (e.g., surveillance, laboratory, emergency management, public health workforce) in up to five countries through enhanced support and additional technical assistance and planning, and
- Strengthen five NPHI Centers of Excellence to enable high-functioning NPHIs to become resources for peer countries, amplifying CDC's investments.

Second, the **Field Epidemiology Training Program (FETP)**, is a country-based program modeled after CDC's own domestic Epidemic Intelligence Service. FETP trains a global workforce of field epidemiologists, or disease detectives by combining classroom training with extended periods of on-the-job experience and mentoring. The epidemiologists who graduate from this program are the boots on the ground workforce who work to quickly identify and contain infectious disease threats at the source. In 2019, CDC-trained disease detectives investigated more than 450 emergency outbreaks across the globe including the Ebola outbreak in the Democratic Republic of Congo (DRC) and Uganda, an acute encephalitis outbreak in India, and a HIV/AIDS outbreak in Pakistan. Recently, a survey of more than 60 active FETP sites showed that 85% of FETP programs have trainees supporting their country's COVID-19 response efforts. With additional resources in FY 2022, CDC will:

- Initiate or strengthen all three levels of FETP (Frontline, Intermediate and Advanced) in approximately 30 countries, increasing the number of disease detectives annually and enhancing disease surveillance and response capacity at national and local levels by training an additional 560 disease detectives.
- Modernize the FETP curriculum to meet the demands of the contemporary field epidemiologist and expand options for virtual delivery of training courses.
- Build a cadre of international responders through expanded continuing education in surveillance, leadership and management, and emergency response.
- Expand systematic and routine evaluation and monitoring activities.

Third, CDC, through the Global Emergency Alert and Response Service (GEARS), provides a crucial role in national security with CDC experts in Atlanta on duty 24/7 monitoring between 30-40 potential public health threats each day. These experts are poised for rapid deployment, when needed. GEARS, combines the critical functions of the Global Disease Detection Operations Center (GDDOC) and the Global Rapid Response Team (GRRT) into one program that allows for a seamless transition between global disease detection and associated response activities. With additional resources in FY 2022, CDC will:

- Enhance the electronic outbreak alert systems at CDC headquarters. Expand intensive CDC support to strengthen alert and response operations including the use of electronic event-based surveillance systems from two to four countries annually.
- Facilitate the use of the electronic surveillance systems in up to 10 more countries each year, building on existing support to approximately 20 countries.

- Maintain CDC's leadership to the Global Outbreak Alert and Response Network (GOARN), the global partnership of institutions established in 2000 that provides rapid and expert responses to disease outbreaks and establishes preparedness programs and activities.
- Expand CDC's health security technical assistance to WHO's Emergency Information and Risk Assessment and Emergency Response Units.

Since its establishment in 2015, the GRRT has led CDC's response to global outbreaks, providing over 1,530 deployments, supporting 583 distinct deployers with over 65,000 person-days responding to public health threats support in more than 90 countries. With a roster of over 490 CDC responders, GRRT enables CDC experts to deploy within 72 hours, responding to both international and domestic emergencies. GRRT is a critical asset in CDC's ability to respond to concurrent and ongoing outbreaks from Ebola in Guinea and DRC Kivu province, polio, measles, and COVID-19. For example, CDC leveraged GRRT's strong partnerships and incorporated these global health assets into the agency's domestic COVID-19 response. More than 260 surge staff from CDC's Global Rapid Response Team deployed to support five countries, 41 states, the CDC Emergency Operations Center, and six other locations (including the Commonwealth of the Northern Mariana Islands and the U.S. Virgin Islands), quickly pivoting from global focus to domestic COVID-19 response needs. With additional resources in FY 2022, CDC will:

- Expand GRRT to include and support an additional 15 full-time deployers available for long-term deployments to manage prolonged or complicated public health responses.
- Support partners to build internal capacity to respond to emergencies and ensure effective coordination.
- Lead operational research and continuous quality improvement of response activities, including humanitarian response, disaster mitigation, and recovery/resilience efforts.

Additionally, CDC's Public Health Emergency Management (PHEM) Fellowship program trains international public health professionals affiliated with ministries of health with a standardized emergency management framework and in-depth exposure to Public Health Emergency Operations Center. To date, the program has graduated 141 fellows from 37 countries, many of whom assume key roles in public health leadership. These investments in workforce training help countries build capacity to quickly address disease threats on their own and help communication during steady state and in a response.

CDC Implementation of Foreign Assistance Transparency and Accountability Act (FATAA)

CDC's activities funded by PEPFAR and through USAID transfers comply with the Foreign Assistance Transparency and Accountability Act (FATAA) of 2016.

To ensure consistency across U.S. government programs that implement PEPFAR and to ensure compliance with monitoring and evaluation directives, including FATAA, PEPFAR Evaluation Standards of Practice provide a robust monitoring and evaluation framework. CDC's PEPFAR program works with the Office of the Global AIDS Coordinator to implement the PEPFAR Evaluation Standards of Practice for activities implemented by CDC.

FATAA's requirements for monitoring and evaluation are codified at USAID as part of the Program Cycle Operational Policy (ADS 201). Requirements have been aligned with the Foreign Aid Transparency and Accountability Act of 2016 (FATAA) to ensure compliance. For example, FATAA requires that Agencies establish annual monitoring and evaluation objectives and timetables to plan and manage the process of monitoring, evaluating, analyzing progress, and applying learning toward achieving results. USAID's ADS 201 requires all Operating Units to develop a Performance Management Plan that includes both a monitoring and evaluation plan, which must be updated at least once a year.

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PUBLIC HEALTH PREPAREDNESS AND RESPONSE

(dollars in millions)	FY 2020 Final ¹	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$827.200	\$842.200	\$842.200	\$0
Total Request	\$827.200	\$842.200	\$842.200	\$0
FTEs	449	464	464	0
-- Public Health Emergency Preparedness Cooperative Agreement	\$675.000	\$695.000	\$695.000	\$0
-- Academic Centers for Public Health Preparedness	\$8.200	\$8.200	\$8.200	\$0
-- All Other CDC Preparedness	\$144.000	\$139.000	\$139.000	\$0

¹ FY 2020 Level is comparably adjusted to reflect Congressionally accepted budget alignments between accounts.

Enabling Legislation Citation: PHS A § 301, PHS A § 307, PHS A § 310, PHS A § 311, PHS A § 319, PHS A § 319C-1*, PHS A § 319D*, PHS A § 319F, PHS A § 319F-2*, PHS A § 319G*, PHS A § 351A*, PHS A § 361, PHS A § 2801, PHS A § 2812*

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with*

Allocation Methods: Direct, Federal Intramural, Cooperative Agreements, including Formula Grants/Cooperative Agreements; and Contracts

As the events of COVID-19 have made starkly clear, the United States faces growing health threats in today's highly connected world. Local disease outbreaks can escalate into regional, national, or global emergencies. As seen in the last two decades with H1N1, Ebola, Zika, SARS-CoV-1 and SARS-CoV-2, new diseases can emerge, or localized disease outbreaks can spread rapidly, affecting human health and prosperity around the world. CDC's preparedness efforts rely on the agency's expertise in laboratory science, public health surveillance, epidemiology, and incident management and its longstanding relationships with federal, state, territorial, tribal, local, and global partners. While the U.S. public health preparedness infrastructure has been expanded over the last 20 years, COVID-19's devastating effects demonstrate the clear need for further investment, described in the National Academies of Sciences, Engineering, and Medicine (NASEM), "[Evidence-based Practices for Assessment and Recommendations for the Field](#)"³⁴⁹

CDC's FY 2022 request of **\$842,200,000** for Public Health Preparedness and Response is level with FY 2021 Enacted. It comprises the Public Health Emergency Preparedness (PHEP) cooperative agreement program with state, local, and territorial (SLT) health departments (\$695,000,000); Academic Centers for Preparedness (\$8,200,000), and CDC Preparedness and Response Capability (\$139,000,000), which provides further support for health departments to ensure readiness and adaptability in the face of public health emergencies.

³⁴⁹Evidence-based Practices for Assessment and Recommendations for the Field, 2020. <https://www.nationalacademies.org/our-work/evidence-based-practices-for-public-health-emergency-preparedness-and-response-assessment-of-and-recommendations-for-the-field>.

PUBLIC HEALTH PREPAREDNESS AND RESPONSE

BY THE NUMBERS¹

- **62**—Health departments from 50 states, 4 large metropolitan areas, and 8 U.S. territories participate in CDC’s Public Health Emergency Preparedness (PHEP) program.
- **2,459**—State, local, territorial, and federal preparedness and response employees across the country are funded wholly or in part by CDC’s PHEP program.
- **2,431**—Federal, state, territorial, and local emergency responders trained in 2019 through virtual and in-person trainings on topics including distribution and dispensing of medical countermeasures (MCM).
- **119**—Nations reached with the Public Health Emergency Management (PHEM)/Public Health Emergency Operations Center (PHEOC) COVID-19 Webinar Series, from May – December 2020.
- **5,818**—Cumulative participants in weekly PHEM/PHEOC COVID-19 Webinar Series, with 29 weekly webinars conducted in 2020.
- **3,117**—CDC responders received Emergency Operations Center (EOC) Day One training in 2020 to ensure their seamless transition into the COVID-19 response.
- **143**—Graduates of the Public Health Emergency Management Fellowship Program from over 37 countries and the African Union.
- **81**—CDC response leaders have graduated from the Incident Manager Training and Development Program; increasing the cadre of CDC response leaders by 623% (or 6-fold).
- **800%**—Increase in call volume from January 21 to April 15 to CDC’s Emergency Operations Center (EOC) watch desk. Since then, call volume has steadily remained 160% over the normal call volume throughout the response.
- **63,885+**—Inquiries to the EOC watch desk that CDC has responded to, of which about 55% were from doctors, nurses, or other clinical staff and health departments, from January 21 – December 31, 2020.
- **4.81 million²**—Hours logged to support the COVID-19 response within the Incident Management Structure in CDC’s EOC, from January 1 – November 30, 2020, from a total of 7,915 personnel.
- **674**—Permits issued through CDC’s regulatory authority (42 CFR Part 71.54), using the electronic eIPP system for facilities importing SARS-CoV-2 into the United States. as of December 31, 2020.
- **243,052**—COVID-19 reports processed from January 1 to December 31, 2020 through CDC’s Epidemic Information Exchange, a 653 % increase over the reporting period for the 2014-2016 Ebola Response.

*References

¹All information and calculations are from CDC program data.

Public Health Preparedness and Response Funding History	
Fiscal Year	Dollars (in millions)
2018 ¹	\$840.000
2019	\$834.865
2020	\$827.200
2021 Enacted	\$842.200
2022 President's Budget	\$842.200

¹ FY 2018 amount is comparably adjusted to reflect the transfer of the SNS to ASPR.

² FY 2019 and FY 2020 Enacted amounts are comparably adjusted to reflect \$23 million realignment from Preparedness and Response Capability to the Public Health Scientific Services account.

State and Local Public Health Emergency Preparedness Budget Request

After the terrorist and subsequent anthrax attacks of September 2001, CDC established the Public Health Emergency Preparedness (PHEP) cooperative agreement program to provide expertise in public health emergency preparedness and response systems, distribute and dispense medical countermeasures, establish laboratory and epidemiologic systems that enable early threat detection and identification, and train and support public health professionals for day-to-day health department operations and surge capacity.

The PHEP cooperative agreement program maintains this infrastructure and prepares for the future by evaluating recipients' capabilities for responding to public health threats, and providing technical expertise to address identified gaps. For example, CDC and cooperative agreement recipients used the PHEP planning scenario from anthrax readiness to plan large-scale COVID-19 vaccination. CDC also assigns highly skilled, senior professionals, Career Epidemiology Field Officers (CEFOs) to state, territorial, and local health departments to strengthen nationwide epidemiologic capacity and public health preparedness, and Preparedness Field Assignees (PFAs) who fill state-level personnel and preparedness capacity gaps. This human capacity is a core component of the U.S. preparedness safety net.

Budget Request

CDC's FY 2022 request of **\$695,000,000** for State and Local Preparedness and Response Capability is level with FY 2021 Enacted. At this level, CDC will further support state, tribal, local, and territorial health departments to ensure their capability, flexibility, and adaptability in the face of naturally occurring or intentional events potentially causing public health emergencies. CDC will continue to fund all 50 states, four large metropolitan areas, and eight U.S. territories and freely associated states through the PHEP cooperative agreement.

Public Health Preparedness Capability Improvements

CDC, along with multiple stakeholders, developed and published in CDC's *Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health*, a national public health framework of 15 capabilities for prioritizing, organizing, and assessing preparedness. CDC rigorously evaluates PHEP recipients' ability to operationalize preparedness capabilities using an operational readiness review process. In 2021, CDC plans to expand these operational reviews from their current focus on capabilities for distributing countermeasures to demonstrating measurable progress toward readiness for all 15 capabilities by June 2024.

Medical Countermeasure Readiness

CDC provides funding to PHEP recipients to strengthen their medical countermeasure planning and response capabilities. These include providing monthly virtual and in-person training, fulfilling requests for specialized support and assistance, and demonstrating how community planners can use tools such as the COVID-19 Surge tool, pandemic influenza electronic exercise tool, and the vaccine targeting checklist in their planning and exercising.

Since 2004, the PHEP program's Cities Readiness Initiative (CRI) has enabled state and local jurisdictions to respond to public health emergencies needing life-saving medicines and medical supplies. Specifically, CRI funds 72 cities and metropolitan areas (at least one in every state) to develop, test, and maintain plans to quickly receive medical countermeasures from the Strategic National Stockpile and distribute and dispense them to local communities. In FY 2021, PHEP recipients will receive approximately \$63.7 million in CRI funding, a \$10.8 million increase, to support all-hazards planning for medical countermeasure distribution and dispensing, as well as to support preparedness activities across all 15 Public Health Emergency Preparedness and Response Capabilities within these large metropolitan areas.

CDC’s Medical Countermeasure Operational Readiness Review (MCM ORR) is a rigorous, evidence-based assessment that evaluates a jurisdiction’s MCM planning capabilities and operational capacity for distributing and dispensing MCMs during a public health emergency. CDC MCM subject matter experts help PHEP recipients improve their MCM planning and operations in support of national health security efforts by:

- Providing targeted technical assistance to address gaps.
- Offering state and local MCM coordinators ongoing training.
- Supporting innovative partnerships and other strategies to identify staffing solutions for MCM operations.
- Developing guidance and training to clarify annual and five-year exercise requirements.

Preparedness Planning Improves COVID-19 Response

Before 9/11, SLT health departments lacked critical systems for launching an emergency response while conducting routine public health activities. Today, with the support of CDC’s PHEP program, SLT health departments have built and maintained public health emergency management systems and established community partnerships that can be leveraged to support COVID-19 response activities. PHEP funding has been instrumental in staffing state and local health departments, building electronic lab, surveillance and data-sharing systems, developing all-hazards response plans, establishing a nationwide system for rapid delivery of lifesaving interventions, building emergency operations centers and risk communications systems, buying personal protective equipment for responders, and funding communications and information technology equipment and maintenance support.

Infrastructure built as a result of PHEP funding and guidance have enabled PHEP recipients to stand up emergency operations functions, rapidly distribute millions of laboratory test kits, personal protective equipment, and other critical supplies needed to respond to the COVID-19 pandemic. For example,

- In Rhode Island, public health officials drew on their medical countermeasure protocols to successfully receive, stage, and store all assets the state received from the Strategic National Stockpile for the COVID-19 response.
- In multiple states, technical assistance provided by PHEP subject matter experts has improved jurisdictions’ ability to properly store medical countermeasures, including those requiring strict cold chain management.
- Maryland uses PHEP funding and relationships with other federal partners to improve security at state warehouses containing valuable countermeasures. Funding was used to purchase security cameras and other equipment, and agents from the Drug Enforcement Administration patrol property and routinely conduct exercises and training at the warehouses, providing an extra layer of security for federal and state assets.

Laboratory Preparedness and Response

The Laboratory Response Network (LRN), which celebrated its 20th anniversary in 2019, is a national security asset for preparedness and rapid response to biological, chemical, and other high-priority public health emergencies. CDC manages this coordinated national network of public health and other laboratories that provide timely, reliable laboratory tests for biological (LRN-B) and chemical (LRN-C) threats. CDC supports the LRN with expertise in biological and chemical threats, laboratory science, public health response, and clinical recommendations. CDC’s longstanding partnerships with state and local health agencies and other federal partners connect experts for supporting the LRN. Public health officials use LRN test results to make critical decisions that protect the public from harm. For example, during the 2019 outbreak of E-cigarette or Vaping Product Use-Associated Lung Injury (EVALI), LRN-C laboratories coordinated with healthcare providers and local

health departments to submit clinical samples and case-associated vaping devices to the CDC and FDA for testing. These efforts helped identify vitamin E acetate within the lungs of affected individuals and supported efforts to prevent further disease.

PHEP funding supports both LRN-B and LRN-C state and local laboratories. State public health departments determine how many and what type of laboratories are needed in their jurisdictions and allocate PHEP funds accordingly. Funding for LRN-B supports routine and reliable testing for biological threats, emerging infectious diseases including COVID-19, and high-consequence pathogens—like Ebola and smallpox. CDC’s LRN-B provides an adaptive and scalable framework to respond to individual public health threats at the state and/or local level, as well as large outbreaks or large-scale threat events. Through October 2020, LRN-B laboratories conducted more than 5,000 tests in more than 120 member laboratories. In FY 2021, these LRN-B laboratories will continue to use PHEP funding to support testing readiness and strengthen national security for biothreats and emerging infectious diseases.

Additionally, PHEP provides specific funds for the specialized equipment, reagents, and methodologies required for LRN-C Level 1 laboratories, maintaining the highest level of testing and surge capacity. In FY 2021, LRN-C Level 1 labs will continue to receive dedicated PHEP funding to purchase and maintain critical instrumentation and other lab equipment; train staff and conduct proficiency testing; and support participation in local, state, and national exercises. Importantly, CDC recently leveraged this capability to support state and local response to the opioid epidemic, which claimed 70,980 lives in 2019.

Over the last two years, CDC:

- Distributed multiple assays to LRN-B that increase their capability to: detect or determine antimicrobial susceptibility of *B. anthracis*; detect multiple biothreats simultaneously in a multiplex system; detect and differentiate the *Brucella* species; and detect *F. tularensis* and *Y. pestis*.
- Collaborated with LRN laboratories to evaluate new technologies and reagent shelf-life stability to increase efficiency and sustainability.
- Partnered with LRN-C member labs to deploy a newly developed method for testing sulfur mustard metabolites to other network labs.
- Expanded LRN-C capacity and capabilities to identify exposures to high threat chemical agents such as nerve agents and sulfur mustards, as well as industrial chemicals such as mercury and arsenic.
- Initiated a pilot to establish an LRN-R to increase the national capacity to test for internal radiation contamination.

With CDC’s support and expertise for local laboratories, laboratories are more prepared than ever to quickly identify threats. In 2019 and 2020, CDC conducted 2,859 tests in over 120 LRN-B member laboratories. CDC is uniquely positioned to provide leadership to the LRN’s network of integrated laboratories, assuring consistent, and confident detection of biological and chemical threat agents and emerging infectious diseases. In FY 2022, the LRN will continue developing, improving, and deploying diagnostic assays to enhance public health laboratory preparedness response.

CDC Support to State and Local Public Health Departments

The majority of PHEP funding supports staffing in PHEP recipient jurisdictions and funding to local health departments and tribal entities in their jurisdictions. The PHEP program supports more than 2,400 staff at state, local, and territorial health departments who work every day to strengthen public health preparedness and response capabilities. These staff provide critical public health expertise where emergencies begin—at the local level—enabling faster and more effective responses. Areas of expertise include epidemiology, surveillance, outbreak response, information technology, MCM distribution, and MCM dispensing. In addition, as of

November 2020, 53 CDC field staff are embedded in state, territorial, and local public health jurisdictions to provide hands-on support of preparedness and response activities. These field staff provide a direct, two-way connection between CDC and state and local public health partners, which are leveraged during active responses, including the current COVID-19 response.

Field staff include CDC's cadre of 34 Career Epidemiology Field Officers (CEFOs) who support 31 state, local, and territorial jurisdictions to advance their epidemiologic and response capacity and capabilities for public health emergencies. They also mentor and train state, local, and territorial staff and students in public health emergency management principles, supporting the next generation of public health professionals. Preparedness Field Assignees (PFAs) are a vital link in the public health preparedness workforce pipeline and fill state-level personnel and preparedness capacity gaps.

In FY 2022, CDC will continue to work closely with funded state, local, and territorial health departments to:

- Identify opportunities for continued program improvement during public health emergencies, including using lessons learned during public health responses such as COVID-19, Ebola, Zika, and hurricane responses, to strengthen communication between CDC and key stakeholders. CDC will analyze the impact of and lessons learned from the COVID-19 pandemic response by updating PHEP strategies, activities, outcomes, and data reporting objectives, which will further strengthen the operational readiness of state, local, and territorial public health systems.
- Strengthen and sustain the day-to-day public health impact of the PHEP program by providing guidance and technical expertise to state and local health departments and ensuring critical infrastructure such as emergency operations centers, laboratories, and communication systems is maintained.
- Emphasize whole community planning, which promotes planning for all populations, including those with access and functional needs. Examples of populations with access and functional needs include, but are not limited to, children, pregnant women, postpartum and lactating women, racial and ethnic minorities, older adults, persons with disability, persons with chronic disease, persons with limited English proficiency, persons with limited transportation, persons experiencing homelessness, and disenfranchised populations.
- Integrate tribal populations into preparedness and response plans.

In addition, CDC will apply the lessons learned from recent large-scale responses including COVID-19 to identify and develop potential reforms to the PHEP program.

FY 2022 Congressional Justification

PHEP Awards*			
(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Number of Awards	62	62	62
- New Awards	0	0	0
- Continuing Awards	62	62	62
Average Award	\$10,045,968	\$10,271,774	\$10,271,774
Range of Awards	\$374,474-\$42,272,321	\$380,471-\$43,990,873	\$380,471-\$43,990,873
Total Awards	\$622,850,000	\$636,850,000	\$636,850,000

*CDC awards PHEP funding using the formula established under section 319C-1of the Public Health Service Act. The formula includes a base funding amount, plus funding for population- based on risk and "carve-outs" for Cities Readiness Initiative and Level 1 Chemical Labs.

Academic Centers for Public Health Preparedness Budget Request

The rapid and evolving COVID-19 pandemic demonstrates the dynamic nature of public health threats. Academic Centers enable public health practitioners, academic and cross-sector partners to collectively ensure that new knowledge and interventions are implemented in a manner that protects the public's health.

Budget Request

CDC's FY 2022 request of **\$8,200,000** for the Academic Preparedness Centers is level with FY 2021 Enacted. CDC will continue to support research and training to improve the nation's ability to prepare for, respond to, and recover from local and national emergencies.

In FY 2022, CDC will:

- Disseminate and socialize a public health emergency preparedness and response (PHEPR) research agenda for state, local, tribal, and territorial health departments emphasizing select PHEPR capabilities.
- Establish broad partnerships to collectively establish an evidence base that strengthens preparedness and response practice at the federal, state, local, tribal and territorial levels.
- Advance state, local, tribal and territorial public health departments' workforce development needs through the development and delivery of public health preparedness and response core competency-based training programs and services focused on select areas identified in the research agenda.

CDC Preparedness and Response Capability Budget Request

CDC's Preparedness and Response Capability supports critical infrastructure and research to facilitate the prevention of and rapid response to public health emergencies by:

- Developing and coordinating an emergency preparedness and response research agenda. This work builds and evaluates the underlying scientific framework supporting the nation's capacity to prepare for and respond to public health emergencies. Examples of research topics include anthrax response coordination; chemical, radiological, and biological response support; and the special needs of children during responses.
- Ensuring, through the Select Agent Program, that laboratories working with the most dangerous biological agents and toxins do so as safely and securely as possible.
- Staffing, operating, and maintaining a 24/7 Emergency Operations Center (EOC) from which CDC deploys scientific experts, coordinates delivery of supplies and equipment to incident sites, monitors response activities, and provides resources to state and local public health departments. The EOC activated January 20, 2020 for the COVID-19 response and remains activated.
- Using the Graduated Response Framework and implementing an Incident Management System (IMS) to direct and centralize CDC's public health responses, ensuring effective and efficient operations regardless of the event's size and scope.
- Providing emergency management training and exercises that prepare CDC leaders and staff to respond to all types of emergencies. During the COVID-19 response, CDC implemented training to ensure responders can operate efficiently during the ongoing COVID-19 response.
- Enhancing the Laboratory Response Network (LRN) through CDC's development of guidance, training, and proficiency testing for member labs enables rapid detection of biological, chemical, and radiological threats.

Budget Request

CDC's FY 2022 request of **\$139,000,000** for CDC Preparedness and Response Capability is level with FY 2021 Enacted. With this request, CDC will focus on mission-critical activities including the Select Agent Program.

Safe and Secure Use of Dangerous Biological Agents and Toxins

Scientific research in laboratories is critical to our nation's defense against both naturally occurring diseases and bioterrorism. Laboratory research with biological select agents and toxins can lead to important breakthroughs in vaccine development, drug therapies, diagnostic testing, and other discoveries that save lives. Common examples of select agents and toxins include anthrax, Ebola virus, bubonic plague, and ricin. If handled incorrectly—or in the hands of the wrong people—select agents and toxins can pose a severe threat to the health and safety of people, plants, or animals.

CDC develops, implements, and enforces regulations to ensure this work is done as safely and securely as possible. This includes managing two critical programs: The Federal Select Agent Program and the Import Permit Program.

Federal Select Agent Program

CDC partners with the U.S. Department of Agriculture (USDA) to manage the Federal Select Agent Program (FSAP). Together, the agencies develop and enforce regulations on the possession, use, and transfer of 67 biological pathogens and toxins can pose a severe threat to human, animal, and/or plant health, and animal and plant products. Laboratories researching with select agents and toxins must register with the FSAP. CDC oversees approximately 86% of the registered entities (with the rest overseen by USDA).

The CDC developed and implemented the electronic Federal Select Agent Program (eFSAP) information system, which is a joint-agency, high-security, web-based system. FSAP and the regulated community uses the two-way communication portal to improve regulatory oversight through process improvements. Due to this investment, during the COVID-19 pandemic, CDC has been able to continue FSAP program operations remotely.

CDC routinely inspects the nearly 250 registered laboratory facilities to ensure compliance with the select agent regulations. These inspections allow CDC to confirm appropriate biosafety and security measures are in place, including that laboratorians are adequately trained to implement plans and procedures for containment of select agents at each facility.

Import Permit Program

CDC's Import Permit Program (IPP) regulates the importation of infectious biological materials that could cause disease in humans to prevent the introduction and spread into the United States. Prior to issuing import permits, IPP reviews all applications to ensure facilities have appropriate biosafety measures in place for working with these imported materials. As needed, the IPP also inspects the applicant's facility to confirm implementation of appropriate measures to minimize the risk of accidental release of infectious biological agents or vectors of human disease (e.g., mosquitoes, rodents). CDC issues over more than 2,000 import permits each year.

CDC developed the electronic Import Permit Program (eIPP) information system, a moderate security, cloud-based information system, for receiving all import permit applications from potential U.S. importers. Due to this investment, CDC has been able to continue IPP program operations remotely.

In support of the COVID-19 response, as of November 17, 2020, the CDC issued 591 permits for SARS-CoV-2 using the eIPP information system. CDC estimates issuance of approximately 600 permits by the end of 2020. In 2020 CDC onboarded four additional microbiologists to inspect facilities requesting to import SARS-CoV-2 into the United States, supported through supplemental appropriations. The inspections ensure that facilities receiving an import permit to conduct work with SARS-CoV-2 materials have appropriate biosafety measures to prevent the introduction or spread of the virus.

In FY 2022, CDC will continue to:

- Ensure the safe and secure handling of biological agents and toxins.
- Monitor imports of infectious biological materials, which is critical to national security and public health.
- Inspect laboratories working with select agents and toxins and imported materials.
- Enhance eFSAP and eIPP information systems to continue to evolve CDC operations.

Effective Public Health Emergency Management

CDC's Emergency Management Program (EMP) coordinates the agency's public health preparedness, response, and recovery activities. The EMP integrates public health practice with emergency management principles using the National Incident Management System.³⁵⁰ An Incident Management System (IMS) is an internationally recognized model for effectively managing emergency responses. Having an IMS in place organizes the command and control for a response so that CDC can rapidly understand the public health problem and develop interventions that reduce harm and save lives during public health emergencies. On December 18, 2018, CDC's EMP was formally reaccredited by the Emergency Management Accreditation governing body. CDC remains the only federal agency with an accredited EMP, demonstrating the agency's commitment to leadership in public

³⁵⁰ The National Incident Management System is a comprehensive, nationwide, systematic approach to incident management, including the command and coordination of incidents, resource management, and information management. https://www.fema.gov/media-library-data/1508151197225-ced8c60378c3936adb92c1a3ee6f6564/FINAL_NIMS_2017.pdf.

health emergency management by meeting a national standard established by an external accrediting organization.

CDC's largest scale emergency response activities are centralized in the agency's Emergency Operations Center (EOC). No matter the type of threat—from infectious diseases to natural disasters and terrorism—highly trained experts and scientists gather in the EOC to monitor information, prepare for known and unknown events, and provide real-time, coordinated response capability.

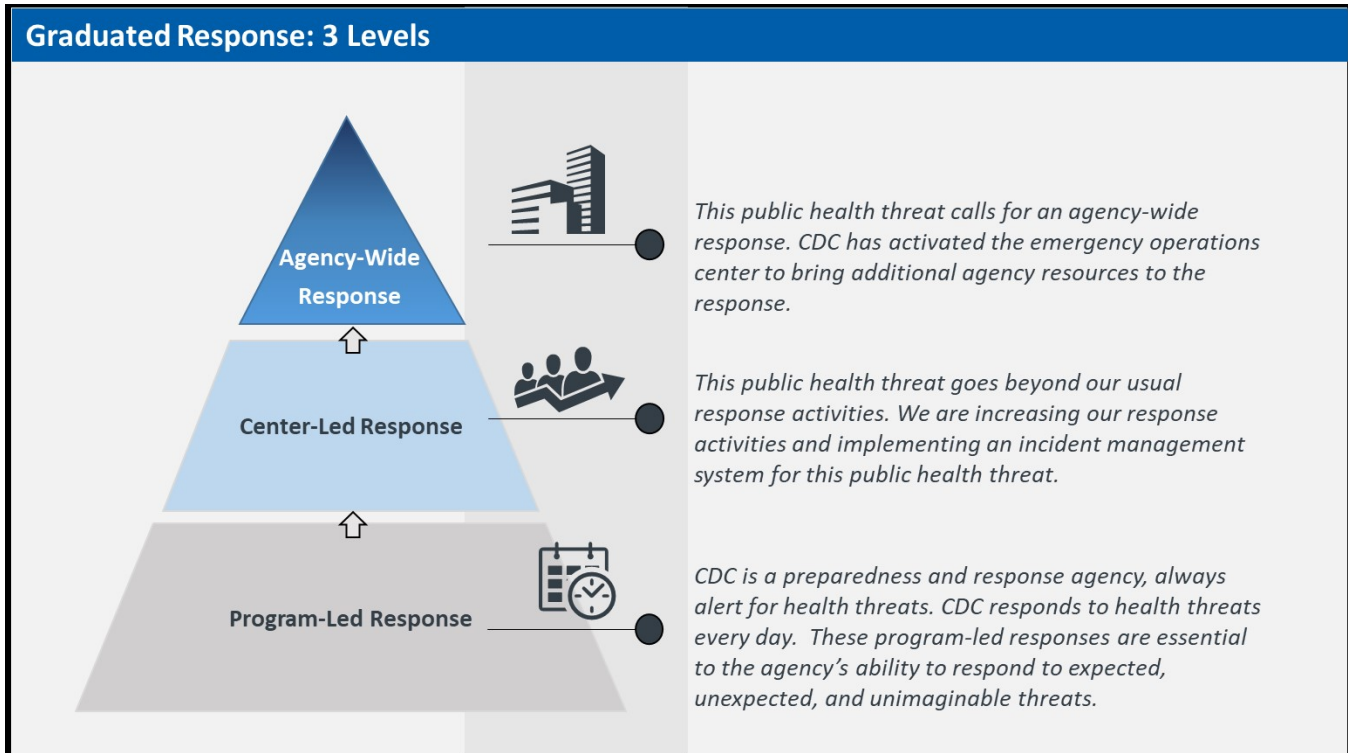
On January 20, 2020, CDC activated the Emergency Operations Center for the COVID-19 response and remains activated. CDC responders include dozens of the nation's top experts in respiratory diseases, epidemiology, laboratory science, and public health data and analytics. In just the first eleven months of the COVID-19 response, 7,751 personnel worked 4,487,075 hours. These responders continue to work 24/7 to:

- **Respond** to 59,900+ inquiries to CDC, of which about 54% were from doctors, nurses, or other clinical staff and health departments.
- **Guide** Americans, business, and government entities through 2,699 documents.
- **Share information** through 7,602 CDC social media posts on the outbreak making 2.6+ billion impressions.

Incident Manager Training and Development Program

The Incident Manager Training and Development Program (IMTDP) continues to be a key success in how CDC builds response leader capacity across programs by training the right people at the right time for the right job. Since its inception in 2015, IMTDP has graduated a total of 84 CDC response leaders, increasing the cadre of CDC Incident Managers (IMs) by six-fold (from 13 to 82 IMs). In concert with the work to develop program-level responses, CDC now has trained cadre to lead and manage responses, such as the COVID-19 response, which is the largest in CDC history. As of November 1, 2020, 93% (n=76) of IMTDP alumni are working the response, and many serving in multiple leadership roles to meet the demand. Almost half of the IMTDP participants working on the COVID-19 response have served in one or more leadership roles. The program's success has led to the development of similar training for the COVID-19 response, which builds emergency response capabilities at both the program and agency levels. Additionally, IMTDP has expanded its proven training model and strategy to prepare CDC Responders and Operation Coordinators. Since April 2020, a virtual orientation to working in the EOC, EOC Day One, has trained nearly 2,500 CDC COVID-19 responders, including Officers and Fellows from the Epidemic Intelligence Service, Laboratory Leadership Service, and Global Rapid Response Teams. Also, the Operation Coordinator Training Series launched and is made up of 10 modules that prepare existing and future coordinators to support the operational needs of Teams and Task Forces. Since May, IMTDP trained over 300 COVID-19 response Operation Coordinators.

CDC's Three Graduated Response Levels



CDC developed the Graduated Response Framework (GRF) for better coordination and organization of CDC’s response operations. Implemented fully in January 2020, the goals of the framework are to improve the effectiveness and efficiency of CDC’s response operations by recognizing that CDC’s response capabilities have matured at all levels of the organization based on years of investments in preparing and responding to public health threats. This concept was informally put into practice during recent CDC responses for a nationwide Hepatitis A outbreak, and the outbreak of e-cigarette, or vaping, product use associated lung injury (EVALI). The center-led response to COVID-19 began on January 7, 2020 and escalated to an agency-wide response on January 20, 2020. The escalation was deemed necessary to ensure agency-wide coordination of CDC’s resources in response to this unprecedented worldwide public health threat.

Amid the COVID-19 pandemic CDC operated within the GRF to maximize its use of resources to respond to additional public health emergencies. For example, CDC de-escalated the 2018 Ebola response down to a center-led response on June 26, 2020, after recognizing the response needs no longer required the coordination and resources of an agency-wide response even after smaller outbreaks continued to occur. The lead centers could scale and support the outbreak response without requiring the full breadth of the agency resources.

State Table: Public Health Emergency Preparedness Cooperative Agreements¹

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$8,740,894	\$8,882,198	\$8,882,198	\$0
Alaska	\$5,169,900	\$5,200,000	\$5,200,000	\$0
Arizona	\$12,164,945	\$12,681,061	\$12,681,061	\$0
Arkansas	\$6,558,883	\$6,656,641	\$6,656,641	\$0
California	\$42,272,321	\$43,990,873	\$43,990,873	\$0
Colorado	\$10,066,666	\$10,397,154	\$10,397,154	\$0
Connecticut	\$7,514,989	\$7,673,758	\$7,673,758	\$0
Delaware	\$5,312,726	\$5,371,796	\$5,371,796	\$0
Florida	\$30,596,524	\$31,805,732	\$31,805,732	\$0
Georgia	\$16,188,726	\$16,800,499	\$16,800,499	\$0
Hawaii	\$5,627,369	\$5,305,643	\$5,305,643	\$0
Idaho	\$5,546,900	\$5,236,538	\$5,236,538	\$0
Illinois	\$16,052,302	\$16,511,411	\$16,511,411	\$0
Indiana	\$11,238,343	\$11,561,957	\$11,561,957	\$0
Iowa	\$6,718,250	\$6,815,087	\$6,815,087	\$0
Kansas	\$7,009,071	\$6,766,012	\$6,766,012	\$0
Kentucky	\$8,348,507	\$8,498,657	\$8,498,657	\$0
Louisiana	\$9,102,809	\$8,914,209	\$8,914,209	\$0
Maine	\$5,542,500	\$5,200,000	\$5,200,000	\$0
Maryland	\$11,105,328	\$11,492,086	\$11,492,086	\$0
Massachusetts	\$13,031,996	\$13,405,852	\$13,405,852	\$0
Michigan	\$16,309,591	\$16,698,169	\$16,698,169	\$0
Minnesota	\$11,235,645	\$11,548,914	\$11,548,914	\$0
Mississippi	\$6,936,267	\$6,644,589	\$6,644,589	\$0
Missouri	\$10,691,802	\$10,987,602	\$10,987,602	\$0
Montana	\$5,542,500	\$5,200,000	\$5,200,000	\$0
Nebraska	\$5,726,102	\$5,436,141	\$5,436,141	\$0
Nevada	\$6,924,768	\$7,147,460	\$7,147,460	\$0
New Hampshire	\$5,280,301	\$5,334,113	\$5,334,113	\$0
New Jersey	\$15,144,167	\$15,690,856	\$15,690,856	\$0
New Mexico	\$6,664,176	\$6,750,227	\$6,750,227	\$0
New York	\$18,683,356	\$19,445,160	\$19,445,160	\$0
North Carolina	\$15,108,972	\$15,535,833	\$15,535,833	\$0
North Dakota	\$5,169,900	\$5,200,000	\$5,200,000	\$0
Ohio	\$17,502,622	\$18,012,980	\$18,012,980	\$0
Oklahoma	\$7,742,012	\$7,900,584	\$7,900,584	\$0
Oregon	\$8,161,938	\$8,372,359	\$8,372,359	\$0
Pennsylvania	\$19,315,104	\$19,494,762	\$19,494,762	\$0
Rhode Island	\$5,271,773	\$5,326,988	\$5,326,988	\$0
South Carolina	\$9,979,562	\$10,206,444	\$10,206,444	\$0
South Dakota	\$5,542,500	\$5,200,000	\$5,200,000	\$0
Tennessee	\$11,654,608	\$11,616,659	\$11,616,659	\$0
Texas	\$39,129,703	\$40,898,213	\$40,898,213	\$0
Utah	\$6,823,464	\$6,994,062	\$6,994,062	\$0
Vermont	\$5,169,900	\$5,200,000	\$5,200,000	\$0
Virginia	\$14,966,098	\$15,452,622	\$15,452,622	\$0
Washington	\$12,478,656	\$12,941,653	\$12,941,653	\$0
West Virginia	\$5,196,440	\$5,244,917	\$5,244,917	\$0
Wisconsin	\$11,404,763	\$11,612,268	\$11,612,268	\$0

FY 2022 Congressional Justification

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Wyoming	\$5,169,900	\$5,200,000	\$5,200,000	\$0
Localities				\$0
Chicago	\$9,651,560	\$10,045,251	\$10,045,251	\$0
Washington, D.C.	\$6,467,129	\$6,537,701	\$6,537,701	\$0
Los Angeles County	\$19,648,468	\$20,682,300	\$6,537,701	\$0
New York City	\$18,608,800	\$19,338,009	\$19,338,009	\$0
Territories				\$0
American Samoa	\$412,042	\$422,440	\$422,440	\$0
Guam	\$534,657	\$550,942	\$550,942	\$0
Marshall Islands	\$409,243	\$426,964	\$426,964	\$0
Micronesia	\$468,367	\$488,764	\$488,764	\$0
Northern Mariana Islands	\$411,502	\$425,119	\$425,119	\$0
Puerto Rico	\$6,560,315	\$6,613,160	\$6,613,160	\$0
Republic of Palau	\$374,474	\$380,471	\$380,471	\$0
Virgin Islands	\$466,904	\$478,140	\$478,140	\$0
Subtotal States	\$559,304,906	\$570,460,739	\$570,460,739	\$0
Subtotal Localities	\$54,375,957	\$56,603,261	\$56,603,261	\$0
Subtotal Territories	\$9,169,137	\$9,786,000	\$9,786,000	\$0
Total Resources	\$622,850,000	\$636,850,000	\$636,850,000	\$0

¹ In FY 2020, 11 jurisdictions (HI, ID, KS, LA, ME, MS, MO, NE, PA, SD, TN) received one-time funding as part of the last year of a four-year PHEP initiative to update chemical laboratory equipment in LRN-C Level 2 laboratories.

CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$198.570	\$123.570	\$548.570	+\$425.000
PPHF	\$160.000	\$160.000	\$160.000	\$0
Total Request	\$358.570	\$283.570	\$708.570	+\$425.000
FTEs	1,929	2,035	2,075	+40
-- Preventive Health and Health Services Block Grant (PPHF)	\$160.000	\$160.000	\$160.000	\$0
-- Public Health Leadership and Support	\$113.570	\$113.570	\$113.570	\$0
-- Infectious Diseases Rapid Response Reserve Fund	\$85.000	\$10.000	\$35.000	+\$25.000
-- Public Health Infrastructure and Capacity	N/A	N/A	\$400.000	+\$400.000

Enabling Legislation Citation: PHSA § 301, PHSA § 304, PHSA § 306*, PHSA § 307, PHSA § 308, PHSA § 310, PHSA § 310A*, PHSA § 311, PHSA § 317, PHSA § 319, PHSA § 319A*, PHSA § 319D*, PHSA § 322, PHSA § 325, PHSA § 327, PHSA § 361-369, PHSA § 391, PHSA § 399G*, PHSA § 399U, PHSA § 2821*, Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriations Act, 2019 (P.L. 115-245, Division B)

Enabling Legislation Status: Permanent Indefinite

Authorization of Appropriations for FY 2021: Indefinite; Expired/Expiring noted with *

Allocation Methods: Direct Federal/Intramural, Contracts, Competitive Grants/Cooperative Agreements

CDC works around the clock to protect the public’s health.³⁵¹ Never has that been more apparent than during the response to the Coronavirus Disease 2019 (COVID-19) pandemic, the most significant public health challenge in terms of lives lost and economic cost to face the nation. With each American impacted by the pandemic, CDC is employing public health assets to mitigate, isolate, and defeat the disease. This recent history has revealed the effects of underinvestment in public health and the extent and impact of health disparities on large-scale emergencies and chronic public health concerns – further highlighting the need to invest in both domestic and global public health infrastructure. The U.S. public health system must become technologically advanced, flexible, rapidly deployed, and easily brought to scale to address what is currently unimaginable and unthinkable.

CDC’s FY 2022 request of **\$708,570,000** for CDC-wide Activities and Program Support is **\$425,000,000** above the FY 2021 Enacted Level and includes **\$400,000,000** for core public health infrastructure and capacity investments. Despite progress in domestic disease prevention, modernizing our federal, state, and local capability and public health systems is crucial to responding to and understanding unprecedented threats. This funding supports the agency’s investment in all components essential to its mission: addressing the deficit in public health infrastructure nationwide, attracting and retaining diverse leadership and expertise in public health, responding rapidly to new and emerging infections, and supporting its governmental partners at every level.

³⁵¹ <https://www.cdc.gov/about/organization/pledge.html>.

CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

BY THE NUMBERS

- **\$3.97 billion**—Total views of CDC websites in 2020; 858,128 total CDC-INFO calls and emails answered in 2020.
- **4,000**—Correspondences answered on over 1,000 topic areas from stakeholders, including Congress, academia, the business sector, employers, and other federal, state, and local partners.
- **\$208.7 million**—Provided to tribal nations, consortia, and organizations for tribes and national public health partners to address COVID-19. Includes \$142.0M that was distributed to 346 tribal recipients through a new, noncompetitive grant mechanism dedicated to tribal stakeholders.
- **346**—Tribal Recipients under a new program mechanism, including 290 tribal nations, 25 tribal consortia, and 31 tribal organizations, estimated to reach more than 490 tribes and more than 39 million individuals, according to grantee self-reports.
- **\$2.25 billion**—provided to health departments to expand COVID-19 response capacity and services among populations that are at higher risk and underserved, including racial and ethnic minority groups and people living in rural communities through a new program in FY 2021.
- **220**—Public Health Associate Program (PHAP) associates in FY 2020 working in public health organizations to increase delivery of essential public health services in 40 states; Washington, DC; Puerto Rico; and Guam; and in 14 tribal host sites or in tribally-focused assignments. Associates were deployed over 300 times to address COVID-19 in either their field host sites or elsewhere for the national response and another 18 times for other responses.
- **30%**—of Preventive Health and Health Services (PHHS) Block Grant funding that supports critical public health infrastructure needs, such as workforce, data and information systems, laboratory services, and epidemiologic capacity.
- **794**—Members of an online peer learning community for performance improvement in health departments, coordinated by the National Network of Public Health Institutes. Learning events in 2020 addressed connections with COVID-19, such as how quality improvement methods were used to rapidly test and refine COVID testing activities.
- **688**—Public health agencies funded by the PHHS Block Grant to improve the capacity of their information systems, with 434 agencies working to improve the efficiency and effectiveness of their operations, programs, and services, 163 emerging public health needs addressed, and 1,259 evidence-based public health interventions implemented.
- **82%**—of U.S. population served by an accredited health department as of November 2020. The Public Health Accreditation Board (PHAB), which is supported by CDC, has accredited 36 state health departments, 4 tribes, and 331 local health departments.¹ More than 80% of health departments indicated that, overall, accreditation has helped their response to the COVID-19 pandemic. In a PHAB survey, more than 80% of accredited health departments indicated that, overall, accreditation helped their COVID-19 response.²
- **\$10 million**—Savings to the U.S. government and \$12,000 savings to each state or local health department since CDC began creating medical illustrations that were previously acquired through commercial licensing.
- **\$9 million**—Savings to CDC from an agency-wide leadership review of data systems investments that minimized duplication, fostered collaboration, and promoted the use of enterprise or shared services and solutions.

CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

BY THE NUMBERS...

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References:

¹ Public Health Accreditation Board. Accredited Health Departments. Available at: <http://www.phaboard.org/news-room/accredited-health-departments/>

² Public Health Accreditation Board. PHAB Survey of Health Departments and Site Visitors During Response to COVID-19 Pandemic, July 2020. Available at: <https://phaboard.org/wp-content/uploads/Strategic-Planning-Survey-Findings-Final-July-2020.pdf>

*Unless otherwise note, all information and calculations are from CDC program data. `

CDC-Wide Funding History	
Fiscal Year	Dollars (in millions)
2018 (BA)	\$113.570
2018 (PPHF)	\$160.000
2019 (BA)	\$163.570
2019 (PPHF)	\$160.000
2020 (BA)	\$198.570
2020 (PPHF)	\$160.000
2021 Enacted (BA)	\$123.570
2021 Enacted (PPHF)	\$160.000
2022 President's Budget (BA)	\$548.570
2022 President's Budget (PPHF)	\$160.000

Public Health Infrastructure and Capacity

The nation's public health infrastructure must be technologically advanced, flexible, rapidly deployed, and easily brought to scale to address a full range of potential public health threats. For over a year, Americans have watched COVID-19 test the limits of the public health system and workforce, send shock waves through the economy, and change our entire way of life. Requiring the nation's state, tribal, local, and territorial public health departments to prepare for the next public health problem while endeavoring to respond to the current one is untenable. We must rebuild the responsive, highly coordinated, technologically advanced, strategic, and predictive public health system Americans need, now and in the future.

The ability to respond to a public health emergency requires a strong day-to-day public health system, supported by broad infrastructure that is not highly segmented by disease, condition, or activity. In addition to the COVID-19 pandemic, over the past 24 months, CDC has also responded to diverse public health threats from E-cigarette or Vaping Product Use-Associated Lung Injuries (EVALI), Ebola, complex multi-state food-borne disease outbreaks, wildfires, and hurricanes. The unique characteristics of each of these public health emergencies have relied upon CDC's depth of expertise to deploy a specialized scientific approach and called for a robust public health system with world-class infrastructure nationwide to stop disease at its source.

Budget Request

CDC's FY 2022 request of **\$400,000,000** reflects new, dedicated funding for investing in core public health infrastructure and capacity at the national, state, territorial, and local levels. Addressing gaps in capacity across levels of government to detect and respond to outbreaks while maintaining and surging in other problem areas requires investments to be disease-agnostic and flexible. Drawing on lessons learned, as well as the latest information and technologies, CDC will apply this funding toward addressing long-standing vulnerabilities in the core components of public health infrastructure in states, localities, and territories by improving methods and systems for public health assessment and action, training a cadre of experts who can deploy and support public health efforts, and building capacity to detect and respond to emerging biological threats.

This will begin to address critical gaps in public health infrastructure and facilitate the transition from sporadic emergency funding to a sustainable model that can respond to ongoing challenges and prevent future crises. Flexible, sustainable investments in infrastructure and capacity will save lives and avert economic losses caused by public health emergencies and unaddressed, chronic public health problems. In FY 2022, CDC will prioritize foundational funding to rebuild the most critical public health infrastructure needed to safeguard the Nation's health and economic security. CDC will invest in enhancing capacity of health departments in three critical areas of need.

Gathering the right information at the right time

Building the capacity of the public health system to assess risks as they arise in patients and communities and alert people across sectors and levels of government remains a significant challenge. The COVID-19 pandemic has emphasized the role that CDC and public health labs play in conducting critical surveillance and responding to outbreaks and emerging threats. CDC and state laboratories were required to flex and surge during peak periods of illness, far beyond routine clinical testing. As recently as 2019, CDC was only able to meet 50% of the state and local health departments' stated needs for epidemiology and laboratory capacity funding. Personnel support was the biggest unfunded need, followed by needs for equipment and supplies. In a post-COVID-19 world, laboratories must be able to increase the number and types of samples run, as well as the number of pathogens studied for surveillance and response to outbreaks and emerging threats. Investments in CDC's laboratory science will foster innovation, collaboration with the clinical system, and a commitment to quality.

Improving technologies at the state and local levels would enable public health labs to quickly utilize and scale up essential laboratory analyses.

CDC will also improve the dissemination of information across the public health system. This work requires engaging stakeholders such as community-based organizations and health services providers to improve the completeness of data, increasing implementation science that uses data to drive action, and ensuring transparency and accessibility of data. This funding will also build and refine the strategic communications skills across public health departments to address health equity, support hard-to-reach populations, and improve the timeliness of receiving and providing the right information at the right time .

Supporting front-line workers in public health

The public health system needs long-term, sustainable funding to secure the workforce needed to transition from the COVID-19 response to address fundamental and ongoing public health challenges, including response to the next public health emergency. This workforce centers on qualified public health professionals who will prepare for, respond to, and prevent public health crises. This means recruiting and retaining professionals who are skilled and can rapidly develop innovative approaches in surveillance and detection, risk communications, laboratory science, data systems, and disease containment. Building on investments from the COVID-19 supplemental appropriations, CDC will provide resources and tools to jurisdictional health departments that will enable them to build this capacity and boost participation in disease control measures among populations at higher risk, underserved, and disproportionately affected. By building a diverse and culturally competent workforce, this initiative will begin to address decades of institutional mistrust and will begin to remove barriers to care by ensuring that the workforce reflects the makeup of the communities they are serving.

This public health workforce will also continue to need professionals who are able to rapidly transform data into information that is accessible and transparent and ensures accountability. Funding will support jobs across the continuum from entry level to highly specialized, including program and intervention specialists, public health advisors, epidemiologists, laboratorians, and risk and health communicators. Furthermore, CDC will support critical training programs for public health professionals nationwide that develop strategic and systems thinking, data science, communication, and policy evaluation.

Improving protocols and processes for disease detection and containment

Addressing gaps in capacity across levels of government to detect and respond to outbreaks while maintaining and surging in other problem areas requires investments to be disease-agnostic and flexible. CDC will place senior-level scientists in every state to enhance public health coordination, collaboration, and communication across jurisdictions. CDC will also provide support to health departments to meet national quality standards; conduct performance improvement activities; increase communication and collaboration across the public health system; and assess the ability of health departments to meet changing conditions and needs. Funding will help health departments strengthen their abilities to effectively respond to a range of public health threats such as COVID-19 and build capacities that do not currently exist.

Infectious Diseases Rapid Response Reserve Fund

The Infectious Diseases Rapid Response Reserve Fund (IDRRRF) designated investments to address emerging outbreaks and prevent future infections. CDC staff have helped build sustainable capacity in detecting and responding to Ebola Virus Disease outbreaks in Africa, including possible reintroduction of Ebola related to prior outbreaks. In FY 2020, the IDRRRF also supported CDC's early and aggressive response to the global outbreak of COVID-19 and community spread in the United States. CDC's work with ministries of health and other partners over decades has helped to stop outbreaks and ensure long-term health security.

CDC has remained engaged since the recent conclusion of the 10th, 11th, and 12th outbreaks in the Democratic Republic of the Congo (DRC). IDRRRF currently supports two Ebola outbreaks. An outbreak was declared in February 2021 in the Republic of Guinea (Guinea), in Nzérékoré Prefecture – in the same area as Guinea's first Ebola outbreak. Guinea is also currently responding to concurrent epidemics of COVID-19, measles, yellow fever, and vaccine-derived polio, increasing the potential need for assistance to respond to the EVD epidemic.

The second outbreak was detected in February 2021, in DRC's province – the same location of the DRC's 10th Ebola outbreak that ended in June 2020. This outbreak, DRC's 12th, was declared over on May 3, 2021. CDC is maintaining a 90-day period of enhanced surveillance in DRC, which is crucial to detect any additional cases and limit the spread of the virus.

Budget Request

CDC's FY 2022 request of **\$35,000,000** for the Infectious Diseases Rapid Response Reserve Fund is **\$25,000,000** above the FY 2021 Enacted level. Replenishment of this fund ensures that CDC is positioned to respond quickly when an imminent public health emergency is detected. As evident with Ebola and COVID-19, rapid response is essential to emerging public health threats, and timely action for detection, investigation, and assistance that saves lives. CDC continues to remain alert and engaged with developing outbreaks that have the potential to imminently occur and potentially affect national security or the health and security of U.S. citizens, domestically or internationally.

Preventive Health and Health Services Block Grant (PHHS Block Grant)

CDC administers the PHHS Block Grant program, which funds all 50 states, the District of Columbia, 2 American Indian tribes, 5 US territories, and 3 freely associated states. Recipients implement innovative and community-driven methods that meet their priority public health needs, while also linking their goals and objectives to national *Healthy People* priorities. Recipients often partner and share resources with local and tribal public health organizations, community organizations, and others to achieve their goals.

In March 2021, CDC published the results of an [evaluation](#)² of activities from July 2018 to June 2019 that underscored the work of the PHHS Block Grant in strengthening the public health system by enabling state, tribal, local, and territorial agencies to improve public health infrastructure, address emerging public health needs, and practice evidence-based public health.³⁵² The funding supports clinical services, preventive screenings and services, outbreak control, workforce training, program evaluation, public education, data surveillance, chronic disease, injury and violence prevention, infectious disease, environmental health, community fluoridation, tobacco prevention, and emergency response.

Budget Request

CDC's FY 2022 request of **\$160,000,000** for Preventive Health and Health Services Block Grant (PHHS Block Grant) is level with FY 2021 Enacted. In FY 2022, CDC will continue to administer the program and recipients to address their locally-identified priority public health needs. CDC will continue to support these jurisdictions to use evidence-based methods and interventions, reduce risk factors, such as poor nutritional choices, smoking, and lack of physical activity; establish policy, social, and environmental changes; monitor and re-evaluate funded programs; and leverage other funding sources.

³⁵² <https://www.cdc.gov/phhsblockgrant/evaluation.htm>.

Public Health Leadership and Support Budget Request

CDC's investments in the agency's long-term workforce that manages with efficiency, transparency, and accountability – and in the cross-cutting, foundational capabilities and capacity of health departments around the country – have never been more essential to protecting public health. Together with CDC's Public Health Scientific Services budget, the Public Health Leadership and Support line funds:

- CDC's Office of the Director, which provides public health leadership to the nation;
- Cross-Cutting Offices that provide agency-wide support and leadership; and
- CDC's Center for State, Tribal, Local, and Territorial Support.

These offices support urgent and emergent public health response activities and facilitate the partnerships that promote CDC's guidance, communication, and strategy in the field. During the COVID-19 response, these investments allowed CDC to communicate with the public, Congress, academia, the business sector, employers, and other federal, state, and local partners in thousands of letters, funding opportunities, audits, briefings, and other engagements.

Office of the Director (OD)

CDC's OD fulfills the agency's responsibilities for responsive and timely communication to the public, key partners, and Congress. These functions include:

- The Office of the Chief of Staff, which manages all executive secretariat functions for the agency. The office reviews and clears policy documents and CDC director correspondence and works with the Government Accountability Office (GAO) and the Office of the Inspector General (OIG) to facilitate audits and engagements.
- The Communications Office, which ensures CDC's science, programs, and recommendations are accessible, understandable, and actionable and maximize public trust and credibility.
- The Policy and Strategy Office, which serves as an incubator for new and promising policies, programs, and systems so that CDC's science goes further, faster, and has the greatest public health impact. The office identifies high-value prevention and public health policies and interventions; increases the understanding and use of credible evidence of prevention's impact by policy makers, health care and public health; and catalyzes collaboration among public health, health care and other sectors.

Cross-Cutting Offices and Communities of Practice (CoP)

CDC maintains its commitment to minority health and health equity, equal employment opportunity, efficient business services, and responsive legislative and policy functions through four cross-cutting offices.

- **The Office of Minority Health and Health Equity** includes the Office of Women's Health and the Diversity Management Program, and provides leadership for CDC-wide policies, strategies, planning, and evaluation to eliminate health disparities.
- **The Office of Equal Employment Opportunity** is committed to fostering an inclusive culture at CDC/ATSDR through equity, opportunity, and respect and provides agency leadership on all matters related to equal employment opportunity. The office guides the agency's efforts to maintain a model EEO program, as defined by the U.S. Equal Employment Opportunity Commission (EEOC).
- **The Office of the Chief Operating Officer**, which administers the agency's budget, grants and contracts, facilities, physical security, workforce health and wellness, human resources, and information technology programs. The office aligns activities with the President's Management Agenda and Cross-Agency Priority (CAP) goals and funds the Office of Appropriations.

- **The CDC Washington Office (CDC/W)** represents the agency in Washington, D.C., to the Department of Health and Human Services, other agencies, and the Washington, D.C. policy community. CDC/W is the main point in CDC for receiving requests for information and assistance from the Congress, and works closely with CDC’s Office of the Director, program leadership, policy offices, and Office of Appropriations to respond to those requests.
- **The Deputy Director of Infectious Diseases (DDID)** leads a CoP providing leadership to promote and facilitate science, programs, and policies to reduce the burden of infectious diseases in the United States and globally. DDID serves to coordinate and provide leadership for the core public health activities to prevent and control infectious diseases and achieve the goal of a world safer from infectious diseases for all.
- **The Deputy Director for Non-Infectious Diseases** provides strategic direction and leadership for the prevention of non-infectious diseases, injuries, birth defects, disabilities, and environmental health hazards in the United States and globally. CDC’s non-infectious diseases national centers provide leadership and expertise in preventing and controlling non-infectious diseases, ensuring a strong foundation and building capacity with partners to create better health, quality of life, and resilience for all Americans across the lifespan.
- **The Deputy Director for the Public Health Science and Surveillance** coordinates leads, promotes, and facilitates science, surveillance, standards, and policies to reduce the burden of diseases, including modernization of the national public health data infrastructure. CDC’s national centers and offices in this Community of Practice provide national leadership in health statistics, disease surveillance, laboratory safety and services and science policy.
- **The Deputy Director for Public Health Service and Implementation Science (DDPHSIS)** serves as a principal advisor to the CDC director focused on advancing CDC’s goals through public health service and putting science into action. The Community of Practice office provides strategic direction and leadership that is focused on supporting and partnering with state, local, tribal, territorial, and global stakeholders to put science into action. The CoP’s centers and offices focus on global health, state, tribal, local, and territorial support, minority health and health equity, and preparedness and response.

Center for State, Tribal, Local, and Territorial Support (CSTLTS)

CDC’s Center for State, Tribal, Local, and Territorial Support supports strong health departments—the Nation’s front line of public health defense. The thousands of health departments that are working to provide accessible, timely, quality, and sustainable public health services to protect Americans’ health and safety need tools, resources, and a sustainable, well-trained workforce to work better, faster, and smarter. CDC improves community health outcomes by working with the executive-level of the public health system to provide services tailored to state, tribal, local, and territorial health officials, including targeted communications, consultations, and site visits.

CSTLTS also administers funding for health agency infrastructure and capacity through a suite of flexible cooperative agreements and grants³⁵³ and helps health departments improve their performance and accountability by using quality improvement tools, undertaking community health assessments, implementing community health improvement plans, meeting national standards, and attaining public health accreditation. By providing data on the “health” of the public health system, CDC helps to identify gaps and opportunities and inform programmatic and resource decisions across the nation.

³⁵³ <https://www.cdc.gov/publichealthgateway/partnerships/index.html>.

For example, CDC provided on-the-ground assistance despite travel restrictions during COVID-19 in Puerto Rico, the U.S. Virgin Islands, and in American Samoa, Guam, and Hawaii. CDC staff conducted cyber-tours of PPE storage facilities and virtual meetings to guide contact tracing teams and detail quarantine procedures for arriving flights. In Puerto Rico, CDC staff also provided guidance on vaccination plans, laboratory and epidemiological capacity, response activities, and re-establishing or continuing non-response programmatic activities.

Budget Request

CDC's FY 2022 request of **\$113,570,000** for Public Health Leadership and Support is level with FY 2021 Enacted. CDC will focus on implementation of the highest priority cross-federal government initiatives, such as those for increasing access, transparency, and dissemination of scientific information; improving data science and analytical capabilities; working to increase use of evaluation throughout the agency; and building and improving public health functions and service delivery. Investments in FY 2022 will also support the critical services CDC provides to the nation in the context of the continuing pandemic.

Promoting Health Equity

Given the context of the COVID-19 pandemic, CDC will focus on promoting evidence-based or promising approaches to reduce health disparities and achieve health equity. It will lead national efforts to understand and apply what works to address the social and structural determinants of health and strengthen CDC's impact on promoting health and prevent the leading causes of death and disability among Americans across the lifespan. CDC's framework for health equity will be applied across the agency through technical consultation, collaboration, and innovation. CDC will continue to integrate non-infectious diseases, injuries, birth defects and disabilities, and environmental health issues into science, policies, and programs across CDC and within the broader public health community to build community health security, reduce health disparities, and create better health for all.

CDC will also expand its commitment to fostering diversity, equity, and inclusion in its workforce, where having the right people with science expertise and contextual expertise is required to detect, respond, prevent, and predict effectively. CDC will further develop and implement effective strategies to identify and remove barriers that impede equal employment and advancement opportunities for qualified members of historically under-represented groups, as well as an environment that accommodates, embraces, and ensures the inclusion of persons with disabilities. CDC's Diversity and Inclusion Executive Steering Committee will oversee agency-wide commitments to a work environment and organizational culture that fosters inclusion, fairness, and equity.

Maintaining the CDC's Leadership Pipeline

FY 2022 initiatives will focus on strategic leadership and enhancing coordination among CDC's Centers, Institutes, and Offices to improve the identification and implementation of evidence-based public health policies and interventions that increase engagement with internal and external partners in health equity, infectious and non-infectious disease, public health science and surveillance, and services and implementation science.

CDC will continue its national and global leadership and expertise in preventing and controlling infectious diseases. CDC will scale up strategic investments in COVID-19 response, including public health management and leadership to the U.S. Government's COVID-19 Response function, direct support to health departments and underserved communities, and data modernization. By providing senior leadership and expertise to response efforts in health departments across the nation, CDC will continue to provide training, data for decision-making, and surge capacity to sustain response efforts during this and future emergencies. CDC's leadership will

continue to scale strategic data modernization investments across the agency and in the field that supports lasting, life-saving enhancements that will accelerate the response to the COVID-19 pandemic while strengthening surveillance, science, and decision-making around all public health threats.

CDC will also expand its focus on training and developing the public health leadership pipeline through the Public Health Associate Program (PHAP), National Leadership Academy for the Public's Health, Public Health Improvement Training, and Public Health Law Program. It will also continue to promote upskilling in its workforce and drive innovation, such as through its new data modeling track within CDC's Prevention Effectiveness Fellowship Program that expands capabilities for applied modeling and analytics to translate data into evidence and support public health decision-making at the national, state, and local levels.

Expanding Partnerships and Collaborations

CDC will sustain its activities with partners across the public health system. CDC will continue to strengthen health departments and enhance public health system coordination and collaboration to advance public health priorities. It will support expert convenings, including the Infectious Diseases Board of Scientific Counselors (BSC), which advises on emerging topics such as Acute Flaccid Myelitis, food and waterborne illnesses, vaccinating with confidence, and most recently COVID-19. It will also further build the capacity of Indian Country to identify and mitigate public health threats by managing the CDC/ATSDR Tribal Advisory Committee, connecting tribal nations to CDC programs, providing funding for building and improving tribal health infrastructure, and coordinating tribal consultations to improve American Indian and Alaska Native health. CDC will continue to provide leadership and support for public health strategies, programs, and systems improvements in the 5 US territories and 3 freely associated states, recognizing their unique cultural, political, geographic, and disease-burden needs.

CDC will also build and scale collaborative work within the agency. Efforts will include supporting a workgroup focused on improving public health among people experiencing homelessness and high-risk populations with 235 members and representation from 35 divisions across the agency. It will also convene CDC's first governance board overseeing IT and data investments to embolden innovative, inclusive approaches to technology and data at CDC. These efforts have already saved the agency approximately \$9 million in 2020 and will continue to create enterprise-wide efficiencies in the future.

Agency-wide collaboration will also further quality improvement across infectious disease laboratories, continuing the commitment from all infectious disease center directors to implement an accredited laboratory quality management system, meet Clinical Laboratory Improvement Amendments (CLIA) standards for diagnostic testing, finalizing a cross-laboratory infectious diseases quality manual, documenting the improvements needed for laboratory informatics and overall working with the center laboratory leadership to coordinate as needed. CDC will also prioritize coordination and leadership in ongoing performance monitoring, program planning and improvement, policy analysis, evidence generation, and partnership development across the agency's strategic priorities and current and emerging health issues. CDC's development and use of strategic planning and performance management across its Centers, Institutes, and Offices will provide forums for future collaboration.³⁵⁴

³⁵⁴ <https://www.cdc.gov/program/overview/index.htm>.

Recipient Table: Preventive Health and Health Services Block Grant (PPHF)

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Alabama	\$2,509,291	\$2,509,291	\$2,509,291	\$0
Alaska	\$549,028	\$549,028	\$549,028	\$0
Arizona	\$1,885,538	\$1,885,538	\$1,885,538	\$0
Arkansas	\$1,410,868	\$1,410,868	\$1,410,868	\$0
California	\$10,738,724	\$10,738,724	\$10,738,724	\$0
Colorado	\$1,955,775	\$1,955,775	\$1,955,775	\$0
Connecticut	\$2,293,948	\$2,293,948	\$2,293,948	\$0
Delaware	\$293,028	\$293,028	\$293,028	\$0
Washington, D.C.	\$1,233,590	\$1,233,590	\$1,233,590	\$0
Florida	\$4,698,941	\$4,698,941	\$4,698,941	\$0
Georgia	\$4,888,181	\$4,888,181	\$4,888,181	\$0
Hawaii	\$1,242,288	\$1,242,288	\$1,242,288	\$0
Idaho	\$587,014	\$587,014	\$587,014	\$0
Illinois	\$3,669,860	\$3,669,860	\$3,669,860	\$0
Indiana	\$2,642,271	\$2,642,271	\$2,642,271	\$0
Iowa	\$1,735,326	\$1,735,326	\$1,735,326	\$0
Kansas	\$1,436,250	\$1,436,250	\$1,436,250	\$0
Kentucky	\$2,116,102	\$2,116,102	\$2,116,102	\$0
Louisiana	\$4,614,384	\$4,614,384	\$4,614,384	\$0
Maine	\$1,419,964	\$1,419,964	\$1,419,964	\$0
Maryland	\$2,976,600	\$2,976,600	\$2,976,600	\$0
Massachusetts	\$4,293,198	\$4,293,198	\$4,293,198	\$0
Michigan	\$6,232,395	\$6,232,395	\$6,232,395	\$0
Minnesota	\$4,010,199	\$4,010,199	\$4,010,199	\$0
Mississippi	\$2,305,515	\$2,305,515	\$2,305,515	\$0
Missouri	\$3,945,190	\$3,945,190	\$3,945,190	\$0
Montana	\$1,052,863	\$1,052,863	\$1,052,863	\$0
Nebraska	\$2,604,155	\$2,604,155	\$2,604,155	\$0
Nevada	\$619,660	\$619,660	\$619,660	\$0
New Hampshire	\$2,275,867	\$2,275,867	\$2,275,867	\$0
New Jersey	\$4,557,234	\$4,557,234	\$4,557,234	\$0
New Mexico	\$2,234,567	\$2,234,567	\$2,234,567	\$0
New York	\$10,860,005	\$10,860,005	\$10,860,005	\$0
North Carolina	\$4,342,924	\$4,342,924	\$4,342,924	\$0
North Dakota	\$403,556	\$403,556	\$403,556	\$0
Ohio	\$7,150,754	\$7,150,754	\$7,150,754	\$0
Oklahoma	\$1,477,113	\$1,477,113	\$1,477,113	\$0
Oregon	\$1,131,744	\$1,131,744	\$1,131,744	\$0
Pennsylvania	\$7,534,910	\$7,534,910	\$7,534,910	\$0
Rhode Island	\$750,569	\$750,569	\$750,569	\$0
South Carolina	\$1,943,020	\$1,943,020	\$1,943,020	\$0
South Dakota	\$366,816	\$366,816	\$366,816	\$0
Tennessee	\$2,561,850	\$2,561,850	\$2,561,850	\$0
Texas	\$6,404,449	\$6,404,449	\$6,404,449	\$0
Utah	\$1,529,005	\$1,529,005	\$1,529,005	\$0
Vermont	\$431,805	\$431,805	\$431,805	\$0
Virginia	\$3,214,478	\$3,214,478	\$3,214,478	\$0
Washington	\$1,577,811	\$1,577,811	\$1,577,811	\$0

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
West Virginia	\$1,420,723	\$1,420,723	\$1,420,723	\$0
Wisconsin	\$3,090,044	\$3,090,044	\$3,090,044	\$0
Wyoming	\$360,611	\$360,611	\$360,611	\$0
Tribes				
Kickapoo Tribe	\$47,548	\$47,548	\$47,548	\$0
Santee Sioux	\$47,548	\$47,548	\$47,548	\$0
U.S. Territories and Freely Associated States				
American Samoa	\$84,498	\$84,498	\$84,498	\$0
Guam	\$351,279	\$351,279	\$351,279	\$0
Marshall Islands	\$41,438	\$41,438	\$41,438	\$0
Micronesia	\$101,451	\$101,451	\$101,451	\$0
Northern Mariana Islands	\$63,490	\$63,490	\$63,490	\$0
Puerto Rico	\$2,470,076	\$2,470,076	\$2,470,076	\$0
Republic of Palau	\$33,713	\$33,713	\$33,713	\$0
Virgin Islands	\$277,093	\$277,093	\$277,093	\$0
Subtotal States	\$145,580,001	\$145,580,001	\$145,580,001	\$0
Subtotal Tribes	\$95,096	\$95,096	\$95,096	\$0
Subtotal Territories	\$3,423,038	\$3,423,038	\$3,423,038	\$0
Total Resources	\$149,098,135	\$149,098,135	\$149,098,135	\$0

¹Reflects amount of funding distributed through CDC-RFA-OT20-2002: The Preventive Health and Health Services Block Grant.

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BUILDINGS AND FACILITIES

(dollars in millions)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Budget Authority	\$25.000	\$30.000	\$55.000	+\$25.000
Nonrecurring Expenses Fund (NEF)	\$225.000	\$0	\$0	\$0
Total Request	\$250.000	\$30.000	\$55,000	+\$25,000
-- Buildings and Facilities	\$25.000	\$30.000	\$55.000	+\$25.000
-- Buildings and Facilities - Chamblee Research Support Building (NEF)	\$225.000	\$0	\$0	\$0

Safe, secure, and fully operational laboratories, buildings, and facilities equip CDC with the infrastructure needed to protect Americans from disease threats, respond to evolving public health needs, and rapidly address public health emergencies. COVID-19 and other emergencies require urgent action, and CDC laboratories and facilities need to be ready to respond. CDC’s facilities support the dedicated personnel who work to protect Americans from health threats every day.

Buildings and Facilities funds replace, maintain, and improve existing facilities as well as construct new facilities to meet CDC’s mission. CDC’s building repair and improvement needs are nationwide—covering CDC-owned facilities in seven states and San Juan, Puerto Rico—and the gross square footage of CDC’s assets has nearly doubled since 2000. Older facilities, such as those on the NIOSH Pittsburgh campus, increase operating costs due to inefficiency and strain portfolio-wide resources with a burdensome backlog of maintenance and repair. Aging facilities also cause failing equipment in laboratories, frequent water leaks, and other urgent and costly emergency repairs that hinder CDC’s ability to perform critical laboratory response diagnostics and research.

CDC BUILDINGS AND FACILITIES

BY THE NUMBERS

- **7.1 million**—gross square feet of space supporting CDC’s public health mission.
- **3.1 million**—gross square feet of laboratories.
- **188**—owned assets, including 161 buildings and 27 support structures.
- **70**—facilities (buildings and support structures) over 40 years old.
- **\$3.8 billion**—functional replacement value of CDC buildings and facilities.

Buildings and Facilities Funding History	
Fiscal Year	Dollars (in millions)
2018 Budget Authority	\$270.000
2018 Nonrecurring Expenses Fund ¹	\$240.000
2019	\$30.000
2020	\$25.000
2020 Nonrecurring Expenses Fund ¹	\$225.000
2021 Enacted	\$30.000
2022 President's Budget	\$55.000

¹ Nonrecurring Expenses Fund transfers directed in Appropriations Acts.

CDC continues to identify opportunities for investments in facilities and leased properties that will save money and ensure facilities across the United States are safe and able to meet technological needs to accomplish critical work. CDC operates in several leased spaces in the Atlanta area, and many of these leases will be expiring in the next five years. By consolidating staff from leased space into owned facilities, CDC will reduce operating costs and gain efficiencies in operational services. The FY 2020 Appropriations Act directed \$225,000,000 from the HHS Nonrecurring Expenses Fund (NEF) for a research support building and related campus infrastructure improvements at CDC's Chamblee campus. Once operational, CDC estimates that this new research support building will save \$85 million over the next 30 years and accommodate at least 1,800 staff currently located in leased space.

Budget Request

CDC's FY 2022 request of **\$55,000,000** for Buildings and Facilities is **\$25,000,000** above the FY 2021 Enacted level. This funding supports major renovations to existing buildings, as well as repair and improvements (e.g., laboratory ventilation upgrades, structural repairs, roof replacements, and electrical and mechanical repairs) necessary to restore, maintain, and improve CDC's assets. The increased investment will allow CDC to make significant progress reducing its backlog of maintenance and repairs. The current backlog of maintenance and repair is \$156.2 million.

CDC laboratories and facilities are strongholds for the nation's defense against health and national security threats, and many of these facilities are deteriorating. The FY 2022 request of \$55,000,000 will be used to repair and improve CDC-owned buildings and laboratories and protect these assets through a rigorous preventive maintenance program. This investment is critical to keeping CDC facilities fully functional and prepared to respond to the next disease threat to our nation.

While CDC's scientists continue to respond to urgent public health needs, the laboratories and facilities supporting these activities continue to require improvements and maintenance necessary for CDC to meet its critical mission. CDC prioritizes repair and improvement projects by need and available funding within the following categories:

- Execution of fire and life safety; and mission support projects.
- Replacement of technologically antiquated mechanical and electrical infrastructure.
- Improvement of campus energy and water efficiency in alignment with federal requirements.
- Reduction of the current backlog of maintenance and repair.

Fire, life safety, and emergency projects are considered high-priority, and several high-priority projects are planned for FY 2022. Aging infrastructure in laboratory buildings at all owned locations requires major

mechanical, electrical, and plumbing system replacements. Equipment in these systems, such as built-in laboratory equipment, roofs, chillers, and boilers, will be replaced with the FY 2022 request. Many building support systems and components need to be replaced or repaired, including elevators, foundations, fire alarm systems, and heating, ventilation, and air conditioning systems.

Critical program support projects and facilities maintenance planned in FY 2022 will:

Begin replacement of some components of CDC's High Containment Laboratory Building Automation System (BAS). This will begin critical next steps necessary to keep CDC's High Containment Laboratory operational.

Conduct a study to determine the cost and effectiveness of a water leak detection system for full coverage of high-risk leak probability areas such as mechanical spaces, labs, and freezer areas in Roybal Campus laboratories.

Provide significant exterior and roof repairs to aging Roybal laboratories in Building 17 and Building 18 to address significant safety hazards and deficiencies. This also includes, but not limited to, all exterior vertical walls (seal panel joints), windows and mullions, light diffusers, balconies, walkways, ramps, and handrails.

Perform energy and water audits under the Energy Independence and Security Act of 2007 (EISA 432) Energy and water evaluations must be performed at each covered facility every four years to identify potential energy and water efficiency and conservation measures. EISA requires agencies to report progress toward these requirements. All Atlanta area campuses as well as Fort Collins and San Juan are currently due in this 4-year cycle.

Renovate outdated animal research facilities on the Lawrenceville Campus to maintain for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) certification.

Design a pipe system to carry excess air conditioning condensate from the Environmental Health Lab air handler units through the tunnel to the cooling tower basin at the Chamblee Campus.

Replace security perimeter hydraulic bollards and barrier systems on Chamblee Campus for both entrances. Chamblee's security barrier systems are over 15 years old and repair needs have become significant. A new system would be more cost efficient and will meet new security guidelines.

Perform thorough enterprise-wide assessment of Liquid Nitrogen (LN2) and oxygen (O2) monitoring and other bulk gas systems support laboratories.

Provide permanent remediation to the landfill on the NIOSH Pittsburgh Campus necessary to comply with applicable environmental laws and regulations. The NIOSH landfill was created to dispose of on-site mining materials and construction debris. A preliminary remediation study was conducted and permanent remediation of the landfill is the next step in this large scale project.

Address San Juan Campus building system and infrastructure deficiencies. CDC will remove an inoperable Air Handling Unit from the San Juan Campus administrative building's mezzanine, replace rusted ceiling grid and tiles with a humidity resistant system, and complete other updates to the HVAC and control system. Additionally, due to aging and corroded system components, the chilled water units on the San Juan Campus require significant repair and/or replacement. CDC project will replace outdated variable frequency drives, pumps, motors and an expansion tank that has reached the end of useful life.

- Conduct asbestos abatement to remove vinyl ceramic tile (VCT) asbestos floor tile, mastic, and insulation at the NIOSH Spokane Research Laboratory.
- Renovate the Security Operations Center (SOC) located on the Fort Collins campus. The systems and equipment are past End-of-Life resulting in deterioration of equipment and equipment failures. The Fort Collins SOC provides support for Personal identity verification card operations, personnel security investigations, emergency management, classified document control, campus security, key control, physical security, and security of Select Agents.
- Repair the electrical infrastructure to replace aging medium to high switchgears and generators on the NIOSH Morgantown, West VA campus.

Other Projects of Note

High Containment Continuity Laboratory

The 2018 Consolidated Appropriations Act directed CDC to utilize \$240.0 million from budget authority and directed another \$240.0 million to be transferred from the HHS Nonrecurring Expenses Fund (NEF) to design and construct a high containment laboratory. The High Containment Continuity Laboratory (HCCL) will provide approximately 95,000 gross square feet of space for research on smallpox, Ebola, Marburg virus, influenza, and other emerging viruses that threaten the nation's public health security. Additionally, the HCCL will contain state-of-the art biosafety features, including pathogen containment through high-efficiency HEPA filters and advanced security to restrict access to labs and support spaces.

CDC announced a pre-solicitation for design services and pre-construction services in the summer of 2018 and awarded the design services and construction management pre-construction services contracts in summer 2019. Design will be complete Spring 2021, construction is scheduled to begin in Summer 2021 and will be completed in 2024, followed by commissioning of the laboratory in 2026.

Cincinnati

CDC, working with GSA, identified a potential site for a new facility to consolidate NIOSH's Cincinnati Research Facilities into one central location. This project is supported with \$129 million from the NEF. The Environmental Impact Statement assessment and associated Record of Decision have been completed. CDC, working with GSA, is in the process of purchasing the site for the facility. Concurrent with the site acquisition process, CDC is currently in the design phase and anticipates starting construction in early 2022. The facility is planned to be operational in 2024.

Underground Mining Research Facility

As directed in the FY 2021 Consolidated Appropriations Act, CDC is proceeding with acquiring a replacement underground mining research facility to support mining research capabilities no longer available at the former NIOSH Lake Lynn facility. CDC holds prior year Buildings and Facilities funds for the purchase of the replacement site. CDC has identified a candidate replacement site in West Virginia and negotiated an acceptable purchase agreement. Purchase of the site is pending the completion of the ongoing Environment Impact Statement analysis to determine that no areas of concern exist on the proposed site that cannot be successfully mitigated. If the Final EIS and Record of Decision result in a recommendation that the purchase of the property and development of the research facility are appropriate, CDC will purchase the site as early as Fall 2021. Design and construction of the facility is anticipated to take approximately three years.

Chamblee Campus Expansion

In FY 2020, CDC received \$225.0 million from the NEF to construct a new research support building and support infrastructure on CDC's Chamblee campus. The new facility will consolidate at least 1,600 staff from leased space into a more collaborative environment on a CDC-owned campus. The new building will maximize space utilization rates, minimize long-term operating and maintenance costs, and provide opportunities for increased operational efficiencies. CDC began design of the project in 2020, will begin construction in Fall 2021, and expects to complete the facility in 2024.

NIOSH Pittsburgh Campus

Aging buildings on the National Institute of Occupational Safety and Health (NIOSH) campus in Pittsburgh, PA have frequent infrastructure and utility repair needs which add to CDC's backlog of repairs. In FY 2021, CDC received \$14.0 million from the NEF to renovate the National Personal Protective Technology Laboratory (NPPTL) at the Pittsburgh Campus. The renovated laboratory space will support NPPTL's Human Performance and Physiology Research Branch Laboratories and the NPPTL respirator certification program as well as needed laboratory support.

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NONRECURRING EXPENSES FUND (NEF)

(dollars in thousands)

Centers for Disease Control	FY 2020 ²	FY 2021 ^{3,4}	FY 2022 ⁵
Notification¹	\$225,000	14,000	TBD

¹ Pursuant to Section 223 of Division G of the Consolidated Appropriation Act, 2008, notification is required of planned use

² Funds directed by P.L. 116-94.

³ Notification submitted to the Committees on Appropriations in the House of Representatives and the Senate on October 22, 2020.

⁴ The projects described below are the current list of approved projects through FY 2021.

⁵ HHS has not yet notified for FY 2022.

Authorizing Legislation:

Authorization.....Section 223 of Division G of the Consolidated Appropriations Act, 2008

Allocation Method.....Direct Federal, Competitive Contract

Program Description and Accomplishments

The Nonrecurring Expenses Fund (NEF) permits HHS to transfer unobligated balances of expired discretionary funds from FY 2008 and subsequent years into the NEF account. Congress authorized use of the funds for capital acquisitions necessary for the operation of the Department, specifically information technology (IT) and facilities infrastructure acquisitions.

The projects described below represent those that have been approved as of May 2021.

NIOSH Pittsburgh Campus

Aging buildings on the National Institute of Occupational Safety and Health (NIOSH) campus in Pittsburgh, PA have frequent infrastructure and utility repair needs, which add to CDC’s backlog of repairs. In FY 2021, CDC received \$14.0 million from the NEF to renovate the National Personal Protective Technology Laboratory (NPPTL) at the Pittsburgh Campus. The renovated laboratory space will support NPPTL’s Human Performance and Physiology Research Branch Laboratories and the NPPTL respirator certification program as well as needed laboratory support. The research conducted at NPPTL provides ongoing protection for America’s workers, and renovation of the facilities will enable more efficient and effective research.

Chamblee Campus Expansion

In FY 2020, CDC received \$225.0 million from the NEF as a direct allocation from Congress to construct a new research support building and infrastructure on CDC’s Chamblee campus. The new facility will consolidate more than 1,600 staff from leased space into a newly constructed office building with approximately 337,000 gross sq. ft. The building will maximize space utilization rates, minimize long-term operating and maintenance costs, and provide opportunities for increased operational efficiencies. CDC began design on the project in 2020, construction is scheduled to begin in Fall 2021, and CDC expects to complete the facility in 2024.

High Containment Continuity Laboratory

The 2018 Consolidated Appropriations Act directed CDC to utilize \$240.0 million from budget authority and directed another \$240.0 million to be transferred from the NEF to design and construct a high containment laboratory. The new High Containment Continuity Laboratory (HCCL) will enable CDC to continue to protect,

defend, and respond to infectious disease threats involving high consequence pathogens. Safe, modern containment facilities help us to protect Americans from the deadliest disease threats and emerging pathogens. The facility will provide approximately 95,000 gross square feet of space for research on COVID-19, smallpox, Ebola, Marburg virus, influenza, and other emerging viruses, work that is vital to the nation's public health security.

CDC announced a pre-solicitation for design services and pre-construction services in 2018 and awarded the services contracts in fall 2019. Design of the HCCL is currently underway with an anticipated completion in spring 2021. Construction of the HCCL is scheduled to begin in summer 2021, with an estimated completion date of 2024. CDC anticipates that commissioning of the laboratory will be completed in 2026.

NIOSH Cincinnati Land Development

CDC will utilize a total of \$129.0 million from the NEF for a new facility in Cincinnati, Ohio providing approximately 235,000 gross square feet of consolidated office, laboratory, and support space for occupational safety and health research and activities. Consolidating research facilities into one central location will improve scientific collaboration, provide adequate research facilities for scientific programs, and reduce the recurring operational costs associated with two independent campuses. CDC, working with GSA, is in the process of purchasing the site for the facility. Concurrent with the site acquisition process, CDC is currently in the design phase and anticipates starting construction in early 2022. The facility is planned to be operational in 2024.

Critical IT Infrastructure

Investing in IT Infrastructure and modernization is foundational to CDC's core capability to develop and deploy world-class data and analytics. CDC received \$25.0 million from the NEF in FY 2019 to replace critical core infrastructure, including network equipment to ensure compliance with Federal standards. CDC invested in infrastructure lifecycle upgrades including servers and storage, networking and end-of-life end user devices, and business system modernization upgrades that enable optimal service delivery across the enterprise.

WORKING CAPITAL FUND CDC FY 2022 WORKING CAPITAL FUND TABLE¹

(dollars in thousands)	FY 2021 Estimate	FY 2022 Estimate
CDC Programs		
Immunization and Respiratory Diseases	\$62,220	TBD
HIV/AIDS, Viral Hepatitis, STI and TB Prevention	\$57,328	TBD
Emerging and Zoonotic Infectious Diseases	\$91,176	TBD
Chronic Disease Prevention and Health Promotion	\$50,126	TBD
Birth Defects, Developmental Disabilities, Disability and Health	\$11,089	TBD
Environmental Health	\$27,412	TBD
Injury Prevention and Control	\$21,810	TBD
Public Health Scientific Services	\$68,368	TBD
Occupational Safety and Health	\$39,038	TBD
Global Health	\$39,931	TBD
Public Health Preparedness and Response	\$41,313	TBD
CDC Wide Activities	\$22,339	TBD
CDC Program Total	\$532,149	TBD
Other CDC Funding Sources		
<i>Agency for Toxic Substances and Disease Registry</i>	\$11,108	TBD
<i>Energy Employees Occupational Illness Compensation Program Act (EEOICPA)</i>	\$3,003	TBD
<i>Vaccines for Children</i>	\$31,130	TBD
<i>World Trade Center</i>	\$12,484	TBD
<i>PEPFAR</i>	\$63,215	TBD
<i>Other Reimbursable Income</i>	\$23,779	TBD
Other CDC Programs Contributions Total	\$144,720	TBD
Total CDC Programs Contributions	\$676,869	TBD

¹ Estimates are based on the WCF Governance Board approved operating budget of \$ \$676,868,819 for FY 2021. The estimate is distributed across budget lines on a pro-rata basis until consumption data is collected and bills are issued. These estimates do not include: Specialized Service Agreements, adjustments for increases or decreases to program activities, or supplemental appropriations (e.g., COVID-19 and GHSA), which will result in a change to the consumption/billing across budget lines.

The Working Capital Fund (WCF) is a revolving fund with extended availability and serves as the funding mechanism for centralized business services support across CDC. Business service offices provide services to CDC programs and the WCF bills programs for the services consumed based on pre-established rates. Services include office and other space management, information technology, financial transactions, and security services.

In FY 2014, CDC base operations funding (Business Services Support) was transferred to all program budget lines to cover costs to establish and maintain the Working Capital Fund. The WCF helps maintain CDC's core operations to achieve the agency's public health mission.

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REIMBURSEMENTS AND TRUST FUNDS

(dollars in millions)	FY 2019 Actual	FY 2020 Actual	FY 2021 Estimate	FY 2022 Estimate
Reimbursements and Trust Funds	\$258.000	\$199.000	\$668.000	\$668.000

Authorizing Legislation: PHSA §§ 214, 301, 306(b)(4), 311, 353; Consolidated Appropriations Act, 2016 (P.L. 114-113)

CDC's reimbursable activities provide scientific and programmatic expertise to other agencies and organizations. CDC has a long history of partnering with other federal agencies in the shared interest of improving public health and prevention programs. Examples of these activities include:

- CDC will continue its longstanding agreements with other agencies of the Public Health Service, HHS, and others associated with CDC's health statistics studies. CDC will continue to provide scientific and programmatic expertise in areas such as genetic diseases, laboratory tests, investigations, development of worker safety guidance, and training and model screening programs.
- CDC will continue the association between the Epidemiology Program at Department of Veterans Affairs (VA) and the National Center for Health Statistics (NCHS). NCHS will perform searches of the National Death Index (NDI) for VA in research and surveillance studies. The Epidemiology Program conducts research and surveillance studies on the health of veterans to understand the causes and patterns of their health and illnesses. The data and research findings from these studies help VA health professionals improve healthcare practices for veterans. The findings also help VA leadership and Congress improve health policies for veterans.
- CDC will continue to work with the U.S. Agency on International Development (USAID) on various projects including the President's Malaria Initiative. PMI was launched in 2005 with the goal of reducing malaria-related mortality by 50% across 15 high-burden countries in sub-Saharan Africa. CDC contributes scientific expertise, including on the focus interventions of insecticide-treated mosquito nests (ITNs), indoor residual spraying (IRS), accurate diagnosis and treatment with artemisine-based combinations therapies (ACTs), and intermittent preventive treatment of pregnant women (IPTp). To date, excluding the five new PMI countries announced in 2017, all 19 PMI focus countries in Africa have data from paired nationwide surveys and have documented declines in all-cause mortality rates among children under five.
- In addition to reimbursable agreements and user fees, CDC receives funds from Cooperative Research and Development Agreements (CRADAs) to enhance and facilitate collaboration between the agency's laboratories and various partners. CDC provides research personnel, laboratory facilities, materials, equipment, supplies, intellectual property, and other in-kind contributions, and uses the income from CRADAs to continue to improve programs.

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PERFORMANCE BY ACTIVITY

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IMMUNIZATION AND RESPIRATORY DISEASES

Immunization Program and Program Implementation and Accountability

Performance Measure for Long Term Objective: Ensure that children and adolescents are appropriately vaccinated

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
1.2.1c Achieve and sustain immunization coverage in children 19 to 35 months of age for one dose of MMR vaccine (Intermediate Outcome)	FY 2019: 91% Target: 90% (Target Exceeded)	90%	90%	Maintain
1.2.1h Achieve and sustain immunization coverage of at least 90% in children 19-35 months of age for at least 4 doses of pneumococcal conjugate vaccine (Intermediate Outcome)	FY 2019: 82% Target: 90% (Target Not Met)	90%	90%	Maintain
1.2.1i Achieve and sustain immunization coverage of at least 80% in children 19- to 35-months of age for 2-3 doses of rotavirus (Intermediate Outcome)	FY 2019: 76% Target: 78% (Target Not Met but Improved)	80%	80%	Maintain
1.2.2a Achieve and sustain immunization coverage of at least 80% in adolescents 13 to 15 years of age for 1 dose of Tdap (tetanus and diphtheria toxoids and acellular pertussis) (Intermediate Outcome)	FY 2019: 91% Target: 90% (Target Exceeded)	90%	90%	Maintain
1.2.2b Achieve and sustain immunization coverage of at least 80% in adolescents 13 to 15 years of age for 1 dose of meningococcal conjugate vaccine (MenACWY) (Intermediate Outcome)	FY 2019: 89% Target: 87% (Target Exceeded)	87%	87%	Maintain
1.C Number of states (including the District of Columbia) achieving 65% coverage for 1 birth dose of hepatitis B vaccine (19–35 months of age) (Output)	FY 2019: 49 Target: 51 (Target Not Met but Improved)	51	51	Maintain
1.D Number of states (including the District of Columbia) achieving 30% coverage for influenza vaccine (6–23 months of age) (Output)	FY 2019: 49 Target: 51 (Target Not Met)	51	51	Maintain

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
1.L Number of states (including the District of Columbia) achieving 45% coverage for up-to-date with the full series of human papillomavirus vaccine (13-17 years of age) (Output)	FY 2019: 44 Target: 51 (Target Not Met)	51	51	Maintain
1.I Number of states (including the District of Columbia) achieving 80% coverage for ≥ 1 dose of Tdap vaccine (13-17 years of age) (Output)	FY 2019: 51 Target: 51 (Target Met)	51	51	Maintain
1.J Number of states (including the District of Columbia) achieving 80% coverage for up-to-date with ≥ 1 dose of meningococcal conjugate vaccine (13-17 years of age) (Output)	FY 2019: 45 Target: 51 (Target Not Met)	51	51	Maintain

Performance Measures for Long Term Objective: Increase the proportion of adults who are vaccinated annually against influenza and ever vaccinated against pneumococcal disease

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
1.3.1b Increase the percentage of adults aged 65 and older who are vaccinated with at least one dose of pneumococcal vaccine (Intermediate Outcome)	FY 2018: 69% Target: 85% (Target Not Met)	85%	85%	Maintain
1.3.2c Increase the percentage of non-institutionalized adults ages 19 to 64 at increased risk of pneumococcal disease who are vaccinated with at least one dose of pneumococcal vaccine (Intermediate Outcome)	FY 2019: 23% Target: 28% (Target Not Met)	29%	29%	Maintain
1.3.3a Increase the percentage of adults aged 18 years and older who are vaccinated annually against seasonal influenza (Intermediate Outcome)	FY 2019: 48% Target: 66% (Target Not Met but Improved)	70%	70%	Maintain

Performance Trends: Immunization continues to be one of the most effective public health interventions. CDC supports the implementation of state-based immunization programs making vaccines available to children, adolescents, and adults. CDC estimates that, among children born during 1994–2018, vaccination will prevent an estimated 419 million illnesses, 26.8 million hospitalizations, and 936,000 early deaths over the course of their lifetimes, at a net savings of \$406 billion in direct costs and \$1.88 trillion in total societal costs³⁵⁵.

³⁵⁵ Benefits from Immunization during the Vaccines for Children Program Era – United States, 1994–2013. MMWR, 25 April 2014.

CDC achieved levels near or above national (Healthy People 2020) targets for most of the routinely recommended childhood vaccinations. Since FY 2010, measles, mumps, and rubella (MMR) vaccinations exceeded 90% coverage rates (Measure 1.2.1c). Rotavirus vaccine coverage among children increased by 16 percentage points from 59% in FY 2010 to 76% in FY 2019 an improvement over FY 2018 results (Measure 1.2.1i). Four dose coverage of pneumococcal conjugate vaccine (PCV13) was 82% (Measure 1.2.1h) in FY 2019, remaining about the same since FY 2010 (ranging from 82%-84%); however, coverage with three doses PCV13 has exceeded 90% since 2010. CDC has demonstrated an 87% decline in PCV13-type pneumococcal disease among children less than five years old in the U.S. Although CDC did not meet targeted coverage rates for PCV, strategies to improve the fourth dose of PCV coverage are in place and are similar to those used to improve the uptake of other vaccines, and CDC expects similar gains in the future.

Starting in March 2020 with the onset of the COVID-19 pandemic, CDC observed notable declines in pediatric outpatient visits and routine childhood vaccination³⁵⁶. Declines were also observed in the number of measles-containing vaccine doses administered in a study of eight U.S. health care organizations serving publicly and privately insured patients. For example, in Michigan, more than 20% fewer vaccine doses were administered to children less than 18 years of age in May 2020, compared to a similar time period in 2018-2019³⁵⁷, leaving children and communities at risk for preventable disease and outbreaks. Some recovery has been observed in vaccine³⁵⁸, however, a deficit still exists at the time of this writing. In August 2020, CDC issued a call to action to increase vaccinations in children and is working with partners to address catch up vaccinations in children.

At the end of 2016, CDC's Advisory Committee on Immunization Practices (ACIP) revised the HPV vaccination recommendation – adolescents starting the vaccine series before age 15 years should receive two doses separated by 6–12 months, all others should receive three doses. We anticipate that the change in recommendation will make it easier for clinicians to provide quality care and protect their patients from cancers caused by HPV infections. In FY 2019, amongst 13-17 year olds, 44 states, including D.C., achieved 45% up-to-date coverage with the HPV vaccine (Measure 1.L). Similarly, in FY 2019, 45 states achieved 80% coverage for the meningococcal conjugate vaccine and 51 jurisdictions achieved 80% coverage for the Tdap vaccine (Measures 1.LI, 1.J).

CDC met the target for tetanus, diphtheria, and acellular pertussis (Tdap) and meningococcal conjugate vaccine in FY 2019. Tdap vaccine coverage increased from 74% in FY 2010 to 91% in FY 2019 (Measure 1.2.2a). Meningococcal conjugate vaccine (MCV4) coverage increased from 65% in FY 2010 to 89% in FY 2019, which exceeded the target and is an increase over the FY 2018 result (Measure 1.2.2b). Most states achieved target coverage rates for select child and adolescent vaccinations (Measures 1.C-1.D) in FY 2019, with little to no change from states' FY 2018 vaccination coverage rates. Strategies to improve vaccination coverage include provider assessment and feedback, use of reminder notifications, immunization information systems, and regular assessment of coverage levels in the National Immunization Survey.

During the past decade, vaccination coverage levels among older adults increased slightly as CDC implemented national strategies and partnered with state and local public health departments to promote adult immunization among healthcare providers and state and local governments. Pneumococcal vaccination for adults 65 and older has stayed within the range of 60% to 69% over the past five years and FY 2017 and FY 2018 results improved over FY 2016 by two percentage points (69% vs. 67%) (Measure 1.3.1b). In 2014, ACIP recommended that adults receive two types of pneumococcal vaccine: one dose of PCV13 followed by a dose of PPSV23. Surveys assessing vaccination coverage are currently unable to determine which pneumococcal vaccine has been received; therefore,

³⁵⁶ Santoli JM, Lindley MC, DeSilva MB, et al. Effects of the COVID-19 Pandemic on Routine Pediatric Vaccine Ordering and Administration — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:591–593. DOI: <http://dx.doi.org/10.15585/mmwr.mm6919e2>.

³⁵⁷ Bramer CA, Kimmins LM, Swanson R, et al. Decline in Child Vaccination Coverage During the COVID-19 Pandemic — Michigan Care Improvement Registry, May 2016–May 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:630–631. DOI: <http://dx.doi.org/10.15585/mmwr.mm6920e1>.

³⁵⁸ Langdon-Embry M, Papadouka V, Cheng I, Almashhadani M, Ternier A, Zucker JR. Notes from the Field: Rebound in Routine Childhood Vaccine Administration Following Decline During the COVID-19 Pandemic — New York City, March 1–June 27, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:999–1001. DOI: <http://dx.doi.org/10.15585/mmwr.mm6930a3>.

CDC is only able to assess receipt of at least one dose. CDC did not meet the FY 2018 target for pneumococcal vaccination coverage among noninstitutionalized adults at increased risk for pneumococcal disease; coverage remained below 25% for the past four years (range 23-24.5%) (Measure 1.3.2c). Measure 1.3.3a reflects the universal influenza vaccination recommendation and aligns with ACIP's recommendation (as of 2010) for the seasonal influenza vaccine. Seasonal influenza vaccination rates for adults ages 18 years old and over increased slightly from 42% in FY 2015 to 48% in FY 2019. Interpretation of these results should take into account limitations of the survey, including reliance on self-report of vaccination status. Flu vaccination coverage among adults remains at about 4 in 10 adults reporting receipt of a flu vaccination.

CDC's efforts to improve adult vaccination coverage rates include:

- Increasing patient and provider education to improve demand and implement system changes in practitioner office settings to reduce missed opportunities for vaccinations.
- Funding state and local health departments to implement the Standards for Adult Immunization Practice in large health care systems, community health centers, pharmacies, and other settings.
- Partnering with professional organizations (e.g., American Pharmacists Association, American College of Physicians, American Academy of Family Physicians, American College of Obstetricians and Gynecologists) and other organizations (e.g., National Association of Chain Drug Stores, National Association of Community Health Centers, American Immunization Registry Association) to develop and implement strategies to improve adult immunization at provider, practice, and systems levels.
- Enhancing evidence-based communication campaigns to increase public awareness about adult vaccines and recommendations. CDC routinely conducts literature reviews and surveys of the general public and healthcare providers to provide a deeper understanding of the target audiences for development of adult immunization communication messages and campaigns.
- Partnering with the National Adult and Influenza Immunization Summit, a national coalition of partners and stakeholders represented by clinicians, public health, industry, government, and other entities with the common goal to promote immunization for adults.
- Expanding the reach of vaccination programs including new venues such as pharmacies and other retail clinics. CDC has existing partnerships to implement adult immunization practice standards, HPV vaccination, and pandemic vaccine program planning efforts to expand access to pandemic vaccine. As of 2016-2017 influenza season, nearly one in four adults who got an influenza vaccine were vaccinated in a pharmacy or retail setting.
- Designing and funding investigations into the factors associated with disparities in adult vaccination among racial and ethnic minority populations and projects designed to expand the evidence base for interventions to increase vaccination among adults with chronic medical conditions and underserved populations.
- Engaging 18 subject matter experts with deep expertise in addressing health disparities and representing a broad array of disciplines to provide input on the development of concrete, scalable, and sustainable interventions that may begin to reduce disparities in adult vaccination in the African American community.
- Purchasing 9.3 million additional doses directly from vaccine manufacturers to help uninsured and underinsured adult Americans get their flu vaccines, especially those at higher risk.
- Collaborating with numerous existing and new partners to expand flu vaccine coverage, with specific efforts to address racial and ethnic disparities for the 2020 – 2021 influenza season. For example, CDC is working with the National Association for Community Health Centers to implement evidence-based strategies to increase adult vaccination coverage among underserved priority populations. CDC has developed new partnerships to promote flu vaccination in high-risk populations (cardiovascular, diabetes, chronic lung conditions, etc.) and those in congregate settings (i.e., long-term care facilities, homeless shelters, and prisons). The work to promote flu vaccination will help pave the way for COVID-19 vaccination in these same at-risk groups.

Performance Measures for Long Term Objective: Improve vaccination safety and effectiveness

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
1.5.2 Increase the number of associations between vaccines and adverse health events evaluated to ensure the safety of vaccines used in the U.S. (Outcome)	FY 2019: 1,118 pairs Target: 853 pairs (Target Exceeded)	1,100	1,200	+100
1.H Percentage of Vaccine Events Reporting System (VAERS) reports received electronically (Output)	FY 2020: 91% Target: 70% (Target Exceeded)	85%	93%	+8

Performance Trends: CDC is the nation’s leading public health agency responsible for providing a safe, effective supply of all licensed vaccines approved for use in the United States. CDC conducts post-licensure vaccine safety monitoring on vaccines licensed and recommend for routine use in the public by ACIP. CDC uses the [Vaccine Safety Datalink](#)³⁵⁹ (VSD) Network and the [Vaccine Adverse Event Reporting System](#)³⁶⁰ (VAERS) to monitor vaccine safety. VAERS is a joint effort with the U.S. Food and Drug Administration (FDA). Together, these surveillance systems evaluate vaccine risks, monitoring any known and potential adverse events for new and existing vaccines, and rapidly detecting unusual patterns of vaccine adverse events. In addition, VSD works with multiple integrated health systems to conduct vaccine safety pair studies to further assess whether any adverse health events are actually caused by vaccines. For example, recent CDC VSD studies continue to conclude that administering vaccines such as Tdap and influenza, the only two vaccines that women can receive while pregnant, are safe and do not increase the risks of premature births, structural birth defects, infant hospitalization or death, and/or severe vaccine reactions in pregnant women.

In FY 2019, there were 160 additional vaccine-adverse event pair studies conducted through VSD totaling 1,118 pair studies conducted to-date. This exceeds CDC’s 2019-2021 targets (Measure 1.5.2) and more than doubles the total vaccine-adverse event pair studies conducted since FY 2015. Data from VSD and other CDC studies show that the current U.S. vaccine supply is the safest in history.

Electronic submission of VAERS vaccine safety reports helps to improve program decision-making by increasing the timeliness, quality, and quantity of these vaccine safety reports and enhances CDC’s ability to quickly evaluate and disseminate safety information to healthcare providers and consumers. For example, VAERS reporting helped identify an issue related to vaccine administering errors for certain vaccines. Failure to administer vaccines correctly could leave vaccine recipients at risk for preventable diseases (e.g., pertussis and meningococcus disease) and other adverse health events. CDC continues to use this data to raise awareness to clinicians on proper methods for administering and preparing specific vaccines to prevent potential adverse events and health risks.

At this time, approximately 91% of all VAERS reports were submitted electronically in FY 2020, which exceeds 2020 and 2021 targets (Measure 1.H). This means that more than 9 out of every 10 reports were submitted electronically. CDC and FDA continue to implement these information technology enhancements to further increase electronic reporting in VAERS. Improvements include updates to the VAERS reporting interface to facilitate electronic reporting and additional revisions to the VAERS form for more direct electronic reporting. With the new COVID-19 vaccines currently approved for use under FDA’s Emergency Use Authorization, CDC and FDA have also scaled up VAERS for enhanced COVID-19 safety surveillance. Overall, CDC and FDA expect an increase in electronic reporting to VAERS going forward.

³⁵⁹ <http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vsd/index.html>.

³⁶⁰ <http://www.cdc.gov/vaccinesafety/ensuringsafety/monitoring/vaers/index.html>.

Influenza Planning and Response

Performance Measures for Long Term Objective: Protect Americans from infectious diseases – Influenza

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
1.M Number of virus specimens received and fully characterized using deep sequencing from global National Influenza Centers for use in determining vaccine strain selection annually (Output)	FY 2020: 4,617 Target: 4,500 (Target Exceeded)	4,500	4,500	Maintain
1.P Percentage of influenza partner countries reporting data routinely into WHO FluNet (Output)	FY 2020: 59% Target: 90% (Target Not Met)	90%	90%	Maintain
1.Q The number of full and partial state/territorial/local health department laboratorians and/or influenza coordinators trained and funded through Epidemiology and Laboratory Capacity (ELC) grant (Output)	FY 2020: 57 Target: 57 (Target Met)	57	57	Maintain
1.R Increase the percentage of influenza partner countries with a respiratory disease surveillance system that demonstrates qualitative improvements by meeting two quality indicators (Output)	FY 2020: 50% Target: 58% (Target Not Met)	70%	70%	Maintain

Performance Trends: As a World Health Organization (WHO) Collaborating Center for Influenza, CDC enhances global capacity to monitor influenza viruses and inform vaccine policy and treatment recommendations.

Domestic Surveillance

CDC enhances state and local capacity to gather influenza epidemiology and laboratory data for systematic and accurate surveillance of seasonal and novel influenza viruses by providing training and resources to its grantees. Assisting states, territories, and local health departments to staff laboratorians or influenza coordinators directly aligns with CDC’s goal of enhancing and maintaining sustainable domestic influenza surveillance systems that operate year-round. The support for state/local public health capacity is paramount to the success of domestic surveillance for both seasonal and pandemic influenza preparedness. In FY 2020, there were 57 jurisdictions with full and/or partially funded state, territorial, or local laboratorians or influenza coordinators. This training and support also provided surveillance systems and a trained workforce that were able to be immediately repurposed to respond to the COVID-19 pandemic (Measure 1.Q).

During the FY 2020 influenza season, CDC received and characterized 4,617 virus specimens using next generation sequencing (NGS) from the global National Influenza Centers for use in vaccine strain selection (Measure 1.M). CDC has completed its goal of fully converting to NGS for virus genome characterization. CDC has worked extensively with its state and local partners to determine an appropriate representative sample of virus specimens to fully characterize. This process is called “right-sizing” and is a significant program performance enhancement, aimed at achieving more targeted results efficiently and streamlining resources. A targeted range of 4,000-7,000 viruses fully characterized using NGS is appropriate for annual influenza epidemics. This number will rise and fall annually, depending upon the incidence of disease and severity of each influenza flu season.

Global Surveillance

CDC strengthens global health security by equipping partner nations' capacity to improve and sustain influenza detection and response capabilities through timely reporting into their respective influenza surveillance systems and the submission of influenza samples to WHO FluNet. CDC's efforts to strengthen international influenza epidemiological and virological surveillance and pandemic preparedness have resulted in an increase in the number of CDC-funded countries reporting to WHO FluNet from 40% in FY 2005 to 91% in FY 2018 and 80% in FY 2019. In FY 2020 59% of countries routinely reported to FluNet; nine countries reported for fewer weeks than the previous year. We believe this decline in reporting is associated with a shift in testing priorities due to the emergence of the SARS-CoV-2 virus in the second quarter of FY 2020. Global shortages in laboratory reagents and materials led to reduced testing capacity, exacerbated by supply chain interruptions and border closures. While influenza reporting to the global system declined in 2020, CDC-funded countries leveraged influenza surveillance staff and infrastructure for national COVID-19 response activities, and the WHO FluNet platform was expanded to include COVID-19 reporting (Measure 1.P).

CDC, along with the World Health Organization, recognizes the importance of collecting weekly data from persons with influenza-like illness or severe acute respiratory infection to characterize circulating influenza viruses. In FY 2020, 50% of Influenza Division partner countries met two quality indicators for demonstrating qualitative improvements in surveillance. We believe this decline from FY 2019 performance (58%) can also be attributed to the shift in surveillance and testing priorities due to the emergence of the SARS-CoV-2 virus; four percent fewer partners reported the data for this measure due to competing COVID-19 response activities (Measure 1.R). CDC is working with our partner countries to understand their challenges and expects the influenza surveillance numbers to stabilize in 2021.

HIV/AIDS, VIRAL HEPATITIS, SEXUALLY TRANSMITTED INFECTIONS, AND TUBERCULOSIS

Domestic HIV/AIDS Prevention and Research

National Level Performance Measures and CDC Contextual Indicators for Long Term Objective: Reduce new HIV infections¹

Contextual Indicators ¹	Most Recent Result	FY 2025 Target
2.1.1 Reduce the number of new HIV diagnoses by 75%	FY 2018: 37,428	9,588
2.1.3 Increase the percentage of people with HIV who know their serostatus to 95% (Outcome)	FY 2018: 86.2%	95%
2.1.9 Reduce the number of new HIV infections by 75%	FY 2018: 36,400	9,300
2.1.10 Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 95%	FY 2018: 64.7%	95%
2.2.8 Increase the number of persons prescribed PrEP among those who have indications for PrEP (increase PrEP coverage)	FY 2018: 18.2%	50%

¹ Measures reflect the new National HIV/AIDS Strategy and five of the six Ending the HIV Epidemic measures.

Measure	Most Recent Result and Target ¹	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
2.1.7 Increase the proportion of adolescents (grades 9-12) who abstain from sexual intercourse or use condoms if currently sexually active ¹ (Outcome)	FY 2019: 87.7% Target: 87.5% (Target Exceeded)	87.5%	N/A	N/A

¹ Targets and results reported biennially.

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
2.2.4 Increase the number of states that report all CD4 and viral load values for HIV surveillance purposes (Output)	FY 2018: 46 ¹ Target: 45 ² (Target Exceeded)	51	52 ³	+1
2.2.9 Increase the percentage of all persons with newly diagnosed HIV infection in CDC-funded testing sites who are linked to	FY 2019: 71% (Baseline)	85%	85%	Maintain

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
HIV medical care in ≤ 30 days after HIV diagnosis in order to assist national efforts to achieve viral suppression (outcome)				
2.2.10 Increase the percentage of all persons with newly diagnosed HIV infection in CDC-funded testing sites who were interviewed for partner services (outcome)	FY 2019: 81% (Baseline)	85%	85%	Maintain

¹45 states plus Washington, D.C.

²44 states plus Washington, D.C.

³50 states plus Washington, D.C., and Puerto Rico

Performance Trends: As the number of persons with HIV increases due to better, life-prolonging treatments, so does the need for CDC prevention activities. The estimated number of people with undiagnosed and diagnosed HIV in the United States is 1.2 million with an estimated 36,400 new HIV infections in 2018. The longstanding National HIV/AIDS Strategy (NHAS) built the foundation for a coordinated approach to ending HIV. The NHAS identifies a set of priorities and strategic action steps tied to measurable outcomes for moving the nation forward in addressing the domestic HIV epidemic. The strategies and outcomes outlined by the NHAS have informed the federal initiative, Ending the HIV Epidemic: A Plan for America (EHE), which aims to reduce new infections by 75% in the next five years and by 90% in the next ten years. The EHE initiative also identified six corresponding HIV indicators to help quantify progress being made towards EHE goals: incidence, knowledge of status, diagnoses, linkage to HIV medical care, viral suppression, and PrEP coverage (2.1.1, 2.1.3, 2.1.9, 2.1.10, 2.2.8, 2.2.9). These indicators use 2017 baseline data. While the COVID-19 pandemic has disrupted public health efforts to address HIV prevention (e.g., reductions in HIV testing), CDC will continue adapting HIV prevention services to ensure they are available to Americans at highest risk for HIV.

CDC monitors HIV through the National HIV Surveillance System³⁶¹ using the data to direct prevention efforts and provide researchers, policymakers, and the public with a timely understanding of HIV trends in the U.S. Reducing the number of new HIV infections is a shared national and CDC priority. During 2014-2018, new HIV infections remained stable. Incidence remained stable from 2014 (38,000 infections) to 2018 (36,400 infections) (Contextual Indicator (CI) 2.1.9). The percentage of persons living with diagnosed HIV infection at year-end 2018, compared with 2010, increased from 82% to 86% in the United States³⁶² (CI 2.1.3).

In 2018, there were 37,428 new HIV diagnoses in the United States, an improvement from 2017 in reducing the number of new diagnoses (CI 2.1.1). CDC's analysis of HIV diagnoses data from 2014 to 2018 reveals that diagnoses continue to be highest among Black/African American persons compared to other racial/ethnic groups and higher

³⁶¹With more than 80 percent of diagnosed cases reported, HIV and AIDS case surveillance data meet high standards for completeness of reporting.

³⁶²Centers for Disease Control and Prevention. Estimated HIV incidence and prevalence in the United States, 2014–2018. HIV Surveillance Supplemental Report 2020;25(No. 1). <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2020.

Centers for Disease Control and Prevention. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas, 2018. HIV Surveillance Supplemental Report 2020;25(No. 2). <http://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>. Published May 2020.

in the South compared to other regions. Diagnoses among persons aged 25-34 years, as well as American Indian/Alaskan Native and Asian persons, increased in the same time period. Diagnoses have declined among men and women. From 2014 to 2018, diagnoses declined among all risk groups except people who inject drugs (PWID); diagnoses among that risk group increased. HIV diagnoses among PWID increased 9% overall. During this timeframe, there was a 7% decrease in diagnoses among men who have sex with men (MSM). These trends suggest that intensified HIV testing and prevention efforts among MSM are having an impact.³⁶³ In addition, from 2010 to 2017, the age-adjusted HIV-related death rate (the number of HIV-related deaths per 1,000 people with HIV) fell from 9.1 to 4.7, a decline of 48.4%. While there were reductions across all major demographic groups, disparities still persist. Rates (per 1,000 people with diagnosed HIV) of HIV-related deaths during 2017 were highest by race/ethnicity among persons of multiple races (7.0) and Black/African American persons (5.6), followed by White persons (3.9) and Hispanic/Latino persons (3.9). Focused public health efforts must continue to maintain the positive trends. Among regions most affected and among groups at substantial risk for HIV, accelerated efforts must continue to ensure access to testing, treatment, and prevention strategies, to ensure that every American has the knowledge and tools needed to protect themselves and their partners from HIV.

Diagnosis of HIV is only the first step in reducing infection. It is estimated that 38% of all transmissions come from those unaware of their HIV status and 43% of transmissions from those aware but not in care³⁶⁴. Patients must be linked to, and retained, in medical care to achieve and maintain viral suppression (having very low levels of HIV [viral load] present in the body). Evidence shows that viral suppression helps people with HIV to maintain their health and also prevents sexual transmission of HIV to others. In 2018, 64.7% of persons with diagnosed HIV infection were virally suppressed, an improvement over 2017 (63.1%) (CI 2.1.10). Recognizing the benefits of early treatment, and linkage to HIV medical care for all persons with newly diagnosed HIV infection, CDC's linkage to care goal was initially changed from within three months of diagnosis to within one month of diagnosis to be consistent with the NHAS 2020 HIV prevention goal of ensuring 85% of all persons with diagnosed HIV are linked to medical care within one month of diagnosis. In FY 2022, CDC will retire the NHAS measure for linkage to care within one month of diagnosis and replace it with a CDC program measure that focuses on CDC-funded testing sites' ability to link persons to HIV medical care in ≤ 30 days after HIV diagnosis. Data shows in FY 2018, 67% of persons with newly diagnosed HIV infection in CDC-funded testing sites were linked to HIV medical care in ≤ 30 days after HIV diagnosis (Measure 2.2.9). Early linkage to HIV care and treatment, especially when viral suppression is attained and sustained, is positively correlated with better health outcomes, thus helping persons living with HIV live longer, healthier lives and lowering their risk of transmission of HIV to others.

The majority of Americans with HIV are aware of their infection due, in part, to expanded HIV testing efforts. CDC estimates that 86.2% of people with HIV were aware of their status in 2018, up from 82.8% in 2010 (CI 2.1.3). This means one out of seven people with HIV in 2018 did not know their status. CDC directly funds testing that identifies one-third of the HIV diagnoses each year. CDC's Expanded Testing Initiative prevented an estimated 3,380 HIV infections in its first three years and saved an estimated \$1.2 billion in direct medical costs³⁶⁵. Data for FY 2018 indicate that CDC-funded HIV testing programs performed approximately 2.7 million HIV tests, further increased routine HIV testing in health care and community settings, and identified about 11,000 previously undiagnosed cases of HIV infection³⁶⁶. Testing provides a bridge to care for people with HIV. For those who receive an HIV diagnosis, the test is the first step toward care and treatment. For those who are not infected, but at risk, testing opens the door to prevention services, like pre-exposure prophylaxis (PrEP) that can keep them healthy and HIV free.

³⁶³Centers for Disease Control and Prevention. CDC HIV Prevention Progress Report, 2019. <https://www.cdc.gov/hiv/pdf/policies/progressreports/cdc-hiv-preventionprogressreport.pdf>.

³⁶⁴Li Z, Purcell DW, Sansom SL, Hayes D, Hall HI. Vital Signs: HIV Transmission Along the Continuum of Care — United States, 2016. *MMWR Morb Mortal Wkly Rep* 2019;68:267–272.

³⁶⁵<https://www.cdc.gov/nchstp/budget/infographics/docs/preventing-new-hiv-infections-P.pdf>.

³⁶⁶<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-HIV-testing-report-2018.pdf>.

Partner services programs are essential in preventing and controlling HIV in the United States and offer benefits to three principal groups: persons with HIV, their partners, and the community. A function of partner services is notifying partners of persons with diagnosed HIV infection of their possible HIV exposure and risk. Other functions of partner services interventions include prevention counseling, testing for HIV and other sexually transmitted infections (STIs), treatment or linkage to medical care, and linkage or referral to other prevention and social services. Partner services have been associated with positive behavior changes and reduced risk for HIV infection, along with reduced HIV transmission. Due to the steady progress that has been made regarding referrals to partner services, CDC plans to retire this measure in FY 2022 and replace it with a measure that aims to increase the percentage of individuals interviewed for partner services to better reflect CDC's impact through partner services. Among all people diagnosed with HIV through CDC-funded HIV testing programs in 2018, 86% were interviewed for partner services³⁶⁷ (Measure 2.2.10). In 2018, 98% of the 18,973 partners with a notification method reported were notified of their potential HIV exposure. Of the 6,408 partners tested and who had a documented HIV test result, 1,026 were newly identified as HIV-positive³⁶⁸. As the cornerstone of national HIV prevention and surveillance, beginning in 2018 through 2023, CDC awarded approximately \$400 million per year to state and local health departments. Additionally, CDC will continue to provide expert advice and assistance to recipients to further improve performance in these areas.

CDC also supports efforts to get effective HIV biomedical prevention tools, like pre-exposure prophylaxis (PrEP), into the community and in the hands of persons who need them most. For those at high risk for HIV, PrEP can significantly reduce the risk of HIV infection if taken daily. To address barriers in prescribing PrEP among health care providers, in 2016, CDC initiated an online Continuing Medical Education program, "Preventing HIV Infection in the Primary Care Setting: The Role of Pre-Exposure Prophylaxis (PrEP)." Over the course of the program's two-year accreditation, 26,663 clinicians accessed the program, with 13,327 taking the final test for continuing education credits. A follow-up course titled, "Advancing PrEP in Practice: Practical Strategies for Everyday Challenges" was released in 2017 and is still accredited. As of October 31, 2020, 21,314 healthcare providers had accessed this course, with 6,505 participants taking the final test for continuing education credits. In June of 2020 CDC released another continuing education program titled "HIV Testing, Prevention, and Treatment: A Stepwise Approach." While this program addresses the entire prevention-care continuum, it does include information about prescribing PrEP. As of October 31, 2020, 10,272 healthcare providers had accessed this course, with 6,304 participants taking the final test for continuing education credits.

In August 2018, CDC launched "Prescribe HIV Prevention" (PHP), an additional PrEP/PEP educational resource for clinicians. This communication effort supports healthcare providers to use PrEP and post-exposure prophylaxis (PEP) to prevent new HIV infections and improve health outcomes for patients at high risk for acquiring HIV. "Prescribe HIV Prevention" is part of CDC's "Let's Stop HIV Together" communication campaign designed to help reduce HIV incidence in the United States. The PHP initiative includes print and electronic resources that outline PrEP/PEP clinical trials and efficacy, prescribing information, and lab monitoring procedures, as well as patient education materials. Resources are distributed via CDC-INFO, at conferences, and are made available for download on the PHP website. Between August 1, 2018 and October 31, 2020, more than 2,818 PHP Resource Kits and 8,285 brochures and posters were distributed by CDC-INFO. An additional 24,054 pieces of PHP material were downloaded from the website. The "Prescribe HIV Prevention" homepage also had 49,565 views from August 2018 through September 2019. In the fall of 2019 CDC launched the HIV Nexus website, and PrEP content was integrated into this new site. From October 1, 2019 to October 1, 2020 the HIV Nexus homepage had 229,217 visits. CDC also supports HIV prevention programs through technical assistance. From April 1, 2019 to September 30, 2020, there were 33 technical assistance requests (completed and in progress) related to PrEP.

³⁶⁷<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-annual-HIV-testing-report-2018.pdf>.

³⁶⁸<https://www.cdc.gov/hiv/pdf/library/reports/cdc-hiv-partner-services-annual-report-2018.pdf>.

Data show an increase in awareness of PrEP and willingness to either use it or prescribe it, although additional awareness and implementation efforts are needed, particularly among most affected populations and their care providers, to scale up this highly effective biomedical intervention. In FY 2022, CDC will add a new PrEP measure and has prioritized increasing knowledge of, use of, support for, and adherence to PrEP for persons who could benefit from this regimen as one of its primary prevention efforts to achieve the goal of preventing new HIV infections. In FY 2018, 18.2% of persons with indications for PrEP were prescribed PrEP (Measure 2.2.8). Reflecting CDC's continued investment in supporting the nation's HIV prevention workforce and improving its overall performance, CDC will award up to \$120 million over five years to 17 organizations under its new program, Capacity Building Assistance (CBA) for High Impact HIV Prevention Program Integration. The program, which began on April 1, 2019, supports the federal initiative, Ending the HIV Epidemic: A Plan for America. By strengthening the capacity and improving the performance of the nation's HIV prevention workforce – including thousands of staff within state and local health departments, community-based organizations (CBOs) and healthcare organizations – the program will provide the communities with the highest burden additional expertise, technology and resources required to address the HIV epidemic.

The funding supports a CBA Provider Network that is implementing national training, regional technical assistance, continuous quality improvement and sustainability for CBOs, and marketing and administrative support. By enabling the HIV prevention workforce to optimally plan, integrate, implement, and sustain comprehensive programs and services, the CBA Provider Network will help make it possible to achieve the nation's HIV prevention goals. The CBA program is designed to respond to the evolving needs of the HIV prevention workforce and differs from previous capacity building programs in several important ways. The CBA program offers the following:

- Additional training options available in a variety of formats and at different skill levels, to effectively reach a wide range of HIV service providers. From April 1, 2019 to September 30, 2020, CDC conducted a total of 166 training sessions (includes classroom, blended, and eLearning) for 2,480 participants; updated eight existing training course curricula; converted two and is currently converting four in-person training course curricula to instructor led, virtual classroom settings; and developed one new course curricula and four new course curricula are under development.
- Tailored technical assistance services, with an increased focus on responding to specific regional and jurisdictional capacity building needs and preferences; addressing implementation challenges for HIV prevention programs and services; and peer-to-peer learning, support, and mentorship. From April 1, 2019 to September 30, 2020, CDC delivered 128 technical assistance support services to a total of 153 organizations.
- Better support to senior and mid-level HIV prevention program managers within CBOs by conducting a web-based distance learning program that addresses programmatic continuous quality improvement and organizational sustainability. The National Learning Community for HIV CBO Leadership distance learning program has been developed and the program pilot was launched on October 27, 2020. There are currently 26 participants enrolled in the pilot with a goal of enrolling a total of 36 participants.

The success in preventing new HIV infections among people who inject drugs (PWID) is threatened by national increases in unsafe, nonsterile injection practices that have been rising due to the opioid crisis. In 2018, seven percent of new HIV infections in the U.S. were among PWID. Research shows that syringe services programs (SSPs), community-based prevention programs that address drug use and infectious disease, offer several benefits as part of a comprehensive HIV prevention strategy. SSPs can play a role in preventing HIV among PWID, can facilitate entry into substance use disorder treatment (including medication-assisted treatment) and medical or social services, and do not increase illegal drug use. CDC supports state and local communities who wish to use Federal funds to implement syringe services programs (SSPs), after consulting with CDC and in accordance with state and local law. As of March 2020, health departments in 44 states and DC, one territory, and one tribal nation have adequately demonstrated need and received CDC concurrence according to Federal law. The opportunity for CDC

and its recipients to use federal funds to support certain components of SSPs provides at-risk communities with an additional HIV prevention tool.

CDC-led studies and broader scientific evidence demonstrate that school health programs can positively impact health-risk behaviors, health and educational outcomes, and are cost effective. For example, one study found that every dollar invested in a school-based HIV, sexually transmitted infections (STI), and pregnancy prevention program saves \$2.65 in medical costs and social costs (including earnings-related outcomes, public assistance, and other outcomes)³⁶⁹. CDC is strengthening the health infrastructure of state and local education agencies and addressing critical health issues including HIV/AIDS, STIs, and teen pregnancy prevention in schools. For example, the percentage of high school students who have ever had sexual intercourse decreased from 54.1% in 1991 to 38.4% in 2019. The percentage of adolescents in grades 9 to 12 abstaining from sexual intercourse, or using condoms if currently sexually active, increased from 86.3% in FY 2013 to 87.7% in FY 2019, exceeding CDC's FY 2019 target (Measure 2.1.7). However, condom use among currently sexually active students decreased from 63.0% in 2003 to 54.3% in 2019.

CDC, in collaboration with state and local health departments, is working to better monitor the effects of HIV medical care through expanded reporting of CD4 and viral load test results. Test results are vital indicators of which patients are in care and virally suppressed, and those patients who have fallen out of care. In FY 2018, the number of states requiring reporting of all CD4 and viral load values, through law or regulation, increased to 46 states and Washington, D.C. (Measure 2.2.4). CDC data from 40³⁷⁰ jurisdictions with complete laboratory reporting demonstrate progress on increasing linkage to care and viral suppression compared to previous national estimates. These jurisdictions represent 85.9% of persons with diagnosed HIV. CDC continues to prioritize expanded reporting of CD4 and viral load reporting in the HIV surveillance and prevention program.

With stronger reporting, CDC's Data to Care tools increase health department capacity to use routinely collected HIV surveillance data to identify and follow up with people with HIV who are not in care. CDC continues to learn best practices through Data to Care demonstration projects and related activities in the HIV surveillance and prevention program. From 2012-2016, seven health departments used HIV surveillance and other data to re-engage 82% of persons with HIV diagnosis in their jurisdictions who were known to be out of care and offered linkage or reengagement services. CDC expanded Data to Care activities to all U.S. health department jurisdictions in 2018.

Complete reporting of laboratory results that includes HIV molecular sequence data also supports efforts to rapidly detect and interrupt clusters of active HIV transmission. Cluster detection and responses uses data routinely reported to health departments to identify communities where HIV may be spreading quickly. Once clusters are identified, public health officials can identify gaps in and barriers to prevention and care services and direct resources to ensure that these services (engagement in care, partner services, HIV testing, PrEP, SSPs) reach the populations that need them most, which in turn saves health care dollars associated with HIV and other related health outcomes. Health departments can identify clusters in numerous ways, including by providers or CBOs who report an increase in diagnoses, by contact tracing through partner services that identifies a group of people with potentially related infections, or through routinely reported surveillance data. Surveillance data can identify clusters either through detecting increased diagnoses in a particular geographic area or population subgroup or through analysis of HIV molecular sequence data, which are routinely reported in most jurisdictions. In 2019, CDC collaborated with state and local health departments to address 86 clusters of HIV infections identified through CDC molecular analysis at the national level. Additionally, 48 jurisdictions use a bioinformatics tool developed and managed by CDC that allows these health departments to identify molecular clusters of HIV infections within their jurisdiction in near-real time. CDC is working to ensure that all jurisdictions can incorporate HIV sequence data into

³⁶⁹Wang, L. Y., Davis, M., Robin, L., Collins, J., Coyle, K., & Baumler, E. (2000). Economic evaluation of Safer Choices: a school-based human immunodeficiency virus, other sexually transmitted diseases, and pregnancy prevention program. *Archives of pediatrics & adolescent medicine*, 154(10), 1017-1024.

³⁷⁰There are 46 states and DC with laws that require reporting of all CD4 and viral load test results. However, 40 jurisdictions met the criteria of complete lab reporting to be included in the monitoring report (i.e., have the law, 95% of labs are reporting to the state and 95% of labs received by the state are reported to CDC).

existing laboratory reporting processes and address barriers to this reporting. Using these data in near-real time to inform prevention efforts requires close coordination between surveillance and prevention programs and between state and local programs.

Viral Hepatitis

Performance Measures for Long Term Objective: Reduce the rates of viral hepatitis in the United States

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target ¹	FY 2022 +/-FY 2021
2.6.4 Increase the number of state and local health departments reporting acute and chronic viral hepatitis data of sufficient quality to be included in national surveillance reports (Output)	FY 2018: 31 Target: 28 (Target Exceeded)	32	45	+13
2.6.7 Reduce estimated new hepatitis A virus infections	FY 2018: 24,900 Target: 6,250 (Target Not Met)	4,900	4,450	-450
2.6.8 Reduce estimated new hepatitis B virus infections	FY 2018: 21,600 Target: 21,500 (Target Not Met but Improved)	19,400	18,700	-700
2.6.9 Reduce estimated new hepatitis C virus infections	FY 2018: 50,300 Target: 43,083 (Target Not Met)	38,233	36,617	-1,616
2.6.10 Reduce reported rate of hepatitis C-related deaths per 100,000 population	FY 2018: 3.72/100,000 Target: 3.94/100,000 (Target Exceeded)	3.38/100,000	3.19/100,000	-0.19
2.6.11 Reduce reported rate of hepatitis B-related deaths per 100,000 population	FY 2018: 0.43/100,000 Target: 0.45/100,000 (Target Exceeded)	0.40/100,000	0.39/100,000	-0.01

Performance Trends: In the United States, hepatitis A, B, and C viruses (HAV, HBV, and HCV) are the main causes of viral-induced hepatitis. In 2013-2016, it was estimated that 2.4 million adults were living with hepatitis C infection and 862,000 people were living with hepatitis B infection, which together are major causes of chronic liver disease and liver cancer. In contrast to the declining rate of deaths from other cancers, deaths from liver cancer are rising in the United States, with much of the increase attributed to viral hepatitis. Hepatitis C is curable and hepatitis B is treatable, yet an estimated 55.6% and 32.4% of people living with hepatitis C and hepatitis B, respectively, were aware of their infection in 2013-2016. While death rates began to decline in 2013, there were still more than 15,000 reported hepatitis C-related deaths for this curable disease in the United States in 2018 alone.

The rise in the number of new cases of hepatitis A and hepatitis C in the United States is of particular concern. Hepatitis A cases have increased since 2016, mainly due to large person-to-person outbreaks occurring nationally among persons who use drugs and persons experiencing homelessness. Of the hepatitis A cases reported that

included risk factor data in 2018, 50% reported injection drug use. Based on 12,474 new cases of hepatitis A that were reported in 2018, CDC estimates that there were 24,900 cases of hepatitis A (Measure 2.6.7), compared with 2,007 reported cases and 4,000 estimated cases in 2016. Until 2017, U.S. incidence rates were influenced by occasional outbreaks, often linked to imported food. However, in 2017, large person-to-person outbreaks began occurring among persons who use drugs and persons experiencing homelessness. Beginning in FY 2022, CDC is retiring its hepatitis A measure focused on incidence and will replace it with a measure to track hepatitis A cases using the estimated number of cases. As of July 2020, CDC has received reports from 33 states experiencing outbreaks of hepatitis A spread through person-to-person contact among people who use drugs, people who are homeless or have unstable housing, men who have sex with men, and people who are currently or were recently incarcerated.

In FY 2022, CDC will also retire its measure on the rate of acute hepatitis B cases and will introduce a new measure that uses the estimated number of cases. In 2018 there were 21,600 estimated cases of acute hepatitis B in the United States, a decrease from 2017 (Measure 2.6.8). Hepatitis B cases were similarly driven by injection drug use, with 36% of acute hepatitis B cases that included risk factor data reporting injection drug use. CDC will also add a measure to monitor reported rates of hepatitis B-related deaths (or mortality). The baseline for this new measure is 0.43 hepatitis B-related deaths per 100,000 population in 2018 (Measure 2.6.11).

Similarly, CDC will retire its rate of hepatitis C measure and replace it with a measure tracking the number of estimated cases of hepatitis C. Between 2014 and 2018, the United States experienced an almost 65% increase in the number of estimated cases of acute hepatitis C, from 30,500 in 2014 to 50,300 in 2018 (Measure 2.6.9). New CDC data from 2018 shows that of the cases reporting risk factors, 72% reported injection drug use. The percent of newly reported hepatitis C chronic infections was equal among those born from 1945 to 1965 and those born from 1981 to 1996. CDC is adding another new measure to track reported hepatitis C-related deaths (or mortality) to monitor the impact of hepatitis C treatment. In this first year of reporting this measure, there were 3.72 hepatitis C-related deaths per 100,000 population in 2018 (Measure 2.6.10).

The recent increases in hepatitis A and hepatitis C highlight the importance of public health surveillance to identify and respond to outbreaks, and to better identify people at risk for infections. Most states have laws that require reporting of hepatitis A, B, and C. However, the current volume of viral hepatitis testing overwhelms the existing surveillance capacity of most state and local health departments and most do not have the resources to process the laboratory results, notify CDC, and utilize the data for action. Consequently, the number of cases reported to CDC underestimate the expected number of cases occurring, and do not always include sufficient information about the case. Improvements in surveillance and monitoring efforts, particularly around case ascertainment conducted through proactive, direct engagement with providers, laboratories, and patients--are needed to strengthen preventive services if the United States is to reverse the current trend of steady increases in the number of reported acute hepatitis cases. These improvements would help to rapidly detect and prevent new viral hepatitis infections, as well as ensure that hepatitis C-infected persons receive appropriate care and curative treatment to avoid premature death and prevent transmission.

CDC provides resources to states to improve viral hepatitis surveillance, and invests in 14 states (Florida, Georgia, Indiana, Kentucky, Louisiana, Massachusetts, New Jersey, North Carolina, Ohio, Oklahoma, Tennessee, Utah, Washington, and West Virginia) to improve active surveillance of new hepatitis B and C infections in statewide jurisdictions; these 14 jurisdictions represent more than 70% of new cases of hepatitis B and C reported in the United States. These and other efforts have led to increases in the number of states submitting quality data to CDC. In FY 2018, 31 states reported acute and chronic viral hepatitis data, exceeding the target (Measure 2.6.4).

Hepatitis A and B are vaccine preventable. A two-dose hepatitis A vaccine and a three-dose hepatitis B vaccine are available in the U.S. Each vaccine prevents more than 95% of infections. Prior to the 1996 implementation of Advisory Committee on Immunization Practices (ACIP) recommendations for hepatitis A immunization, an estimated >21,000 infections and 100 deaths occurred as a result of acute liver failure attributed to hepatitis A each

year. Due to the implementation of effective immunization strategies, nationwide HAV incidence decreased approximately 97% since 1995. Among children born during 2015–2016, coverage with two or more doses of the hepatitis A vaccine by age 35 months was 76.6% and with one or more doses by age 24 months was 84.7%. In 2017, coverage with two or more doses among adolescents aged 13–17 years was 68.4% and with one dose was 77.2% and among adults aged 19 years or older was 10.9% overall, with 17.7% coverage among travelers and 20.8% coverage among persons with chronic liver disease.

Hepatitis A cases have increased since 2016, mainly resulting from the large person-to-person outbreaks among adults that have been occurring nationally. Most adults are susceptible to hepatitis A (10.9% coverage with two or more doses in 2017), through lack of childhood exposure or vaccination, and are vulnerable to infection during food-borne outbreaks of hepatitis A. Adults with hepatitis A have the highest risk for liver failure and death. CDC has assisted state and local jurisdictions with epidemiological and lab support. In direct response to the large person-to-person outbreaks, in February 2019, the hepatitis A vaccine recommendations were subsequently updated to include an indication for vaccination among persons experiencing homelessness. In June 2019, the ACIP voted to recommend that all children aged 2 through 18 years who have not previously received hepatitis A vaccine be vaccinated at any age (i.e., children and adolescents are recommended for catch-up vaccination) and that all persons with HIV aged 1 year and older be vaccinated with hepatitis A vaccine. These recommendations were included in the 2020 CDC immunization schedule and published in the Morbidity and Mortality Weekly Report in July 2020.

Vaccination is the cornerstone of hepatitis B prevention as well, but challenges exist in ensuring a timely dose of the hepatitis B vaccine is given to newborns, preferably within 24 hours of birth, and vaccinating at-risk adults. Virtually all newborns, when infected with hepatitis B, remain infected for life resulting in one in four infected individuals dying of hepatitis B-related cirrhosis and liver cancer.

The elimination of mother-to-child transmission of hepatitis B was an articulated goal in the National Academies' 2017 report, "A National Strategy for the Elimination of Hepatitis B and C," as well as the National Viral Hepatitis Action Plan; it is also the priority for CDC-funded Perinatal Hepatitis B Prevention Programs (PHBPP). Evaluation data confirm that perinatal hepatitis B prevention programs are an effective way to prevent hepatitis B infection among infants. CDC is supporting PHBPP by facilitating laboratory reporting of hepatitis B-infected pregnant people from national commercial laboratories and encouraging administration of the first dose of hepatitis B vaccine routinely within 24 hours of birth, as recommended by ACIP.

CDC also continues to pursue opportunities for reducing new hepatitis B infections in populations other than children. In 2018, a new CDC ACIP hepatitis B vaccine recommendation statement was published. In addition, the American Association for the Study of Liver Diseases (AASLD) guidelines for maternal antiviral therapy to reduce perinatal HBV transmission was published in 2018. An ACIP Policy Note was also published in 2018 providing recommendations for a new hepatitis B vaccine for persons aged ≥ 18 years, administered on a 2-dose schedule over 1 month.

While hepatitis C is not vaccine-preventable, it is curable. Many people with chronic hepatitis C have moderate to severe liver disease that can be stopped with immediate testing, treatment, and cure of their infection. Unfortunately, nearly half of Americans living with hepatitis C do not know they are infected and even fewer are receiving appropriate care, and fewer still are receiving life-saving treatment. With millions of Americans living with hepatitis C, the burden of this disease is substantial and poses a serious threat, not only to baby boomers (born between 1945-1965), who have the highest death rate associated with hepatitis C, but also to adults younger than 40 (including women of childbearing age), who have the highest rates of new infection. To help Americans receive hepatitis C testing, in 2020 CDC expanded its previous recommendations to call for testing of every adult at least once, pregnant women during every pregnancy, and everyone with ongoing risk factors regularly.

Recent national increases in hepatitis C incidence are due primarily to an increase in people who inject drugs. People who inject drugs are also at increased risk for hepatitis A and B. By offering testing and linkage to care in high-impact settings—where people who inject drugs are accessible — within designated high-burden or vulnerable areas, health departments will be able to efficiently address the infectious disease complications of the opioid crisis. As part of a response to this need, CDC provided resources to nine jurisdictions to collaborate with partner organizations that are within designated high-burden areas to conduct hepatitis B and hepatitis C testing and linkage to care in high-impact settings, (e.g., syringe services programs, substance abuse treatment facilities, emergency departments, correctional facilities). Recipients and their partner sites have been working diligently to establish new partnerships, execute contracts, hire coordinators, and implement activities to increase testing and linkage to care among people who inject drugs. Preliminary results show that 2,179 people have been tested for HBV infection and 6,923 have been tested for HCV infection. Among those, 92% of those who tested positive for hepatitis B surface antigen and 48% of those who tested positive for HCV RNA have been linked to care. These activities started on September 1, 2019 and have been extended through August 31, 2021. These activities have been impacted by COVID-19 and this extension will allow more time for the recipients and their sites to continue their efforts to increase hepatitis B and hepatitis C testing and linkage to care among people who inject drugs.

Sexually Transmitted Infections

National Level Performance Measures and CDC Contextual Indicators for Long Term Objective: Reduce pelvic inflammatory disease in the United States

Contextual Indicators	Most Recent Result	FY 2025 Target
2.7.6e Increase the proportion of sexually active women aged 16-24 enrolled in commercial health plans who are screened for chlamydia infections	FY 2019: 52.4%	66.4%
2.7.6f Increase the proportion of sexually active females enrolled in Medicaid plans who are screened for chlamydia infections: Females aged 16-24 years	FY 2019: 61.8%	66.4%
2.7.7 Reduce the rate of symptomatic gonorrhea cases in men	FY 2018: 173.4	173.4

Performance Measures for Long Term Objective: Reduce pelvic inflammatory disease in the United States

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
2.7.5 Increase the proportion of gonorrhea patients who are treated with a CDC-recommended antibiotic regimen for gonorrhea (Outcome)	FY 2018: 85.8% Target: 87.6% (Target Not Met but Improved)	87.6%	87.6%	Maintain
2.9.1 Reduce the rate of primary & secondary syphilis in women aged 15-44 (per 100,000 population) (Outcome) ³⁷¹	FY 2018: 6.9/100,000 Target: 0.8/100,000 (Target Not Met)	0.8/100,000	0.8/100,000 ³⁷²	Maintain

³⁷¹ Measure language was updated to align with the STI National Strategic Plan. “Incidence” was replaced with “rate” as primary and secondary cases are by definition incident infections.

³⁷² CDC re-baselined in FY 2020 to align target with the STI National Strategic Plan.

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
2.9.2 Reduce the rate of congenital syphilis (per 100,000 live births) (Outcome) ³⁷³	FY 2018: 33.1/100,000 Target: 6.2/100,000 (Target Not Met)	66/100,000	64.3/100,000 ³⁷⁴	-1.7
2.9.3 Increase percentage of pregnant women screened for syphilis at least one month before delivery (Outcome)	FY 2017: 89.9% Target: 84% (Target Exceeded)	92.8%	92.8%	Maintain
2.9.4 Increase the proportion of potential congenital syphilis cases averted (Outcome)	FY 2018: 66% Target: 75% (Target Not Met)	75%	75%	Maintain
2.9.5 Reduce the rate of increase of primary and secondary syphilis (Outcome)	FY 2018: 15% Target: 9% (Target Exceeded)	9%	13.4%	+4.4

Performance Trends: The COVID-19 pandemic has delayed 2019 STD surveillance data until 2021. The continued upward trajectory of sexually transmitted infections (STI) is expected as many individuals have experienced delays in care and treatment due to reduced or suspended STI services, activities, and drug shortages. The National Coalition of STD Directors report 83% of sexually transmitted disease (STD) programs deferred STD services or field visits, 66% of clinics reported a decrease in sexual health screening and testing, 60% reported a reduced capacity to treat STDs, and some sexual health clinics closed altogether for some period during the pandemic. Syndromic management and presumptive treatment of STI cases have also been recommended during the pandemic. Shortages of STI testing supplies are also ongoing and pervasive. An American Society for Microbiology survey found that as of November 2020, 66% of clinical labs reported a shortage of supplies for tests that detect STIs with only 10 days of supplies on hand. Further, the Food and Drug Administration reported a shortage of azithromycin tablets in April 2020, the recommend treatment for chlamydia and in dual use therapy for gonorrhea.

In addition, COVID-19 disruptions have led to the reallocation of disease intervention specialists. By July 2020, 57% of disease intervention specialists reported that they or other disease intervention specialists in their jurisdictions had been redeployed to assist with the COVID-19 response. The pandemic has challenged the field of STI prevention and provided CDC with opportunities to test innovative strategies that may contribute to expanded access to diagnostic and treatment options and a future reduction in STIs. To overcome these challenges, local health departments have pivoted to telemedicine models, offering screening, counseling, case management and other partner services. The scale up of express STI testing will help reduce face-to-face contact to reduce the spread of COVID-19. Some programs have started to implement innovative testing protocols such as home or non-clinic-based self-testing programs.

Despite these challenges, CDC assures the provision of quality sexually transmitted infection (STI) services in both the public and private sectors through technical assistance, issuing and promoting clinical guidelines and recommendations, and providing education and training for health and medical professionals. CDC's STI work also

³⁷³ Measure language was updated to align with the STI National Strategic Plan. "Incidence" was replaced with "rate" as primary and secondary cases are by definition incident infections.

³⁷⁴ CDC re-baselined in FY 2020 to align target with the STI National Strategic Plan.

supports surveillance, contact tracing, and connection to care for patients diagnosed with STIs and HIV, outbreak response, assurance of appropriate screening and treatment by providers, and providing reliable and trustworthy STI information to the public. Data for 2018 showed that STI cases and rates continue to rise throughout the nation, including increases in gonorrhea, chlamydia, and syphilis. The upward trajectory of STIs, coupled with reduced resources, will require CDC to further prioritize program activities and initiatives, reducing actions where necessary, to maintain current targets.

Health departments reported nearly 2.6 million cases of chlamydia, gonorrhea, and syphilis to CDC in 2018, the highest number ever for the United States. Data suggest that multiple factors may be contributing to the alarming increase in STIs: reduced access to STI prevention and care, including late prenatal care; decreases in condom use among vulnerable groups; drug use; and as noted above consequences of the COVID-19 pandemic. CDC supports local efforts, such as disease intervention specialists, outbreak response teams, and training for health care providers, as well as community/partnership engagements. Screening improvements and investments in non-traditional evidence based and innovative STI prevention strategies will avert infections and improve national health outcomes, and will prove cost-effective due to the high, and increasing, economic burden associated with STIs and their related health consequences.

CDC, along with other federal partners, has collaborated with the Office of the Assistant Secretary for Health's Office of Infectious Disease and HIV/AIDS Policy on the development of an inaugural national strategic plan for STI prevention, diagnosis, treatment and care designed to meet substantial, achievable and measurable goals to reduce the rates of STIs and improve outcomes. The strategic plan was published in December 2020. CDC will collaborate to develop an implementation plan to support the strategic plan goals, objectives, and strategies. The implementation plan will set forth CDC's commitments to policies, initiatives, and activities to meet the goals of the strategic plan, and will be published for transparency and accountability.

CDC's long-term STI objectives are to eliminate congenital syphilis, prevent primary and secondary syphilis, prevent antimicrobial resistant gonorrhea, and prevent STI-related pelvic inflammatory disease (PID), ectopic pregnancy, and infertility. PID is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. Infections due to *Chlamydia trachomatis* and *Neisseria gonorrhoea* are major causes of PID. As part of CDC's flagship program among state, cities, and territories to prevent and control STDs, recipients prioritize activities to support the long-term objectives mentioned above while working to address STD-related outbreaks and reduce STD-related health disparities. Priority populations for these activities include adolescents and young adults, men who have sex with men, and pregnant people. Several other state- and/or jurisdiction-based programs support these priorities as well.

CDC released recommendations for Providing Quality Sexually Transmitted Diseases Clinical Services, 2020 (STD QCS). The report highlights the services healthcare settings can offer to provide the highest-quality STD care and identify opportunities to build, maintain or enhance those services. STD QCS is structured to provide recommendations based on clinical setting type – primary care or STD specialty care. For clinics located in Ending the HIV Epidemic jurisdictions, optimizing STD care services will also help accelerate progress toward ending the HIV epidemic through identification of new HIV infections, individuals at higher risk for HIV, and PrEP-eligible individuals.

Reported chlamydial infection rates among women have increased since the late 1980s. In part, this reflects expanded chlamydia screening activities, the use of increasingly sensitive diagnostic tests, increased emphasis on case reporting from providers and laboratories, and improvements in reporting systems. The increase may also reflect a true increase in morbidity. CDC is collaborating with the health care sector to increase adherence to existing recommendations and developing tools for providers to increase awareness and assist with chlamydia screening implementation. Private and public health plans have improved screening rates for chlamydia, increasing slightly from 2012 to 2018 (commercially insured, 44.2% to 52.4% [Measure 2.6.7e]; Medicaid, 57.9% to 61.8% [Measure 2.6.7f]). Although chlamydia test rates are increasing among sexually active women aged 15-25 years, the slower growth in chlamydia testing rates may relate to the change in the 2009 American Congress of Obstetricians

and Gynecologists (ACOG) Pap testing guidelines, and possibly increases in long-acting reversible contraceptives. Innovative approaches to conduct chlamydia testing during wellness and preventive visits apart from Pap testing are still needed.

Following a 74% decline in the rate of reported gonorrhea during 1975–1997, the overall gonorrhea rate decreased to 98.1 cases per 100,000 population in 2009—the lowest rate since recording of gonorrhea rates began. However, during 2009–2012, the rate increased slightly each year, to 106.7 cases per 100,000. In 2013, the rate decreased to 105.3 cases per 100,000 population, followed by a yearly increase during 2013–2018. In 2018, a total of 583,405 cases were reported, and the national gonorrhea rate increased to 179.1 cases per 100,000, an increase of five percent from 2017. This is a rate increase of 82.6% since historic lows in 2009. The increase in the gonorrhea rate during 2018 was observed among both males and females; however, the increase was larger among males. In 2018, the rate of symptomatic gonorrhea cases in men increased from 148.3 cases per 100,000 in 2017 to 173.4 cases per 100,000 (CI 2.7.7). Antimicrobial resistance remains an important consideration in the treatment of gonorrhea. In FY 2018, 85.8% of patients received treatment with a CDC-recommended antibiotic regimen for gonorrhea, an improvement from 2017 and nearly meeting the 2018 target (Measure 2.7.5).

Reported rates of primary and secondary (P&S) syphilis, the most infectious stages of the disease, are the highest that they have been in more than 20 years. CDC identified that in 2018, syphilis had increased nationally in all populations—men, women, and infants³⁷⁵. CDC did not meet its target for reducing the rate of primary and secondary syphilis among women aged 15–44 and saw the number of cases increase from 5.1 cases per 100,000 in 2017 to 6.9 cases per 100,000 in 2018 (Measure 2.9.1). In 2018 the rate of increase of P&S syphilis increased to 15% (9.4 to 10.8) from 11% (8.6 to 9.4) in 2017 (Measure 2.9.5), missing the 2017 target. Because the rates of syphilis continue to increase, CDC has made significant investments in programs that focus on surveillance, screening recommendations, epidemiologic studies, and disease intervention specialists. To prevent further increases of syphilis among women, disease intervention specialists play a critical role in identifying and responding to syphilis cases among women and their male partners through case interviews and contact tracing.

Congenital syphilis (CS) has become an alarming problem that urgently requires awareness, attention, and action. Data from the 2018 STD Surveillance Report found that the number of CS cases spiked for the sixth year in a row. In 2018, there were a total of 1,306 cases – an increase over the previous year. It has been almost two decades since this many cases were reported. In 2018, the congenital syphilis rate was 33.1 cases per 100,000 live births (Measure 2.9.2), the highest reported rate since 1998, and short of the 2018 target. This increase represents a 39.7% increase from 2017 (23.3 cases per 100,000 live births) and an 185.3% increase from 2014. As has been observed historically, this increase in the congenital syphilis rate has paralleled P&S syphilis among women during 2014–2018 (172.7%)³⁷⁶. CDC re-baselined measures 2.9.1 and 2.9.2 in FY 2020 to align their targets with the upcoming STI National Strategic Plan, which covers 2021–2025.

Congenital syphilis is a preventable disease, which could be eliminated through consistent and effective screening and treatment before and during pregnancy and timely treatment of infected women. The percentage of pregnant women screened for syphilis at least one month before delivery increased from 87.2% in 2015 to 89.9% in 2017, a 3.1% increase in a two-year period (Measure 2.9.3). This exceeded the 2017 target and is an indication that providers are improving adherence to CDC recommendations for screening pregnant women for syphilis. Elimination of CS would contribute to reductions in lost pregnancies, stillbirths, infant deaths, and preterm/low birth weight infants. The proportion of potential congenital syphilis cases averted decreased in 2018 to 66% from 72% in 2016, missing the target (Measure 2.9.4). However, the absolute number of CS cases averted increased from 1,800 in 2017 to 2,482 in 2018.

³⁷⁵ <https://www.cdc.gov/std/stats18/default.htm>.

³⁷⁶ Centers for Disease Control and Prevention (CDC). Sexually Transmitted Disease Surveillance 2018. Atlanta: U.S. Department of Health and Human Services; 2018.

In June 2020, CDC released the following report: Missed Opportunities for Prevention of Congenital Syphilis – United States, 2018. The report found that 1 in 2 newborn syphilis cases in the U.S. occur due to gaps in testing and treatment during prenatal care. Data revealed that most cases occur when moms are not testing during prenatal care; are diagnosed, but not adequately treated for syphilis; or acquired syphilis later in pregnancy after an initial negative test. While most failures occur while women are receiving some level of prenatal care, 1 in 4 cases occur when mothers have no timely prenatal care. Commonly missed opportunities also differed by region, underscoring the importance of tailoring prevention solutions to the needs of affected communities. CDC is working with the National Network of STD Prevention Training Centers to improve knowledge of congenital syphilis screening recommendations among healthcare providers, including screening at multiple points during pregnancy in high morbidity areas. CDC is also encouraging STD programs in high morbidity areas to establish case review boards to identify specific gaps in social and health systems, and to work with partners to address and close the gaps.

Tuberculosis

Performance Measures for Long Term Objective: Decrease the rate of cases of tuberculosis (TB) among U.S. born persons in the United States

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
2.8.1 Decrease the rate of cases of tuberculosis among U.S.-born persons (per 100,000 population) (Outcome)	FY 2019: .90/100,000 Target: 1.1/100,000 (Target Exceeded)	1.0/100,000	1.0/100,000	Maintain
2.8.2 Increase the percentage of newly diagnosed TB patients who complete treatment within 12 months (where ≤12 months of treatment is indicated) (Outcome)	FY 2017: 89.8% Target: 91.5% (Target Not Met)	93%	93%	Maintain
2.8.3 Increase the percentage of culture-positive TB cases with initial drug susceptibility results reported (Outcome)	FY 2019: 93.8% Target: 98.5% (Target Not Met)	98.5%	98.5%	Maintain
2.8.4 For contacts to sputum acid-fast bacillus smear-positive TB cases who have started treatment for newly diagnosed latent TB infection, increase the proportion of TB patients who complete treatment (Outcome)	FY 2018: 77.3% Target: 70% (Target Exceeded)	75%	75%	Maintain
2.T Number of state public health laboratories participating in the TB	FY 2019: 50 Target: 50 (Target Met)	50	50	Maintain

Genotyping Network (Output)				
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Performance Trends: In March 2019, the United States reported a provisional total of 8,916 tuberculosis (TB) cases (2.7/100,000 population). Among persons born in the United States, the rate in 2019 was .9/100,000 (Measure 2.8.1). The rate of the decline in all U.S. TB cases has slowed. U.S. TB case rates remain at levels 27 times higher than the national goal of one case per million population, disproportionately affecting racial and ethnic minority populations and those spending time in close contact with one another, for example, in homeless shelters, correctional facilities, and long-term care facilities.

Treating TB disease until cured is credited with keeping multidrug-resistant (MDR) TB disease in the United States low, at one percent of the total number of new TB cases in 2019, compared with the World Health Organization’s estimate of 3.36% of new cases reported globally the same year. CDC and partners remain vigilant about finding and treating persons with active TB disease.

CDC and its funding recipients use performance indicators to monitor programmatic activities that are tied to the U.S. goal of one TB case per million people. By monitoring progress against these indicators, CDC can determine where programs require additional technical assistance.

CDC supports public health laboratory testing for drug resistance and use of Advanced Molecular Detection (AMD)³⁷⁷ tools to genetically map TB specimens to develop a database to better understand and halt the spread of the disease. For example, AMD methods have enabled CDC to identify extensive ongoing TB transmission within the United States, particularly among high-risk populations. In FY 2019, 93.8% of culture-positive TB cases underwent initial drug susceptibility testing, which is lower than the target of 98.5% (Measure 2.8.3). CDC continues to meet its target of 50 state public health laboratories participating in the TB Genotyping Network (Measure 2.T).

In addition to preventing drug resistance, completion of treatment for TB disease immediately reduces the spread of TB. In FY 2017, 89.8% of patients with TB disease completed a curative course of treatment for TB within 12 months (Measure 2.8.2). Completion of therapy may be more difficult for people with health problems such as HIV infection, diabetes, substance use disorders, and persons experiencing homelessness or who have been incarcerated. In 2020, CDC presented findings from the first clinical trial to identify a shorter treatment regimen in almost 40 years. It is the largest drug-susceptible TB disease treatment trial that CDC has sponsored, with more than 2,500 participants enrolled at 34 clinical sites in 13 countries. Shortening treatment for TB disease can benefit patients, families, healthcare providers and health systems. This is especially important in the era of COVID-19, which has caused widespread disruptions to care and treatment access for many people with TB disease. CDC also presented results for a two-year study conducted by New York City Department of Health and Mental Hygiene, CDC, and Columbia University comparing electronic directly observed therapy (eDOT) with traditional, in-person directly observed therapy (DOT). The results demonstrated eDOT was at least as effective as traditional in-person DOT for ensuring high adherence to treatment while enabling patient-centered care for tuberculosis (TB) disease.

CDC-funded recipients conduct contact investigations for every case of infectious TB disease, evaluating more than 90,000 people every year. CDC measures each step of the care cascade for people who were exposed to someone with infectious TB disease beginning with the identification of contacts, medical evaluation for TB disease or latent TB infection, and initiation of treatment as needed. CDC reported that in 2018, 77% of persons at highest risk for TB disease completed treatment for latent TB infection (Measure 2.8.4). This is a slight decrease from the FY 2017 result but still exceeded the target.

Untreated TB disease can be fatal. If sick people are not promptly diagnosed, people in close contact with them will get sick as well. During FY 2020 most TB programs experienced partial or high impact on staff capacity and essential

³⁷⁷ <http://www.cdc.gov/amd/project-summaries/tuberculosis-surveillance.html>.

TB control services as they devote staff to the COVID-19 response. TB control professionals possess critical skills needed for responding to COVID-19, including contact tracing, infection control, and clinical expertise. TB programs have also needed to divert resources, such as hospital isolation rooms and personal protective equipment, to the COVID-19 response. Additionally, drugs used in TB treatment are vulnerable to shortage because there are few FDA-approved manufacturers that make them in the United States. During FY 2020, TB programs reported lack of access to one of the TB first-line drugs, one used in treating HIV/TB, and a drug used in treating latent TB infection.

EMERGING AND ZONOTIC INFECTIOUS DISEASES

Emerging Infectious Diseases

Performance measure for Long Term Objective: Build and Strengthen health information systems capacity in state and local health departments

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
3.5.2 Maintain the percentage of laboratory reports on reportable conditions that are received through electronic means nationally (Outcome)	FY 2019: 90% Target: 90% (Target Met)	90%	90%	Maintain

Performance measures for Long Term Objective: Protect Americans from death and serious harm caused by medical errors and preventable complications of healthcare

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
3.3.3 Reduce the central line-associated bloodstream infection (CLABSI) standardized infection ratio (SIR) (Outcome)	FY 2019: 0.69 Target: 0.60 (Target Not Met but Improved)	0.45	0.40	-0.05
3.3.2b Reduce invasive healthcare-associated Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) infections ¹ (Outcome)	FY 2018: 56,000 Target: 40,000 (Target Not Met)	32,800	30,400	-2,400

Performance Trends: Advancing national implementation of Electronic Laboratory Reporting (ELR) is a priority in CDC's efforts to protect the public's health. ELR replaces paper-based reporting, which accelerates reporting to public health labs; reduces the reporting burden on clinicians, hospitals, and commercial laboratories; and decreases errors and duplicate reporting. As of FY 2019, electronic laboratory reports accounted for 90% of laboratory reports for reportable conditions received. This is a four percentage point increase over FY 2018 results, meeting the FY 2019 target and maintaining progress since FY 2012 (Measure 3.5.2). There are diminishing returns trying to push the ELR volume number higher than 90%; therefore, the program considers moving from 62% in 2013 to 90% in 2019 as a success and will retire this measure after FY 2022.

CDC provides national leadership in healthcare-associated infection (HAI) prevention and provides the scientific foundation for preserving quality care, improving patient safety, and advancing U.S. healthcare practices. Adherence to CDC guidelines is the standard of care for HAI prevention of infections such as central line-associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), surgical site infection (SSI), *Clostridioides difficile* infections (CDI), and invasive methicillin-resistant *Staphylococcus aureus* (MRSA) infections. In addition, many HAIs, including CLABSI can be caused by antibiotic resistant (AR) pathogens.

Reducing HAIs across all healthcare settings supports HHS' mission to prevent infections, improve patient safety, combat AR and its complications, as well as reduce excess U.S. healthcare costs. These efforts also align with the National Action Plan to Prevent Healthcare-Associated Infections: Roadmap to Elimination (National HAI Action

Plan),³⁷⁸ National Action Plan for Combating Antibiotic Resistance Bacteria (CARB),³⁷⁹ and Healthy People 2030 Goals. CDC did not meet its FY 2019 target for reducing the CLABSI SIR with a result of 0.69, representing a 31% decrease compared to the 2015 baseline (Measure 3.3.3). Similar to previous years, infection decreases were more pronounced in certain areas, like neonatal intensive care units, than in hospital wards and other ICUs. CDC is on track to meet other 2020 National HAI Action Plan targets, e.g. CAUTI and CDI.

Preliminary data show there were 56,000 healthcare-associated invasive MRSA infections in FY 2018 – a decrease from 2017, but still higher than the 2018 target (Measure 3.3.2b). Hospital onset MRSA infections decreased. However, healthcare-associated community-onset (HACO) infections increased enough to cause the overall measure to increase. Possible explanations for this increase include increased infections related to the injection of drugs, e.g., opiates, as these cases increased 63% over the year, and some facilities stopping the use CDC recommendations for preventing infections and transmission. There were also increases in non-hospital healthcare-associated exposures (i.e., nursing homes). CDC will continue to provide support, technical expertise, and resources to public health and healthcare partners to reduce MRSA and CLABSI infections across healthcare settings.

Vector-Borne Diseases

Performance measure for Long Term Objective: Protect Americans from Infectious Diseases—Vector-borne

Measure	Most Recent and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
3.H Number of states that report tick surveillance data to CDC’s vector surveillance system (ArboNET) (Output)	FY 2020: 15 Target: 10 (Target exceeded)	15	20	+5

Performance Trends: CDC serves as a national and international leader in the prevention of vector-borne viral, bacterial, and rickettsial diseases. Since 2004, reported vector-borne disease cases tripled, with ten new vector-borne germs discovered or introduced in the U.S., seven of which were tickborne. Additionally, approximately three-quarters of reported vector-borne disease cases are tickborne disease cases. This measure reflects state capacity to conduct tick surveillance, which is a vital component to preventing and controlling tickborne disease and one of the core competencies for prevention and control. Vector surveillance allows public health departments to know which vectors are present in their area, which informs the selection and implementation of vector-borne disease prevention programs.

In FY 2020, CDC exceeded the target of having 10 states reporting tick surveillance data to CDC's vector surveillance system. A total of 15 states reported tick surveillance data to CDC in FY 2020, hitting the FY 2021 target a year early. This more rapid success can be attributed to increases in FY 2019 and FY 2020 CDC funding to states to support vector surveillance and an increase in CDC's technical assistance to states interested and willing to increase their tick surveillance and report these data to CDC.

³⁷⁸ <http://www.nejm.org/doi/full/10.1056/NEJMoa1408913>.

³⁷⁹ https://obamawhitehouse.archives.gov/sites/default/files/docs/national_action_plan_for_combating_antibiotic-resistant_bacteria.pdf

Antibiotic Resistance

Performance measure for Long Term Objective: Reduce the spread of antimicrobial resistance

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
3.2.3a Maintain the proportion of all <i>E. coli</i> or <i>Klebsiella spp.</i> that are carbapenem-resistant, causing CLABSI or CAUTI in adult intensive care units (ICUs) at ≤7% (Outcome)	FY 2019: 1.9% Target: 7.0% (Target Exceeded)	7.0%	7.0%	Maintain
3.2.4b Reduction in hospital-onset <i>Clostridioides difficile</i> infections standardized infection ratio (SIR) (Outcome)	FY 2019: 0.58 Target: 0.70 (Target Exceeded)	0.60	0.50	-0.10

Performance Trends: CDC is a leader in the fight to combat antibiotic resistance. CDC is committed to protecting America's health, safety, and interests through science, surveillance, and services. Antibiotic resistance (AR) is a growing crisis internationally, and some AR infections are already untreatable.

Carbapenem-resistant Enterobacteriaceae (CRE), “the nightmare bacteria,” are a group of bacteria resistant to almost all drugs. Because of limited treatment options, CRE bloodstream infections can be fatal in nearly half of all cases. In FY 2019, the proportion of all *E. coli* or *Klebsiella spp.* that are carbapenem-resistant causing CLABSI or CAUTI in adult patients was 1.9% (Measure 3.2.3a). This continues the trend of slight annual improvement from the FY 2015 baseline of 3.1%. These results may have been due to CDC's ongoing prevention efforts to prevent infections and contain the spread of resistant pathogens quickly across hospitals and other healthcare settings. With CDC's AR Solutions Initiative, CDC initiated a new Containment Strategy and has also made recent investments to better detect, track, and respond to CRE infections at the state and local levels.

Clostridioides difficile infection (CDI)³⁸⁰ is a preventable, life-threatening bacterial infection that can occur in both inpatient and outpatient healthcare settings. Infections occur most often in people who have taken antibiotics for other health conditions. CDC provides data-driven strategies and tools for targeted intervention to the healthcare community to help prevent CDI, as well as resources to help the public safeguard their own health. These strategies to reduce CDI include improving antibiotic use, infection control, and healthcare facility cleaning and disinfection. CDI prevention is a national priority, with a 2020 target to reduce CDI overall by 50% in the National Action Plan for CARB and reduce hospital-onset CDI by 30% in the current National HAI Action Plan³⁸¹. In FY 2019, the SIR for hospital-onset CDI was 0.58 (Measure 3.2.4b), exceeding not just the 2019 target, but also surpassing the 2020 HAI Action Plan CDI goal. CDC is also on track to meet the 2020 National Action Plan for CARB target for CDI. The current FY 2022 target reflects CDC's efforts to expand on prevention efforts to continue these decreases.

³⁸⁰ <http://www.nejm.org/doi/full/10.1056/NEJMoa1408913>.

³⁸¹ <https://health.gov/hcq/prevent-hai-action-plan.asp>.

Food Safety

Performance measures for Long Term Objective: Protect Americans from infectious diseases – foodborne illnesses

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
3.C Increase the epidemiologic capacity of OutbreakNet recipients for <i>Salmonella</i> , <i>Listeria</i> , and <i>Shiga</i> Toxin-producing <i>E. coli</i> (STEC), surveillance and outbreak investigations (Output)	FY 2019: 68.8% Target: 75% (Target Not Met)	80%	85%	+5
3.D Percentage of isolates of priority PulseNet pathogens (<i>Salmonella</i> , <i>Shiga</i> toxin-producing <i>E. coli</i> , and <i>Listeria monocytogenes</i>) sequenced and uploaded to the PulseNet National Database (Output)	FY 2019: 77% Target: 65 (Target Exceeded)	75%	80%	+5
3.E Increase the percentage of cases with positive culture-independent diagnostic tests (CIDTs) for <i>Shiga</i> toxin-producing <i>E.coli</i> (STEC) and culture isolation attempted or specimen metagenomics obtained (Output)	FY 2019: 83.7% Target: 88.5% (Target Not Met)	90%	90%	Maintain
3.F Cumulative number of states providing reports of confirmed norovirus outbreaks to CaliciNet (Output)	FY 2020: 30 Target: 30 (Target Met)	30	30	Maintain

Performance Trends: CDC estimates the burden of foodborne disease in the U.S. to be approximately 48 million cases per year (one out of every six Americans), 128,000 hospitalizations, and 3,000 deaths per year. Foodborne disease is mostly preventable, but controlling and preventing outbreaks requires that we understand the foods and settings that cause illness. Fast and effective outbreak investigations are needed to identify and remove contaminated food from the market to prevent additional illnesses and improve the safety of the nation’s food supply.

In 2019, the standard method for outbreak detection in PulseNet changed to whole-genome sequencing (WGS) of bacteria in food that cause human illness. Tracking the progress of this new method is important because the degree to which it is adopted affects the sensitivity of outbreak detection, and multiple trends could affect PulseNet’s ability to detect outbreaks in a positive or negative direction. Data indicates in FY 2019, 77% of isolates of priority PulseNet pathogens (*Salmonella*, *Shiga* toxin-producing *E. coli*, and *Listeria monocytogenes*) were sequenced and uploaded to the PulseNet National Database (Measure 3.D).

With the change in PulseNet to use WGS to detect foodborne outbreaks, CDC expects to see an increase in suspected clusters of foodborne disease, which, in turn, will need to be interviewed in order to determine if they are part of an outbreak. CDC invests in improving interview capacity in state and local health departments in order to also improve the availability of data for multistate foodborne outbreak investigations. Tracking state epidemiologic interview capacity is important to help identify and address challenges in the availability of epidemiologic data critical for multistate foodborne outbreak investigations. The FY 2019 result of 66.8% of cases interviewed in multistate outbreaks of *Salmonella*, *Listeria*, and STEC (Measure 3.C) is below the FY 2019 target (75%) and may indicate a lack of staffing capacity to conduct all interviews. Additionally, cases may have been lost to follow-up or refused to be interviewed with a supplemental questionnaire.

Recent changes in diagnostic practices at clinical laboratories across the United States to more culture-independent methods is challenging CDC's ability to find outbreaks and monitor disease trends. Culture-independent diagnostic tests (CIDTs) are commonly used by physicians to rapidly diagnose their patients' diseases. These tests do not provide the data needed by CDC to link cases to outbreaks unless laboratories perform additional testing to isolate cultures, a process called reflex culture. Tracking the increased use of CIDTs and the proportion of specimens for which reflex culture is performed is important to better understand surveillance data on enteric bacteria, identify foodborne disease outbreaks, and inform program decisions.

FY 2019 data show 83.7% of cases with positive CIDTs for STEC and culture isolation were attempted or specimen metagenomics were obtained (Measure 3.E). While this is a slight improvement compared to last year, it is below the FY 2019 target, and possibly indicates a lack of resources for state and local health departments related to reflex culture procedures.

CDC uses the CaliciNet³⁸² national surveillance system to detect and characterize norovirus outbreaks by supporting state and territorial public health laboratories. In FY 2020 CDC met its target of 30 states providing confirmed norovirus outbreak data to CaliciNet. Additionally, data from the combined testing efforts of an additional 20 state public health labs and the CaliciNet Regional Support Centers assure national coverage by CaliciNet for all 50 states (Measure 3.F).

National Healthcare Safety Network

Performance measure for National Healthcare Safety Network

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
3.3.4 Increase the number of hospitals and other selected health care settings that report into the National Healthcare Safety Network (NHSN) (Output)	FY 2020: 37,000 Target: 23,000 (Target Exceeded)	23,000	36,000	+13,000

Performance Trends: CDC's National Healthcare Safety Network (NHSN) is the nation's most comprehensive and widely used HAI surveillance and quality improvement system. NHSN data drive HAI prevention and improve quality of care at local, state, and national levels, supporting goals mentioned in the National Action Plan for CARB, and the HHS HAI Action Plan to protect American lives. NHSN data are also used by the following partners:

- Healthcare professionals to improve the quality of patient care,
- State health departments to comply with state reporting requirements and to target HAI prevention efforts,
- The Centers for Medicare and Medicaid Services (CMS) to implement and tailor interventions through CMS' improvement programs (e.g., Quality Improvement Networks and Hospital Improvement Innovation Networks) to prevent infections in all healthcare settings, and
- The Agency for Healthcare Research and Quality to evaluate HAI implementation strategies in healthcare.
-

CDC continues to enroll and provide support for healthcare facilities in NHSN to report HAIs, including those caused by resistant bacteria. In FY 2019, CDC exceeded its target for the number of hospitals and other selected healthcare settings that report into NHSN. However, there were not sufficient increases in nursing homes to meet the FY 2019

³⁸²<http://www.cdc.gov/norovirus/reporting/calicinet/>.

target. To provide essential data for the COVID-19 response, CDC developed additional reporting modules for both hospitals and nursing homes. Following the enactment of CMS COVID-19 reporting requirements for nursing homes, as of January 2021, there are over 37,000 facilities reporting patient safety and/or COVID-19 data in NHSN (Measure 3.3.4). This includes all hospitals, over 7,700 dialysis facilities, over 4,600 outpatient clinics, and over 17,700 nursing homes and other long term care facilities. Thus, the number of facilities enrolled and reporting to NHSN have exceeded both targets for FY 2020 and FY 2021. In addition, CDC tracks the whole scope of critical HAIs/AR infections (e.g., MRSA, CLABSI, CAUTI, SSI, and CDI) being captured in NHSN by healthcare facilities as well as the number of reporting modules (e.g., antibiotic use and antibiotic resistance data) being used across multiple healthcare settings to prevent infections, enhance healthcare quality, and improve patient care. CDC continues efforts to modernize NHSN and increase its value to providers and partners. FY 2022 targets were chosen to encourage continued participation of nursing homes in other NHSN patient safety modules, in addition to their newly mandated participation in COVID-19 reporting modules. However, additional changes to state and CMS quality reporting requirements and programs could lead to changes in the number of facilities participating in NHSN.

Quarantine and Migration

Performance measures for Long Term Objective: Prevent the importation of infectious diseases to the U.S. in mobile human, animal and cargo populations

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
3.4.8 Increase the proportion of U.S.-bound refugees with at least one dose of age-appropriate routine vaccinations ¹ (Outcome)	FY 2019: 98% Target: 73% (Target Exceeded)	75%	85%	+10
3.4.9 Increase the number of U.S. ports of entry that have demonstrated a validated capability to respond to a communicable disease event involving mobile populations (Output)	FY 2020: 30 Target: 37 (Target Not Met)	43	49	+6
3.B Increase the percentage of panel sites that use the eMedical system to transfer immigrant medical exam data to CDC (Output)	FY 2020: 83% Target: 30% (Target Exceeded)	93%	93%	Maintain

¹ Measure 3.4.8 only assesses the proportion of refugees that receive at least one round of required vaccinations; it does not track parasitic treatment.

Performance Trends: CDC enhances the public health security of U.S. communities and addresses infectious disease risks associated with international travel and globally mobile populations by executing regulatory responsibilities and implementing cost-effective public health programs, in collaboration with local, state, and federal partners, to prevent the importation and spread of disease into and within the United States.

Improving refugee vaccination prior to resettlement is a key public health priority for CDC as it is cost-effective, prevents the importation of infectious diseases, and improves the public health security of U.S. communities. CDC, through partners in the International Organization for Migration, increased the proportion of U.S.-bound refugees who received at least one dose of age-appropriate routine vaccination to 98% in FY 2019 (Measure 3.4.8). This increase reflects the successful expansion of activities to all countries that processed U.S.-bound refugees in FY 2019. Future targets reflect the objective to ensure that this program reaches every eligible refugee, and to provide additional vaccinations to refugees currently covered by the program, recognizing the cost-effectiveness and public health value of increasing the proportion of all vaccination services being delivered prior to arrival in the United States.

There are over 320 Department of Homeland Security-designated air, sea, and land ports of entry into the United States. CDC Quarantine Stations are strategically located at 20 ports of entry and land-border crossings that cover approximately 80% of arriving international travelers. Prior to FY 2018, developing a validated capability to respond to a communicable disease event involving mobile populations was concentrated at the 20 U.S. ports of entry that have a CDC Quarantine Station with staff available to respond to a communicable disease event (baseline). However, not all communicable disease responses take place in airports where quarantine stations are located.

In FY 2020, CDC expanded its multi-year strategic focus of developing a validated response to a communicable disease event capability at sub ports across the nation. Given the COVID-19 pandemic, CDC worked closely with partners across quarantine station jurisdictions to respond to numerous contact investigations and ill traveler requests. Each station's jurisdiction covers numerous sub-ports to ensure full public health coverage for all U.S. ports of entry for arriving international travelers. Quarantine station officials often need to direct the public health response remotely, usually via emergency medical service units and local public health authorities, working closely with other ports in their respective jurisdictions and state and local public health partners. Quarantine station officials are available 24/7 and rapidly respond to ensure appropriate public health action to prevent further spread of communicable diseases.

Performing this task is made more effective, efficient, and resilient over time if sub-ports are able to demonstrate a validated public health response capability. In FY 2020, the number of U.S. ports of entry (POEs) that demonstrated a validated capability to respond to a communicable disease event involving mobile populations remained level at 30 (Measure 3.4.9). The resources required to respond to the 2019-20 COVID-19 pandemic limited the availability of subject matter expertise and field capacity to reach the target. To address this shortfall, CDC is investigating the implementation of a "priority sub port" strategy based on travel volume, current plans development status, and repatriation port status to target POEs nearing a validated capability; and identifying and recruiting advocates at each Quarantine Station POE to serve as the lead for validating capabilities within their respective jurisdictions. CDC is also evaluating the possibility of leveraging the COVID-19 response, depending on the availability of CDC and local resources, to determine if any sub-ports engaged in the response would be amenable to an After Action Review that would demonstrate a validated capability.

In FY 2020, 83% of panel sites (245 of 296) used the eMedical system to transfer at least one digital immigrant medical exam to CDC, compared to 20% in FY 2019 (Measure 3.B). CDC's target is to increase this by 10% for FY 2021 and maintain that level for FY 2022. The denominator, the number of panel sites that have an agreement with the Department of State, may vary slightly year to year as new sites are added or current sites are cut or withdraw from their agreements, in FY 2020, seven panel sites were added.

CHRONIC DISEASE PREVENTION AND HEALTH PROMOTION

Chronic diseases are the leading causes of death and disability in the United States, and account for 70% of all deaths annually (almost 1.7 million). These diseases also cause major limitations in daily living for approximately one out of every ten people. The contextual indicators below track long-term health outcomes influenced by CDC's Chronic Disease Prevention and Health Promotion program.

Contextual Indicator	Most Recent Result	FY 2025 Target ¹
Coronary Heart Disease: Reduce the annual age-adjusted rate of coronary heart disease deaths (per 100,000 population)	FY 2018: 90.9	83.6
Stroke: Reduce the annual age-adjusted rate of stroke deaths (per 100,000 population)	FY 2018: 37.1	35.7
Diabetes: Reduce the annual age-adjusted rate of diabetes-related deaths (per 100,000 population)	FY 2018: 69.1	66.6

¹Targets may be adjusted to align with Healthy People 2030 targets.

Over the past decade, CDC has worked to improve cardiovascular health and reduce coronary heart disease and stroke mortality through its support of cross-cutting public health strategies and leveraging resources to develop partnerships that promote healthy lifestyle behaviors, environments and communities. CDC has also established relationships between clinical practices and the community to improve healthcare quality.

From 2000 to 2018, the annual age-adjusted death rate for coronary heart disease declined from 186.9 to 90.9 per 100,000. During the same time frame, the annual age-adjusted rate of stroke deaths declined from 60.8 to 37.1 per 100,000. From 2007 to 2018, the age-adjusted rate of diabetes-related deaths also declined from 74.0 to 69.1 per 100,000.

CDC contributes to these successes by addressing multiple contributing factors including reductions in per capita cigarette smoking, improvements in the integration of clinical and other preventive services, expansion of clinical and community-based resources, support for self-management of chronic diseases and conditions, and advancement of environmental approaches to promote health and reinforce healthy behaviors. CDC's inter-related programs in chronic disease focus not only on specific diseases, but also on those risk factors that contribute to chronic diseases and conditions at all stages of life.

Tobacco Prevention and Control

Performance Measures for Long Term Objective: Reduce death and disability due to tobacco use

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.6.2a Reduce the annual adult per-capita combustible tobacco consumption in the United States (Intermediate Outcome)	FY 2019: 1,004 Target: 903 (Target Not Met but Improved)	817	755	-62
4.6.3 Reduce the proportion of adults (aged 18 and over)	FY 2019: 14.0% Target: 12.8% (Target Not Met)	11.4%	10.7%	-0.7

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
who are current cigarette smokers (Intermediate Outcome)				
4.6.4 Increase proportion of the U.S. population that is covered by comprehensive state and/or local laws making workplaces, restaurants, and bars 100% smoke-free (no smoking allowed, no exceptions) (Intermediate Outcome)	FY 2019: 61.0% Target: 61.1% (Target Not Met but Improved)	65.2%	67.2%	+2.0
4.6.5a Reduce the proportion of adolescents grades 6 through 12 who are current users of any tobacco product (Outcome)	FY 2019: 23.0% Target: 13.6% (Target Not Met)	13.6%	13.6%	Maintain
4.6.8 Increase the proportion of ever cigarette smokers aged ≥ 18 years who are former cigarette smokers (quit ratio) (Outcome)	FY 2019: 61.7% Target: 62.4% (Target Not Met)	65.2%	66.3%	+1.1

Performance Trends: Although cigarette smoking remains the leading cause of preventable disease and death in the United States, the tobacco product use landscape continues to diversify to include multiple combustible tobacco products, including cigars, cigarillos and little cigars, pipe tobacco, roll-your-own tobacco, and hookah. Per capita combustible tobacco product consumption continued to decline from 1,061 cigarette equivalents in FY 2018 to 1,004 cigarette equivalents in FY 2019, nearly reaching the FY 2019 target (Measure 4.6.2a). Additionally, the percentage of adults who currently smoked cigarettes decreased from 20.6% in 2009 to 14.0% in FY 2019, an increase from 13.7% in FY 2018 (Measure 4.6.3).

Nearly all tobacco product use begins during youth and young adulthood. Youth use of tobacco products in any form is unsafe, irrespective of whether it is smoked, smokeless, or electronic. In 2019, an estimated 6.2 million (23%) U.S. middle and high school students currently used any tobacco product, with nearly 2.0 million reporting current use of ≥2 tobacco products (Measure 4.6.5a). Driven by an increase in e-cigarette use, current tobacco product use significantly increased among high school and middle school students during 2017–2018, erasing the decline in overall tobacco product use among youths that occurred in previous years. In 2020, 19.6% of high school

students and 4.7% of middle school students currently used e-cigarettes.³⁸³ CDC efforts to address the increase in tobacco use among youth include 1) continuing to monitor tobacco use trends, including through the National Youth Tobacco Survey; 2) educating the public about the risks e-cigarette use; and 3) supporting state and local tobacco prevention and control efforts through the National Tobacco Control Program. CDC will continue to work to decrease the proportion of adolescents who use tobacco products and will keep FY 2022 targets level with previous year's achievements in decreasing tobacco use.

The adverse health effects of tobacco smoking are not limited to the user. Exposure to secondhand smoke from burning tobacco products causes significant disease and death; there is no risk-free level of secondhand smoke exposure.

Between FY 2005 and FY 2018, the percentage of the population covered by comprehensive smoke-free laws that prohibit smoking in all indoor areas of bars, restaurants, and private worksites more than tripled. As of December 2019, 61% of all U.S. residents are covered by comprehensive smoke-free laws at the state or local level (Measure 4.6.4), slightly missing the FY 2019 target, but increasing over FY 2018. While progress has been made, 39% of the population is still not protected by state or local level comprehensive laws prohibiting smoking in all indoor areas of bars, restaurants, and private worksites; moreover, only 27 states, American Samoa, the District of Columbia, the Marshall Islands, Puerto Rico and the U.S. Virgin Islands have adopted such laws as of June 30, 2020.

CDC will continue to supply credible evidence showing the dangers of secondhand smoke, as well as proven interventions to reduce exposure, which provide a strong foundation for state and community efforts to promote smoke-free environments. CDC research contributes to the evidence base that informs the activities of CDC's National Tobacco Control Program (NTCP), a nationwide investment that supports all 50 states, the District of Columbia, eight U.S. territories, and 12 tribal organizations for comprehensive tobacco control efforts including reducing secondhand smoke exposure.

CDC also provides direct assistance to help tobacco smokers quit through 1-800-QUIT-NOW. In March 2012, CDC launched the first-ever paid, national tobacco education campaign, Tips from Former Smokers® (Tips®). The Tips® campaign profiles real people who are living with serious long-term health effects due to smoking and secondhand smoke exposure.

Quitline calls to 1-800-QUIT-NOW increased substantially when Tips® ads tagged with 1-800-QUIT-NOW were on the air. From 2012-2018, the Tips® campaign was associated with an increase of more than 1.3 million additional quitline calls to 1-800-QUIT-NOW when the campaign was on air. That is an increase of 72.2% compared to weeks when Tips® was not on air. During the 28-week 2020 Tips® campaign (which included three weeks at the start of the campaign when the Tips® ads were tagged with the Tips® campaign website instead of 1-800-QUIT-NOW and three weeks with holidays when the Tips® ads were paused), there were a total of about 305,000 calls to 1-800-QUIT-NOW. A total of about 51,000 of these calls were attributable to the Tips® campaign. The average weekly call volume during the campaign was up by about 20% compared to the average weekly call volume during the three weeks preceding the campaign. During the 22 weeks of the campaign when the ads were airing and were tagged with 1-800-QUIT-NOW, the average weekly call volume was up by just over 29% compared to that same baseline.

Recent findings indicate that the quit ratio, or the proportion of ever cigarette smokers ≥18 years who are former cigarette smokers, has remained steady in recent years. In FY 2019 the quit ratio was 61.7% (Measure 4.6.8). CDC will continue to provide resources to state quitlines, as well as state tobacco control programs, as part of its National Tobacco Control Program. CDC will continue the Tips from Former Smokers® campaign on national TV, radio, print, digital, and out-of-home media.

³⁸³ Wang TW, Neff LJ, Park-Lee E, Ren C, Cullen KA, King BA. E-cigarette Use Among Middle and High School Students — United States, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69:1310–1312. DOI: <http://dx.doi.org/10.15585/mmwr.mm6937e1>.

Nutrition, Physical Activity, and Obesity

Performance Measures for Long Term Objective: Promote evidence-based interventions to improve nutrition, increase physical activity, and reduce obesity

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.11.7 Increase the proportion of infants that are breastfed at 6 months (Intermediate Outcome)	FY 2017: 58.3% Target: 62.2% (Target Not Met)	65.6%	65.7%	0.1%
4.11.8a Increase the contribution of vegetables to the diets of the population aged 2-18 years (cup equivalents per 1,000 calories) ¹ (Intermediate Outcome)	FY 2018: 0.49 Target: 0.78 (Target Not Met)	N/A	0.82	N/A
4.11.8b Increase the contribution of vegetables to the population aged 19 years and older (cup equivalents per 1,000 calories) ¹ (Intermediate Outcome)	FY 2018: 0.80 Target: 0.94 (Target Not Met)	N/A	1.02	N/A
4.11.9 Increase the proportion of adults (age 18 and older) that engage in leisure-time physical activity (Intermediate Outcome)	FY 2018: 74.6% Target: 73.8% (Target Exceeded)	N/A	75.0%	N/A
4.11.10a Reduce the age-adjusted proportion of adults (age 20 years and older) who have obesity ^{1,2} (Intermediate Outcome)	FY 2018: 42.4 % Target: 33.0% (Target Not Met)	N/A	32.3%	N/A
4.11.10b Reduce the proportion of children and adolescents (ages 2 through 19) who have obesity ^{1,2} (Intermediate Outcome)	FY 2018: 19.3% Target: 15.2% (Target Not Met)	N/A	14.7%	N/A
4.U Increase the average percentage of obesity prevention	FY 2019: 29.8% Target: 29.5% (Target Exceeded)	31.5%	32.5%	1.0

standards fully met across states for licensed Early Care and Education (ECE) centers (Output)				
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¹ Targets and results are set and reported biennially.

² Measure language revised slightly to more accurately describe the measure. Data has not changed.

Performance Trends: Breastfeeding: The proportion of infants that are breastfed at six months (Measure 4.11.7) increased from 46.6% in 2009 to 58.3% in 2017, missing the target of 62.2%, but demonstrating progress over time. To meet its targets, CDC will continue to support birthing hospitals, worksites, and communities in implementing policies and practices that help women breastfeed, and address racial disparities in breastfeeding with a focus on continuity of care. CDC funds states, communities, and organizations with national reach to improve access to support breastfeeding. These investments have contributed to improvements in initiation and duration of breastfeeding. Additional improvements in hospital support for breastfeeding have led to over 1 million babies per year (29%) born in hospitals implementing practices supportive of breastfeeding. These births occur at over 600 hospitals across 50 states, Washington, D.C., and Puerto Rico.

Early Care and Education (ECE): Annually, 41% of children (birth through 5 years) are cared for by someone other than their parents in center-based or family home-based childcare. There are national standards for physical activity and nutrition for the ECE setting. Measure 4.U captures the extent to which the nation is making progress toward all 47 high-impact obesity prevention standards, including healthy weight best practices in infant feeding, nutrition, and physical activity/screen time. The average percentage of obesity prevention standards fully met across states for licensed ECE centers has increased from 20.5% in FY 2016 to 29.8% in FY 2019. As of September 2020, CDC expanded funding and direct technical assistance to 28 states to work on specific activities designed to have statewide impact through embedding nutrition and physical activity standards or implementation supports for these standards into their state ECE system.

CDC also supports professional development opportunities for ECE providers through the development of on-demand online training modules in partnership with Penn State University's Better Kid Care (BKC) program. In FY 2018, eight new modules were created, bringing the total number of nutrition and physical activity-related modules that CDC supports on the BKC professional development system³⁸⁴ to 15 to support ECE providers. CDC has been tracking the ECE providers uptake of these modules. ECE providers achieved a cumulative total of 61,514 training hours for fiscal years 2017-2020 from these 15 modules.

Healthy Eating: The total vegetable intake remains low for all populations. Data indicate in 2017-2018 children age 2-18 years consumed 0.49 cup equivalents of vegetables per 1,000 calories and adults consumed 0.80 cup equivalents per 1,000 calories (Measures 4.11.8a-b). Making progress in improving diet is challenging given the complex and multiple factors that influence the marketing of, access to, affordability of, and consumption of both healthy and less healthy food options. CDC will continue to work with state, local, tribal, and territorial health departments to help worksites, schools, childcare, and community settings to support access to healthy food and beverage choices for people of all ages.

Active Living: The proportion of adults who engage in leisure-time physical activity increased from 63.8% in FY 2008 to 74.6% in FY 2018 (Measure 4.11.9). The proportion of adults that meet current aerobic physical activity guidelines increased from 43.5% in 2008 to 54.2% in 2018, reducing the risk for many chronic diseases. CDC's Active People, Healthy NationSM is a national initiative to help 27 million Americans become more physically active by 2027. CDC funds states, communities, and organizations with national reach to design communities that are safe and easy for people of all ages and abilities to be physically active. In addition, CDC trains states and communities to implement strategies to improve the walkability of communities. For example, the CDC funded Walkability

³⁸⁴<http://extension.psu.edu/youth/betterkidcare/early-care>.

Action Institute has trained 51 teams that potentially reach over 40 million people. CDC will continue to promote the critical need for safe and easy places for physical activity to take place and help implement high impact strategies for walking and walkable communities like Complete Streets and Safe Routes to Schools. As of July 2020, over 1,600 Complete Streets policies, including those adopted by 35 state governments, the Commonwealth of Puerto Rico, and the District of Columbia, have been reported to the National Complete Streets Coalition.

Obesity: CDC funds a number of interventions that target obesity as well as other related chronic diseases. The percentage of all children and adolescents (ages two to 19 years) that have obesity was 16.8% in FY 2008 and 19.3% in FY 2018 (Measure 4.11.10b). There has been progress among children from lower-income families enrolled in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). Among children age two through four years enrolled in WIC, obesity declined from 15.9% in 2010 to 13.9% in 2016, and then increased to 14.4% in 2018. Research shows behaviors that influence excess weight gain include early infant weight gain, lack of responsive feeding approaches, eating high-calorie, low-nutrient foods and beverages, not getting enough physical activity, sedentary activities such as watching television or other screen devices, medication use, and sleep routines. Public health and healthcare practitioners can educate individuals about healthy lifestyle choices and ways to improve their diet and increase physical activity. However, it can be difficult for many children and parents to make healthy food choices and get enough physical activity due to underlying social determinants of health (e.g., housing insecurity, food insecurity, education, poverty). Places such as childcare centers, schools, worksites, or communities can affect diet and activity through the foods and drinks offered and the opportunities provided for physical activity. CDC will continue promoting good nutrition and physical activity in children and adolescents, caregivers, and individuals to help prevent obesity.

In addition, through initiatives such as the Childhood Obesity Research Demonstration (CORD) project, CDC will continue to study and promote ways to prevent childhood obesity and its consequences. For the first phase of the project, CORD 1.0, CDC examined whether a multi-level, multisector, coordinated strategy involving primary care and evidence-based public health interventions could help low-income children and their families increase healthier behaviors and prevent and manage obesity. CORD 2.0 tested a model of implementing quality weight management interventions for low-income children and families with an emphasis on assessing unmet social needs. For CORD 3.0, CDC is further increasing the availability and number of packaged, effective pediatric weight management interventions for children from lower-income families. CORD 3.0 funds five recipients for five years (Funding Period 2019-2024). During this phase, CDC will provide technical expertise and support to researchers to package their existing effective family-centered programs for use among low-income families through community sites that are feasible, convenient, and acceptable to diverse families. This will include testing the packages in additional sites for comparable outcomes. Community sites may include federally qualified health centers (FQHCs), community health centers, and clinics.

In adults, National Health and Nutrition Examination Survey (NHANES) data show 42.4% had obesity in 2017-2018 (Measure 4.11.10a). There are some community factors that affect diet and physical activity. They include the affordability and availability of healthy food options (e.g. fruits and vegetables, whole grains, lean proteins), peer and social supports, marketing and promotion, and policies that determine whether a community is designed to support healthy food access and physical activity. CDC will continue to support recipients in implementing evidence-based strategies to help increase healthy eating and active living through partnerships with states, territories, tribes, and communities throughout the U.S.

School Health

Performance Measures for Long-Term Objective: Improve the health and well-being of youth and prepare them to be healthy adults

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.12.5 Increase the number of states that have developed and adopted a state-level multi-component physical education policy for schools ¹ (Output)	FY 2016: 15 Target: 12 (Target Exceeded)	N/A	20	N/A
4.12.6 Increase the percentage of schools that do not sell less healthy foods and beverages (soda pop or fruit drinks, baked goods, salty snacks, candy) ¹ (Outcome)	FY 2018: 67% Target: 69% (Target Not Met)	N/A	72%	N/A

¹ Targets and results are set and reported biennially.

Performance Trends: Obesity rates among school-aged children and adolescents have more than tripled since 1980. The prevalence of obesity is higher among youth aged 6-11 years (18.4%) and adolescents aged 12-19 years (20.6%) compared with children aged two to five years (13.9%). The 2019 Youth Risk Behavior Survey shows that approximately 32% of high school students have the weight status of overweight or obesity, demonstrating the need for CDC’s Healthy Schools Program’s continued focus on childhood obesity prevention. Most of our nation’s children attend school for six hours a day and consume as much as half of their daily calories at school, making schools an essential setting to reverse the steady increase in childhood obesity and to promote health for all students. CDC promotes effective strategies including establishing a Comprehensive School Physical Activity Program with physical education as the foundation, supporting healthy eating in schools through a Comprehensive Framework and improving school health services to address obesity and other chronic conditions. During the COVID-19 pandemic, CDC is assisting states, school districts and school-level staff that are implementing virtual learning to adapt healthy eating and physical activity strategies to support student development at home. In addition, CDC provides a virtual school demonstrating health promoting practices and policies and a robust e-learning platform to support continued professional development for teachers and administrators. Finally, CDC also provides an online portal and training for school health teams to use the School Health Index to assess their health-promoting policies and practices and provide recommendations for improvements.

Physical Education: The Task Force on Community Preventive Services recommends enhanced, school-based physical education as an effective strategy for increasing physical activity among students. Physical education classes increase students’ daily moderate to vigorous physical activity and therefore help children and adolescents meet daily physical activity recommendations. Measure 4.12.5 tracks the establishment of policies that align with CDC’s School Health Guidelines to Promote Healthy Eating and Physical Activity and the recommendations of the American Heart Association and SHAPE America. In FY 2016, 15 states established the requisite number and composition of multi-component policies, exceeding CDC’s target of twelve states.

Nutrition Environment: Students attending schools that sell high-calorie, low nutrient foods and beverages outside the school food service program have lower intake of fruits and vegetables and higher daily percentage of calories

from total fat and saturated fat³⁸⁵. Most children and adolescents do not meet recommendations for healthy eating (fruits, vegetables and dairy) and 40% of high school students are not eating even one vegetable each day (CDC YRBS, 2019). In Mississippi, for example, 16% of adolescents had not had one vegetable for the entire week prior to completing the survey. Measure 4.12.6 is based on Institute of Medicine (IOM) standards that exceed the U.S. Department of Agriculture (USDA) Smart Snacks standards, and tracks the percentage of schools limiting student purchases from vending machines, school stores, canteens, or snack bars to healthier snack foods and beverages. In FY 2018, 67% of secondary schools sold only nutritious foods outside of the school food service program. This represents a 10% increase from FY 2014 and is level with FY 2016 results. It did not meet the target of 70%. Contributing factors to stagnated improvement include new legislation proposed and new legislation passed but held in federal district court that impact and relax school nutrition standards leading to uncertainty at the state and local level for school implementation. Even though 33% of schools still allow the sale of some less healthy foods, student consumption of high-calorie, low nutrient beverages has improved. According to the YRBS, secondary students that had at least one soda per day was cut nearly in half from 29% in 2009 to 15% in 2019 and consumption sports drinks at least once per day declined by 3% between 2015 and 2019. Of 43 states that reported data in 2018, the proportion of schools not selling less healthy food ranged from 48% in Georgia to 88% in Delaware. CDC will continue to work with State Education Agencies to identify and addresses challenges to increasing healthy food options and factors contributing to success in providing healthy food options in our nation's schools.

Heart Disease and Stroke

Performance Measures for Long Term Objective: Reduce risk factors associated with heart disease and stroke

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.11.5a: Increase the proportion of persons 18+ in the U.S. population with high blood pressure who have it under control (<140/90) (Outcome)	FY 2018: 37.9% Target: 58.6% (Target Not Met)	N/A	60.8%	N/A
4.N1 Increase the percentage of at risk WISEWOMAN participants who received at least one evidence-based healthy behavior support service (Output)	FY 2018: 82.0% Target: 60.0% (Target Exceeded)	62%	62%	Maintain
4.N2 Increase the number of evidence-based behavioral support services provided to WISEWOMAN participants (Output)	FY 2018: 26,535 Target: 30,060 (Target Exceeded)	32,550	32,550	Maintain
4.11.14 Increase the proportion of persons aged 21 years and older in the US	FY 2016: 52.3% (Baseline)	N/A	55.2%	N/A

³⁸⁵ https://www.cdc.gov/healthyouth/data/profiles/pdf/2016/2016_Profiles_Report.pdf.

population, for whom therapy is recommended, that are using medication to manage their blood cholesterol (Outcome)				
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¹Targets and results are set and reported biennially.

Performance Trends: Hypertension affects one in three adults and is a modifiable risk factor for heart disease, stroke, and other chronic diseases. Hypertension contributes to one out of every seven deaths in the U.S., including just over a quarter of all cardiovascular disease-related deaths. CDC has revised its measure for the proportion of Americans age 18 or older with hypertension who have it under control (Measure 4.11.5). The previous measure result was age-adjusted to the 2000 U.S. population. However, in most contexts CDC reports results that are not age-adjusted. To eliminate potential confusion, CDC has revised the measure to report results that are not age-adjusted. In FY 2018 there were 37.9% of persons 18+ in the U.S. population with high blood pressure who have it under control (<140/90) (Measure 4.11.5a).

For 2017-2018, the rate of blood pressure control among all U.S. adults 18 and older with hypertension reached 43.9%, down from 49.2% control in 2013-2014 and below the target of 56% (Measure 4.11.5a). The data suggest that younger men ages 18-39 had significantly lower rates of control compared to men over the age of 40. Potential reasons for this include continued increases in obesity and diabetes and lack of access to the healthcare system. To address these low rates of blood pressure control, prevention efforts will need to be directed to younger adults, especially men, and those individuals with obesity and/or diabetes.

CDC provides all 50 states and the District of Columbia with funding, expertise, and technical assistance to implement programs to improve cardiovascular health and improve blood pressure control statewide through proven, evidence-based strategies. These approaches include encouraging multidisciplinary team-based approaches to care, increasing the use of electronic health records and health IT to improve diagnosis of high blood pressure and patient follow-up, and promoting patient self-management of high blood pressure. Grantee states have seen success in these approaches. For example, Kentucky was able to improve its blood pressure control rates from 48% at baseline to 62% in year 5, beating its five year target of 53%. Participating health systems in CDC’s nationwide state program cover an estimated 31 million or more people.

In FY 2018, CDC initiated a five year cooperative agreement that provides funding to support state and local health departments to prevent and manage both cardiovascular disease and diabetes in high burden populations and communities. CDC also supports the design, testing, and evaluation of innovative state and local strategies. These strategies include exploring ways to incentivize reporting and promote the use of evidence-based quality measurement at the provider level, supporting the development and expansion of telehealth technology to promote management of hypertension and high blood cholesterol, and enhancing referral participation and adherence in cardiac rehabilitation programs in traditional, community, and home-based settings.

State heart disease and prevention programs funded by CDC are experiencing tremendous challenges due to COVID-19. Many state and local health department staff are being reassigned to COVID-19 response efforts, and many health departments are truncating, minimizing, or fully stopping direct efforts in which health department staff are involved or for which they are directly responsible. Additionally, many partner organizations are also lacking capacity to collaborate on programmatic initiatives. These challenges mean that programs are unlikely to achieve their typical strong results during FY 2019 and FY 2020. Long term impacts on the state programs will remain unknown until such time when state and local health departments, as well as their collaborative partnerships, have sufficiently recovered and are fully re-engaging in efforts to specifically address relevant Notice of Funding Opportunity (NOFO) outcomes. In the meantime, state and local health department programs funded by

CDC are working collaboratively with CDC and national partner subject matter experts to provide specialized technical assistance aimed at offering flexibilities, where appropriate, and developing plans for re-engagement for future implementation.

Within its first five-year cycle (2012-2016), CDC Million Hearts® prevented an estimated 135,000 heart attacks, strokes, and other related acute cardiovascular events and saved \$5.6 billion in direct medical costs. This past year, Million Hearts® supported the National Association of Community Health Centers (NACHC) to help more community health centers address undiagnosed hypertension, explore new ways to optimize use of cholesterol lowering medications for those at high risk, and implement evidence-based practices to improve blood pressure control for African Americans with diagnosed hypertension. Through these combined initiatives, participating health centers identified over 27,000 individuals with elevated blood pressures but no previous diagnosis of hypertension. Within 8 months (including during the COVID-19 pandemic), over 3,000 of these patients were recalled, diagnosed with hypertension, and benefited from Million Hearts® strategies and tools to improve their blood pressure outcomes. Health centers engaged in the cholesterol project discovered at-risk patients not on statins and drivers of statin underuse to target interventions. Initial implementation resulted in 2,260 new prescriptions in 12 months (including during the COVID-19 pandemic). In addition, over 20,000 African Americans with uncontrolled hypertension were identified and experienced, on average, a 10-mmHg reduction in systolic blood pressure, which translated into hundreds of cardiovascular events prevented. Collectively, 32 health centers engaged in these efforts, serving an adult population of over 570,000 individuals. These health centers belong to health center-controlled networks that plan to spread these interventions to 242 additional health centers serving over 3,500,000 additional adults.

CDC's Sodium Reduction in Communities Program currently funds eight recipients to develop practice-based evidence for effective sodium reduction strategies at the community level. In the first two years of the program, 159 food service organizations implemented nutrition guidelines, 151 food service organizations implemented environmental choice architecture, 1,688 products were replaced with a lower-sodium alternative, and 2,292 menu item recipes were modified to reduce sodium. Analyses from the conclusion of the 2013-2016 program shows that the ten Sodium Reduction in Communities Program recipients partnered with 455 organizations and reached over 2 million people. Among congregate meal sites, hospitals and worksite settings, the average sodium content of targeted foods or meals decreased by 35% (261 mg) from baseline. CDC is retiring its sodium consumption measure because while CDC's sodium reduction activities are meant to build the evidence base for what interventions work to reduce sodium consumption, the reach of these efforts is too limited to impact consumption on a national basis.

In FY 2018, CDC launched a five-year cooperative agreement with 21 state health departments and three tribal organizations receiving funding. For the first time, CDC included an innovation component that funds seven awardees to support the development and testing of innovative strategies to expand the reach and impact of the WISEWOMAN program. Awardees are implementing and evaluating innovative strategies designed to reduce risks, complications, and barriers to the prevention and control of heart disease and stroke and contribute to the evidence base to address CVD in underserved communities. These strategies emphasize targeting hard to reach women through engagement with local and community services and the application of bi-directional referrals, thus improving the exchange of information between providers and community-based organizations. In FY 2018, 82% of at-risk women (program participants) received at least one support service, an increase from FY 2017 and exceeding the target (Measure 4.N1). Recipients also provided 26,535 evidence-based healthy behavior support services to WISEWOMAN participants, just missing the FY 2018 target (Measure 4.N2).

WISEWOMAN is facing significant challenges from the COVID-19 pandemic as health systems, along with individual clinical providers halted National Breast and Cervical Cancer Early Detection Program (NBCCEDP)-sponsored breast and cervical cancer screenings in March 2020. This meant that providers associated with WISEWOMAN Programs were unable to engage in enrollment activities for potential new participants because NBCCEDP is solely responsible for determining participant eligibility through screening and navigation services. Additionally, WISEWOMAN Programs work collaboratively with NBCCEDP providers to implement a critical component of the

program model, the integrated office visit, wherein breast and cervical cancer navigation and screening activities are the core services being offered. FY 2022 targets remain flat as CDC cannot accurately predict when the Program will recover sufficiently to achieve its targets. Efforts to engage existing clients with referral and follow-up with healthy behavior support services for existing patients continue, but opportunities are limited despite the innovative ways Programs are attempting to remain connected with these participants.

CDC’s new strategic plan for preventing heart disease and stroke specifically lists reducing and controlling hypercholesterolemia (along with high blood pressure) as a primary goal. High cholesterol is a significant risk factor for cardiovascular disease, which is the #1 killer of Americans. CDC’s measure—to assess whether people for whom medication is recommended are actually on medication—is an effective way of showing progress towards control (Measure 4.11.14). Statins reduce the synthesis of cholesterol in the liver and are one of the most effective lipid lowering medications available. In 2013-2014 baseline data, 47.2% of persons aged 21 years and older, for whom therapy was recommended, were using medications to manage their blood cholesterol. The prevalence of persons using medication to manage their blood cholesterol reached 52.3% by 2015-16.

Diabetes

Performance Measures for Long Term Objective: Improve prevention, detection, and management of diabetes

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2020 ¹
4.11.12 Reduce the age-adjusted incidence of diagnosed diabetes per 1,000 among U.S. adults aged 18 to 84 (Outcome)	FY 2018: 6.4 Target: 7.2 (Target Exceeded)	5.6	5.6 ¹	Maintain
4.11.13 Increase the cumulative number of CDC recognized organizations achieving a minimum average weight loss of 5% in their participants (Outcome)	FY 2019: 631 Target: 620 (Target Exceeded)	750	750	Maintain
4.S Increase the annual number of people with at least one encounter at an ADA recognized or AADE accredited diabetes self-management education and support (DSMES) program (Output)	FY 2019: 975,417 Target: 1,107,128 (Target Not Met)	1,167,128	1,197,128	+30,000
4.T Increase the cumulative number of participants enrolled in CDC recognized organizations for the prevention of type 2 diabetes (Output)	FY 2019: 471,451 Target: 338,811 (Target Exceeded)	478,811	750,000	+271,189

¹ Targets updated to align with HP 2030.

Performance Trends: CDC estimates show more than 88 million American adults aged 18 years or older, or one in three adults, have prediabetes, and eight out of 10 people with prediabetes do not know they have it³⁸⁶. Without a structured intervention, many of these individuals will develop type 2 diabetes within five years³⁸⁷. CDC established the National Diabetes Prevention Program (National DPP) to address the growing epidemic of type 2 diabetes. The National DPP lifestyle change program is led by trained coaches who facilitate participants' strategies for eating a healthy diet, increasing physical activity, and developing coping skills. The Diabetes Prevention Program clinical trial showed that participants who engage in these lifestyle changes through a structured program can lose five to seven percent of their body weight and reduce development of type 2 diabetes by as much as 58% (71% for those 60 years of age and older).³⁸⁸

CDC's Diabetes Prevention Recognition Program serves as the quality assurance component of the National DPP, awarding CDC recognition to program delivery organizations that can meet national quality standards and achieve outcomes proven to prevent or delay the onset of type 2 diabetes. The CDC recognition program provides the national centralized collection of performance data for the National DPP. Through implementation of the National DPP, CDC aims to continue the reduction of the age-adjusted incidence of diagnosed type 2 diabetes among U.S. adults aged 18 to 84 (Measure 4.11.12). Although the national rate of diabetes incidence (6.4 new cases per 1,000 adults in 2018) has moved below the Healthy People 2020 target (7.2 new cases per 1,000 adults), FY 2021 & 2022 targets will align with recently published HP 2030 objectives (5.6 new cases per 1,000 adults). The continued growth of the diabetes burden in terms of absolute prevalence, lifetime risk, years spent with diabetes, and the incidence rate remaining considerably higher than it was in the 1990s, are all contributing factors indicating a need for continued large-scale prevention efforts like the National DPP.

Since February 2012, almost 500,000 people at high risk for developing type 2 diabetes have participated in the National DPP lifestyle change program across the U.S. Evaluated participants have lost an average of 5.5 percent of their body weight. To date, there are more than 1,700 CDC-recognized organizations offering the program in-person, online, and through distance learning. CDC aims to increase the total number of participants enrolled in recognized organizations by approximately 270,000 participants by March 31, 2023 (Measure 4.T), as well as maintain the number of CDC-recognized organizations achieving a minimum average weight loss of five percent in their eligible participants by 65 organizations per year (Measure 4.11.13). In FY 2019, there were 631 CDC recognized organizations achieving a minimum average weight loss of five percent in their eligible participants.

CDC supports state health departments and other stakeholder organizations in expanding access to the National DPP for populations at greatest risk for type 2 diabetes. Achieving insurance coverage is a critical step for increasing access to this highly effective program. As of November 2020, state health departments and other partners have secured health insurance coverage for the National DPP for nearly 5 million public employees and their dependents in 26 states. In addition, the National DPP lifestyle change program is currently a covered benefit for more than 2.2 million private sector employees and their dependents across 20 states, a 61% increase from 2018. As of November 2020, 17 states have approved coverage for eligible Medicaid beneficiaries and are in various stages of implementing the benefit

CDC's National DPP is the first preventive service model from the Centers for Medicare & Medicaid Services Innovation Center to become eligible for expansion—a landmark for public health. Approximately 24 million American adults with prediabetes 65 years or older could directly benefit from the Medicare Diabetes Prevention Program services, which became available in April 2018.

To increase awareness of prediabetes and diabetes, in 2016 CDC launched the first national prediabetes awareness campaign in the U.S. in partnership with the American Medical Association, American Diabetes Association, and Ad Council. The award-winning campaign features unique, lighthearted, and engaging public service announcements,

³⁸⁶ <https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf>.

³⁸⁷ <https://www.cdc.gov/diabetes/prevention/about-prediabetes.html>.

³⁸⁸ Targets and results are set and reported biennially.

materials, and messages that encourage people to visit DolHavePrediabetes.org to find out their risk for prediabetes. The campaign website features a 1-minute risk test, lifestyle tips, and links to prevention programs across the country that are recognized by CDC as part of the National DPP. Results of the prediabetes awareness campaign continue to far-exceed expectations. As a result of the ongoing campaign, millions of Americans continue to learn their risk for prediabetes and how to prevent or delay type 2 diabetes. As of November 2020, more than 3.5 million people had completed a prediabetes risk test as a result of the campaign. In addition, the campaign has documented 3.7 million unique visitors to the campaign website and 144,500 visits to the National DPP website to find a lifestyle change program. The campaign has received a total of \$128 million in donated ad equivalency support. Since the campaign launch, awareness of the term “prediabetes” has reached a high of 68% in 2020 (up from a 50% baseline in 2015) among English speakers nationally. Among Spanish speakers, awareness of the term reached a high of 82%, up from 53%.

CDC also strives to prevent diabetes complications through diabetes self-management education and support (DSMES). DSMES improves A1C levels and reduces healthcare costs by decreasing hospitalizations, hospital re-admissions, and emergency room visits among people with diabetes. CDC supports state health departments through a nationwide cooperative agreement to improve access to DSMES among people with diabetes, with an emphasis on DSMES programs that meet national quality standards. In 2019, approximately 2,271 DSMES programs were offered across the U.S., and nearly 1 million people with diabetes participate in an ADA-recognized or AADE-accredited program annually that met national quality standards. CDC aims to increase the number of programs in underserved areas by establishing new DSMES sites. In 2019, twenty-five recipients reported establishing 72 new DSMES sites in underserved areas by expanding locations that offer recognized/accredited DSMES programs. The number of people with at least one encounter at a recognized or accredited DSMES program in FY 2019 was 975,417, which did not meet the target (Measure 4.S). Common barriers to DSMES reported by state program recipients included: limited capacity to achieve accreditation/recognition; lack of or low reimbursement; unclear and inconsistent referral policies and lack of unified electronic referral system; reluctance of physicians to refer; and low participation due to program costs, transportation limitations, and access to programs. Although 92 new DSMES programs were established in 2019, 150 programs closed.

State recipients, with the support of training and technical assistance provided by CDC Project Officers and subject matter experts, have identified potential gaps and opportunities to engage in policy and systems-level work that could positively impact programs by reducing barriers to access and utilization in underserved areas; strengthen support for DSMES among health care systems, providers, insurers, and policy makers; improve DSMES coverage; and increase participation in recognized or accredited DSMES programs.

Through the new five year cooperative agreement (Improving the Health of Americans Through Prevention and Management of Diabetes and Heart Disease and Stroke), CDC is working with states to increase access to, participation in, and coverage for ADA-recognized/AADE-accredited programs and increase engagement of pharmacists in the provision of medication management or DSMES for people with diabetes. Strategies being implemented include: 1) Improving access to and participation in ADA-recognized/AADE-accredited DSMES programs in underserved areas; 2) Expanding or strengthening DSMES coverage policy among public or private insurers or employers; and 3) Increasing engagement of pharmacists in the provision of medication management or DSMES for people with diabetes.

CDC’s major diabetes surveillance programs, the National Diabetes Surveillance System and the SEARCH for Diabetes in Youth study, have documented large 20 year improvements in diabetes-related complications while identifying new areas of concern. These include recent increases in amputation rates, hyperglycemic episode rates (based on emergency department visits), and hyperglycemic deaths; continued increases in diabetes incidence in youth; and continued disparities. CDC implemented two new programs aimed at prioritizing solutions to stagnant trends and persistent disparities – the Natural Experiments for Translation in Diabetes 2.0 (NEXTD-2) and Location, Environmental Attributes, and Disparities (LEAD).

The NEXTD-2 network is a consortium of eight major natural experimental studies evaluating naturally-occurring program and policy exposures at the federal- (e.g., expanded insurance coverage for the underserved), state- (e.g., funding to support care delivery innovations), employer- (e.g., generous or penalty benefit designs), or clinical-level (e.g., reimbursements for specific diabetes prevention or management interventions). The NEXTD-2 network is still ongoing and final results will not be available until mid/late 2021 (due to a no-cost extension period and study delays during the COVID-19 pandemic), but preliminary results show vast potential for informing and guiding policy in the near future. For example, the Harvard site showed that high-deductible health plans that include preventive drug list (PDL) coverage, which provides free or very low-cost access to medicines is associated with substantial annual out-of-pocket cost savings for patients with diabetes. To date, the NEXTD-2 network has helped to advance the natural experiments field, presenting symposia at national meetings and publishing two journal supplements (one in Medical Care in 2020, and the other to be published in BMJ Open Diabetes Research and Care in March 2021); yielding 75 publications across the network and developing novel methods to analyze large, complex datasets in the healthcare delivery context.

The Diabetes LEAD network is a CDC-funded research collaboration among four major US universities and CDC, that examines the health-system based, environmental, and community factors that account for the large geographic differences in diabetes risk across the U.S. Preliminary results of network and site-specific analyses are expected in early 2021. To date, the network has published its overview design paper in JMIR Research Protocols (September 2020), and several other methodological manuscripts are underway.

Cancer Prevention and Control

Performance Measures for Long Term Objective: Improve health outcomes related to cancer

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.9.1 Decrease the incidence rate of late-stage breast cancer diagnosis in women ages 50 to 74 (per 100,000) (Intermediate Outcome)	FY 2017: 95.4 Target: 99 (Target Exceeded)	97	97	Maintain
4.9.2 Increase the percent of adults age 50 to 75 receiving colorectal cancer screenings ¹ (Intermediate Outcome)	FY 2018: 68.8% Target: 68.5% (Target Exceeded)	70.5%	70.5%	Maintain
4.9.5 Increase the median colorectal screening rate among Colorectal Cancer Control Program (CRCCP) health system clinics (Outcome)	FY 2019: 55.2% Target: 56% (Target Not Met but Improved)	59%	59%	Maintain
4.Q Number of breast or cervical cancers and pre-malignant lesions detected among women served (Short-term Outcome)	FY 2019: 10,357 Target: 9,900 (Target Exceeded)	10,800	10,900	+100

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.R Number of women served through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) (Short-term Outcome)	FY 2019: 315,551 Target: 330,000 (Target Not Met)	365,000	365,000	Maintain
4.V Increase the percentage of CDC-funded state central cancer registries receiving laboratory data through a cloud-based platform (Output)	FY 2020: 23% (Baseline)	75%	85%	+10

¹Targets and results are set and reported biennially.

Performance Trends: Cancer is the second leading cause of death in the United States, resulting in over 599,000 deaths annually – over 1,640 deaths each day. Cancer is responsible for more potential years of life lost than all other causes of death combined. Since cancer patients overall are living longer, the number of cancer survivors is expected to increase to more than 20 million by 2026.

The number of new cancers can be reduced and many cancer deaths can be prevented. Scientific research shows that policy and environmental changes can reduce the risk for cancer and improve survival after a cancer diagnosis. Effective screening methods can find breast, cervical, and colorectal cancers, and can find lung cancers (among heavy smokers only). Finding these cancers early can make treatment more successful. CDC is actively focused on increasing breast, cervical and colorectal cancer screening rates by emphasizing implementation of evidence-based interventions in health system clinics, expanding patient navigation, and partnering with community organizations. In addition, for breast and cervical cancer, CDC provides direct screening services for eligible underserved women.

It is important to note that COVID-19 has had a significant negative impact on access to preventive health services in FY 2020. CDC expects this to impact cancer screening numbers in FY 2020 and FY 2021. Importantly, the U.S. healthcare system has given priority to providing medical care for virus-infected patients. Many community health center clinics are now focused on COVID-19 testing and contact tracing and other clinics continue to offer reduced services or are closed for the safety of staff and patients.

Breast and Cervical Cancer: Women ages 50 and older are at highest risk for breast cancer and benefit the most from screening. Modeling studies show that compared to those not screened, biennial mammography screening reduces breast cancer deaths by 25% among women ages 50-74. From FY 2012 to FY 2014, the incidence rate of late-stage diagnosis among women ages 50–74 (Measure 4.9.1) had not changed substantially. However, from FY 2014 to FY 2015, the rate decreased from 100.7 per 100,000 to 99.0 per 100,000, exceeding the target. In FY 2017, the rate decreased to 95.4 per 100,000. Increases in the number of women eligible for insurance coverage and increased access to care likely contributed to some improvements in screening rates, thus earlier diagnosis of cancer. However, increased coverage alone will not increase screening rates to target levels within all populations.

CDC’s current five-year cooperative agreement for the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) funds 50 states, the District of Columbia, six U.S. territories, and 13 American Indian/Alaska Native tribes or tribal groups to increase breast and cervical cancer screening rates in underserved populations. The cooperative agreement requires recipients to provide direct screening services and expand its scope to increase

cancer screening rates by implementing evidence-based strategies and population-level activities within health systems.

To reflect the impact and reach of the current cooperative agreement, two measures for the NBCCEDP are reported: 1) number of cancers and pre-malignant lesions detected and 2) total number of women served by the program. In FY 2019, the NBCCEDP reported 10,357 cancers and pre-malignant lesions detected (Measure 4.Q), substantially exceeding the target of 9,900. CDC anticipates the program will meet future targets by continuing to provide direct screening services and implementing population-level activities within health systems as required in the cooperative agreement.

The total number of women served by the NBCCEDP (Measure 4.R) in FY 2019 was approximately 14,400 less than the target (315,551 vs 330,000). The measure is intended to capture a broader spectrum of the program's activities including work to support cancer screening, diagnostic follow-up, and navigation of women along the cancer continuum from prevention and early detection to treatment referral. In addition to the lag time in implementing the new program model, CDC determined that the discrepancy in the actual versus target results was due to the program not yet having the ability to collect data on the number of women receiving patient navigation services. CDC increased the targets for FY 2021 and FY 2022 to include women receiving patient navigation services.

Colorectal Cancer: Colorectal cancer (CRC) is the second most commonly diagnosed cancer and the second leading cause of cancer deaths among cancers affecting both men and women in the U.S. CRC screening can detect cancer early, when treatment is more effective, and a colonoscopy can prevent cancer by removing precancerous polyps before they turn into cancer. In FY 2018, only 68.8% of adults aged 50-75 were up to date on CRC screening for CRC (Measure 4.9.2), about a 1.5 percentage point improvement since 2016 and exceeding the FY 2018 target.

CDC funds 30 recipients to increase colorectal screening among underserved populations aged 50-75. Recipients partner with health system clinics to increase the number of people screened by implementing evidence-based strategies (e.g., patient and provider reminders, reducing structural barriers, and provider assessment and feedback) recommended by the Task Force on Community Preventive Services. Through March 2020, CDC's Colorectal Cancer Control Program (CRCCP) recipients have partnered with over 832 health system clinics that serve over 1,300,790 patients age-eligible for colorectal cancer screening. Among clinics recruited in the first year of the program, screening rates have increased more than 12 percentage points from a median rate of 42.9% in 2016 to 55.2% in 2019, just under the 2019 target of 56% (Measure 4.9.5). In contrast, national screening rates for the U.S. have consistently increased by 1-2 percentage points every two years.

Cancer Registries: Cancer reporting from providers to State Cancer Registries is included in CMS Stage 2 meaningful use criteria. Implementation of meaningful use criteria is significantly increasing the number of reports received for each case by the central registry.

CDC has prioritized data modernization to move to more real-time data collection in a cloud-based platform. Increasing the number of CDC-funded state central cancer registries receiving electronic cancer pathology reports via a cloud-based platform is important to continue efforts for onboarding laboratories capable of providing electronic cancer pathology reports. This will allow for real-time identification of cancer incidence for 90-95% of cancer diagnoses. In 2019, three cancer registries participated in a pilot project to transfer lab data to a cloud and to the registry for real-time reporting. CDC is proposing a new measure to replace its previous cancer registry measure which better represents these data modernization efforts (Measure 4.V).

Oral Health

Performance Measures for Long Term Objective: Prevent oral health diseases and promote effective interventions that support optimal oral health

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.7.1 Increase the proportion of the people served by community water systems who receive optimally fluoridated water ¹ (Intermediate Outcome)	FY 2018: 73% Target: 76.5% (Target Not Met but Improved)	N/A	76.5%	N/A

¹Targets and results are set and reported biennially.

Performance Trends: For more than 75 years, community water fluoridation has been a safe and healthy way to effectively prevent tooth decay, and was recognized by CDC as one of 10 great public health achievements of the 20th century. CDC works with national partners, states, communities, and water operators to support the U.S. population having access to optimally fluoridated water to prevent tooth decay. In 2018, 73% of the population served by community water systems (CWS) had access to optimally fluoridated water (Measure 4.7.1). This was an improvement over FY 2016 but did not meet the FY 2018 target.

Information about populations served by CWS, including both systems that adjust and that do not adjust fluoride levels, is reported to the Water Fluoridation Reporting System (WFRS) by state drinking water programs. Over time, it has become increasingly clear that the population estimation methods used by states tend to have inaccuracies, under- or over-estimating the population on CWS; for example, there have been instances where the total estimated populations served by community water systems are greater than the state’s population estimates from the U.S Census Bureau.

In 2012, CDC introduced a corrective methodology to adjust the state-estimated CWS populations downward in states that reported more customers than the U.S. Census Bureau population estimates. This method, used for the 2012 and 2014 data, was retroactively applied to data from 2000-2010, using the same downward adjustment evenly in all over-reported states, even though significant variations exist in how states over- or underestimate population. Additionally, this method only addressed the issue of overestimation of CWS population, and did not address potential population underestimation.

To address the limitations in the methodology, in 2019 CDC introduced an updated Control Factor that uses data from the U.S. Geologic Survey and the United States Census Bureau to proportionally adjust both overestimated and underestimated CWS populations. This new methodology is in line with a key estimating principle that all estimates produced should be as consistent as possible with other known, published, and trusted population estimates.

CDC will assess how the new methodology impacts historical data, but does not intend to apply the new methodology to the previous statistics. While the population estimates using the current methodology are not directly comparable to previous years’ estimates, the percentage of state populations on CWS receiving fluoridated water will remain comparable across the old and new methodology as both the state CWS population and the state fluoridated population are adjusted by the same set proportion. The decision to implement or continue community water fluoridation is made at the state or local level. CDC supports the decision-making process by sharing evidence-based research about the safety, effectiveness, and cost-effectiveness of community water fluoridation.

In 2019, CDC launched a free, web-based modular training course, Fluoridation Learning Online, designed to build the capability of state drinking water program officials, state and local health department staff, oral health program staff, and water system operators to improve and maintain the quality and results of community water fluoridation. This training provides information on the fundamentals of community water fluoridation, including how fluoride works and why we use it, how state programs support and communicate fluoridation’s benefits, and how water treatment systems are designed and operate. CDC has also released Fluoridation Resources Online, a non-credit companion course designed to be a lasting resource for water operators and fluoridation program managers. Although CDC does not currently offer continuing education credits for this course, some states have elected to award water operator continuing education credits/training units for learners who complete Fluoridation Learning Online, including Arkansas, Colorado, Iowa, Louisiana, Rhode Island, Vermont, and West Virginia. We are also working with the national American Water Works Association and states to assist them with identifying options for water operators to obtain continuing education credits using our training.

Rural communities often experience the greatest disadvantage in terms of receiving the benefits of water fluoridation, because of the challenges and relative cost associated with scaling traditional fluoridation technologies for use in small, rural public water systems. Of the 40,000 public water systems that do not currently provide optimally fluoridated water, an estimated 16,000 are small, rural systems, serving about 24 million people. Recognizing that significant disparities persisted within these communities, CDC invested in a Small Business Innovation Research project to explore the feasibility of a fluoride delivery system designed specifically for this environment. The resulting fluoride tablet system, which will become commercially available in Fall 2021, will allow small public water systems to provide fluoridated water to their customers safely and cost-effectively. This system is economical for those that serve as few as 50 people, filling a large gap. This technology will allow small water systems delivering to 5,000 customers or less to increase the number of people with access to optimally fluoridated water.

Safe Motherhood and Infant Health

Performance Measures for Long Term Objective: To improve the health of women and infants through public health surveillance, research, capacity building and science based practices

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 20201
4.8.5 Reduce birth rates among adolescent females aged 15 to 19 years (per 1,000 females) ¹ (Outcome)	FY 2018: 17.4 Target: 18.4 (Target Exceeded)	17.4	17.4	Maintain
4.8.7 Decrease the infant mortality rate (infant deaths in the first year of life) per 1,000 live births) (Outcome)	FY 2018: 5.66 Target: 5.72 (Target Exceeded)	5.66	5.66	Maintain
4.8.8 Reduce the ratio of in-hospital maternal deaths per 100,000 delivery hospitalizations (Outcome)	FY 2018: 7.02 (Baseline)	5.5	5.4	-0.1

¹ Corrected unit of measure that was reported in the FY 2021 President’s Budget.

Performance Trends: CDC strengthens the evidence base for effective interventions that improve both maternal and infant health.

Birth Rate Among Adolescent Females: The birth rate for teenagers aged 15-19 has decreased over 50% in the past decade. This rate dropped from 18.8 per 1,000 in 2017 to 17.4 per 1,000 in 2018, reaching yet another record low for the U.S. and exceeding the FY 2018 target (Measure 4.8.5).

Infant Mortality Rate: The infant mortality rate is the number of deaths per 1,000 live births that occur before the infant’s first birthday. In 2018, the infant mortality rate in the U.S. was 5.66 deaths for every 1,000 births (Measure 4.8.7), exceeding the FY 2018 target, and an improvement over the previous year. CDC works to prevent these deaths through a range of activities. CDC funds the Sudden Unexpected Infant Death (SUID) Case Registry in 22 states and jurisdictions, covering about 1 in 3 SUID cases in the United States. SUID is the death of an infant less than one year of age that occurs suddenly and unexpectedly and whose cause of death is not immediately obvious before investigation. SUIDs include deaths from SIDS, accidental suffocation and strangulation in bed, and deaths with unknown cause. Participating states and jurisdictions use data about SUID trends and circumstances to develop strategies to improve death investigations and reduce future deaths.

In-Hospital Maternal Deaths: A new measure was added on in-hospital maternal deaths during delivery hospitalization, which is an important measure of progress to monitoring and improving maternal mortality. In 2018, the baseline ratio was 7.02 in-hospital maternal deaths per 100,000 delivery hospitalizations (Measure 4.8.8). In our work to eliminate preventable maternal mortality, CDC has made 24 awards, supporting 25 states for the Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) Program. This funding directly supports agencies and organizations that coordinate and manage Maternal Mortality Review Committees to identify, review, and characterize maternal deaths; and identify prevention opportunities. CDC also supports 13 state-based Perinatal Quality Collaboratives (PQCs), which are networks of teams working to improve health outcomes for mothers and babies, and the National Network of Perinatal Quality Collaboratives. PQC members identify health care processes that need to be improved and use the best available methods to make changes as quickly as possible. For example, the Illinois Perinatal Quality Collaborative (ILPQC) worked with 102 hospitals to address severe maternal hypertension. Preliminary results from the first year of the initiative showed an improvement in treatment within 60 minutes of new onset severe hypertension cases from 41% at baseline to 79% in the first year. Preliminary results also showed an increase in the percentage of cases receiving preeclampsia education at discharge from 37% to 81%, scheduling follow-up appointments within 10 days of discharge from 53% to 75%, and debrief after event from 2% to 44%.

Arthritis

Performance Measures for Long Term Objective: Reduce pain and disability and improve quality of life among people affected by arthritis

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.10.1 Increase the age-adjusted percentage of adults (age 18+) diagnosed with arthritis who were counseled by a doctor or other health professional to be physically active or exercise to help arthritis or joint symptoms, in states	FY 2019: 70.0 (Baseline)	70.3	N/A	N/A

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
funded by the CDC Arthritis Program (Outcome)				

Performance Trends: Recent projections indicate that arthritis prevalence and arthritis-associated limitations are increasing and confirm that arthritis remains a top cause of morbidity, work limitations, and compromised quality of life. Arthritis affects more than 54 million adults, almost 60% of whom are working aged adults (< 65), and is projected to affect 78 million adults by 2040. There is good evidence that physical activity can reduce joint pain, improve function and halt or delay physical disability among adults with arthritis, but physical activity levels are lower for adults with arthritis than adults without arthritis. Adults with arthritis are more likely to engage in physical activity and self-management education programs when recommended by a health care provider. This strategy and an emphasis on provider recommendations are reflected in CDC’s new state arthritis program and will be reflected in other, future activities of the arthritis program.

A new arthritis program state cooperative agreement began in FY 2018. This has given the program an opportunity to begin work with 13 states on innovative activities. CDC introduced a new measure related to the new cooperative agreement activities and intended outcomes (Measure 4.10.1). The new measure for the combined 13 funded arthritis states also relates to a HP 2030 objective. However, since Behavioral Risk Factor Surveillance System questions for arthritis are only asked on the odd numbered years, 2019 will be the first available data, and serve as the baseline. The BRFSS 2019 age-adjusted pooled estimate for the 13 funded states indicates 70% of adults with arthritis reported being counseled about the benefits of physical activity for managing arthritis by a health care provider that year.

Behavioral Risk Factor Surveillance System (BRFSS)

Performance Measures for Long Term Objective: Improve validity, coverage, and dissemination of BRFSS

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
4.P Increase the average percentage of completed cell phone interviews to maintain population coverage in the Behavioral Risk Factor Surveillance System (BRFSS) (Output)	FY 2019: 64% Target: 56% (Target Exceeded)	68%	70%	+2

Performance Trends: CDC established the Behavioral Risk Factor Surveillance System (BRFSS) as a landline telephone-based health survey system conducted by states and territories to monitor population risk factors for chronic disease and other leading causes of death and disability. CDC moved to a dual, but separate, landline and cellular telephone sampling frame in 2011. Since then, CDC has demonstrated measurable improvements in reaching cell phone respondents, with the average percentage of completed cell phone interviews increasing to 64% in FY 2019 (Measure 4.P). National Health Interview Survey (NHIS) estimates indicate that the number of households with only wireless telephones is still growing. Preliminary NHIS results show that between the first half of 2018 and the first half of 2019 wireless only households increased from 54% to 59.2% - an almost eight percent increase. As the BRFSS landline sample continues to yield fewer completed surveys, states are increasingly dependent on the cell phone sample to capture an effective representation of their state population.

BIRTH DEFECTS AND DEVELOPMENTAL DISABILITIES

Child Health and Development

CDC Contextual Indicators for Long Term Objective: Prevent birth defects and developmental disabilities

Contextual Indicators	Most Recent Result	FY 2025 Target
5.1.5e Increase the proportion of children 8 years of age who have autism spectrum disorder but do not have intellectual disability who were first evaluated by age 36 months ¹	FY 2020: 38.6% Target: 35.1% (Target Exceeded)	39.8%
5.1.5f Increase the proportion of children 8 years of age who have intellectual disability and autism spectrum disorder who were first evaluated by age 36 months ¹	FY 2020: 58.4% Target: 55.9% (Target Exceeded)	60.2%

¹Results are reported biennially.

Performance Measures for Long-Term Objective: Prevent birth defects and developmental disabilities

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
5.1.8a Increase the percentage of primary care providers who screen women of reproductive age for risky alcohol use (Outcome)	FY 2020: 35.5% Target: 47.9% (Target Not Met)	49.3%	50.6%	+1.3
5.1.8b Increase the percentage of primary care providers who provide appropriate, evidence-based interventions to reduce alcohol-exposed pregnancy for those at risk (Outcome)	FY 2020: 37.5% Target: 42.5% (Target Not Met but Improved)	43.8%	45.0%	+1.2
5.1.10 Increase the proportion of Hispanic women of reproductive age who have an optimal blood folate concentration for neural tube defect ^{1,2} (Outcome)	FY 2017: 81.2% ² Target: 81.6% (Target Not Met)	82.6%	N/A	N/A
5.A Increase the number of states using	FY 2020: 4 Target: 2	4	6	+2

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
a standard case definition to track neonatal abstinence syndrome (Output)	(Target Exceeded)			

¹ Data reported biennially (in odd years).

² Baseline established using data from NHANES 2007–2016 to increase stability and reliability of estimate.

Performance Trends: Birth defects affect three percent of infants and account for more than 20% of infant deaths in the U.S. A primary way CDC prevents birth defects is by identifying and reducing risk factors (such as exposure to alcohol or opioids in pregnancy) and by identifying and increasing protective factors (such as sufficient levels of folate in the blood). CDC works to increase the percentage of primary care providers who (a) screen women of reproductive age for risky alcohol use and (b) provide appropriate, evidence-based interventions to reduce alcohol-exposed pregnancy for those at risk (Measures 5.1.8a-b). CDC supports national organizations that work with healthcare professionals to promote screening and brief intervention (SBI) for risky alcohol use for women of reproductive age. This includes family medicine physicians, obstetricians and gynecologists, nurses, medical assistants, and social workers. Recipients promote member awareness of risk alcohol use, clinician guidelines to support alcohol SBI, and implementing requirements for healthcare provider recertification.

The FY 2020 targets for the fetal alcohol spectrum disorder (FASD) performance measures 5.1.8a and 5.1.8b were not met. However, it is important to note that there have been fluctuations in alcohol screening and brief intervention percentages since 2012, resulting in an overall small net decrease in alcohol screening and a significant increase in brief intervention. There are also variations across healthcare provider types. For example, since 2012, obstetricians and gynecologists reported the highest increases in brief intervention when compared with other healthcare providers. Alcohol screening and brief intervention percentages, as well as variations in these percentages by healthcare provider type, will continue to be closely monitored in the coming years. Efforts to improve healthcare provider practices of alcohol screening and brief intervention continue to be a key program focus area. Educational products targeting specific clinician groups have been developed and online training is now available, clinical champions have been identified, and clinical decision support tools have been developed that are compatible with all electronic health records.

To prevent neural tube defects (NTDs), CDC works to help women of reproductive age attain optimal concentrations of folate, a B vitamin, in their blood. For many reasons, Hispanic mothers have higher prevalence of NTD-affected births compared to non-Hispanic white and black women. CDC monitors red blood cell folate concentrations among women of reproductive age, including Hispanic women, to inform interventions in these populations. Based on data from NHANES 2007–2016, 81.1% of Hispanic women of reproductive age (12–49 years) were found to have an optimal blood folate concentration for neural tube defects prevention (Measure 5.1.10). In April 2016, FDA approved voluntary folic acid fortification of corn masa flour, a major food staple for many Hispanic women. Corn masa flour products with folic acid reached the first store shelves at the end of the summer 2016. CDC assessed the effects of this voluntary fortification and the data after corn masa flour fortification (NHANES 2017–2018) showed essentially no change in the proportion of Hispanic women of reproductive age who have an optimal blood folate concentration when compared to data pre-fortification (NHANES 2007–2016). In 2017–2018, more Hispanic women reported consuming enriched cereal grain products (63.8%) as their only source of folic acid compared to previous years (56.3%). This trend is also reflected in the overall population but is magnified in the Hispanic population. Hispanic women who were less acculturated, primarily speaking Spanish at home, showed more substantial improvements than Hispanic women overall, with 85.4% of this subpopulation reaching optimal blood folate concentrations. While the overall optimal blood folate concentration performance remained essentially unchanged (Measure 5.1.10), CDC plans to examine the consumption patterns of Hispanic women of reproductive age to assess the uptake of corn masa flour following voluntary fortification. To improve the stability and reliability of statistical estimates, additional years of NHANES data are needed to assess the effects of voluntary

fortification of corn masa flour with folic acid on optimal blood folate concentrations, in particular as it relates to the acculturation status of Hispanic women.

CDC is tracking the number of states using a standard case definition to track neonatal abstinence syndrome (Measure 5.A). This measure aligns with CDC’s priorities and efforts with states and clinical organizations to gain a more precise understanding of how opioids and other substances used during pregnancy impact children's health, to identify best practices to reduce unnecessary maternal opioid use, and to identify opportunities for maternal treatment of opioid use disorder by identifying infants with NAS. CDC leaders and subject matter experts provided technical assistance to the Council of State and Territorial Epidemiologists’ (CSTE) NAS Leadership Workgroup to develop a standard case definition for neonatal abstinence syndrome. At the Annual CSTE Meeting in June 2019, CSTE approved the position statement outlining a standard case definition. Of note, this does not mandate state reporting. Reporting is voluntary unless NAS becomes a nationally notifiable condition in the future. Widespread voluntary adoption of a new standard case definition does occur but often requires substantial ongoing support and technical assistance. CDC is supporting four states to implement the neonatal abstinence syndrome case definition. Additionally, four sites have received applied epidemiology fellows to provide support on NAS and birth defects surveillance. This will hopefully establish best practices for wider state and jurisdiction adoption of the new case definition.

In FY 2020, targets for early identification of children with autism spectrum disorder (ASD) were exceeded. CDC’s Autism and Developmental Disabilities Monitoring (ADDM) Network monitors the prevalence of ASD and other developmental disabilities in 11 communities across the United States. The most recent ADDM data estimated that 1 in 54 children living in ADDM Network communities have ASD. In addition to providing a prevalence estimate, ADDM data are used to track the age at which children with ASD receive developmental evaluations and ASD diagnoses. CDC revised its measures to better evaluate the proportion of children with early identification of ASD and to look at children with and without intellectual disability. The proportion of children 8 years of age who have intellectual disability and ASD who were first evaluated by age 36 months increased from 55% in FY2018 to 58.4% in FY 2020 exceeding the FY 2020 target of 55.9%. The proportion of children who have ASD but do not have intellectual disability who were first diagnosed by age 36 months increased from 34.5% in FY 2018 to 38.6% in FY 2020 also exceeding the FY 2020 target of 35.1% (Measures 5.1.5e-f).

Health and Development for People with Disabilities

Performance Measures for Long-Term Objective: Improve the health and quality of life of Americans with disabilities

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
5.2.6 Decrease the incidence of skin breakdown in patients with spina bifida (SB) who attend SB clinics ¹ (Outcome)	FY 2019: 10.6% Target: 6.8% (Target Not Met)	6.8%	6.8%	Maintain

¹ Refined definition for skin breakdown to improve consistency in data. Targets adjusted to reflect revised baseline.

Performance Trends: CDC successfully awarded two new Cooperative Agreements as part of a new phase in their work to advance Early Hearing Detection and Intervention (EHDI). As such, CDC will retire its current EHDI measure reporting the percentage of jurisdictions that collect, report, and use individually identifiable data to reduce the number of infants not passing hearing screening that are lost to follow-up and will work to develop a new measure to accurately capture and assess further progress in EHDI. CDC has made clear and sustained progress in improving the lives of children who are deaf and hard of hearing (D/HH) through early identification and intervention. This

progress has been made possible by CDC’s support for the implementation and use of state and territory-based EHDI Information Systems.

CDC is also improving the health of people living with disabilities. Skin breakdown, including pressure ulcers, is a major complication of spina bifida (SB) and up to eight percent of people with SB die of pressure ulcer complications.

CDC began implementing the Skin Breakdown Prevention Bundle in summer 2016 in collaboration with 10 SB clinics that participate in the National Spina Bifida Patient Registry and currently there are 12 participating SB clinics. Previous estimates of the incidence of skin breakdown in patients who attend SB clinics were around 16%. CDC’s most recent data show an incidence of skin breakdown in patients with SB who attend SB clinics with ongoing participation in the Skin Breakdown Prevention Bundle of 10.6% in FY 2019, which did not meet the target of 6.8% (Measure 5.2.6). CDC believes that the implementation of the Skin Breakdown Prevention Bundle has increased the awareness for skin breakdown and, therefore, has increased the detection of this injury. In other words, the expected reduction in the frequency of skin breakdown is being offset by higher detection rates. The overall rate of skin breakdown when combining participating and non-participating clinics was 7.9% for 2018 and 7.6% for 2019.

Attention-Deficit/Hyperactivity Disorder (ADHD) is the most common neurobehavioral disorder of childhood, diagnosed in 10% of children aged 2-17 years. The American Academy of Pediatrics recommends behavioral therapy as the first-line treatment for children under age 6 years with an ADHD diagnosis. While CDC recognizes the importance of behavioral therapy, it will retire its measure focused on children with a diagnosis of ADHD who receive behavioral therapy for treatment, as additional resources are needed to significantly impact the measures performance.

CDC also improves the health of people living with intellectual/developmental disabilities (I/DD) by increasing the use of Medicaid administrative data to identify needs and direct public health interventions to people in this population. Among other outcomes, these data help CDC and states determine the leading causes of hospitalizations and emergency department use among people with I/DD. This information presents an opportunity to improve care quality and reduce Medicaid expenditures, as well as improve health for people with disabilities. CDC will retire its measure focused on funded Disability and Health state programs that use these data. This indicator will remain level for the remainder of the funding cycle. CDC plans to introduce a measure aligned with a new disability and health funding opportunity in the future.

Public Health Approach to Blood Disorders

Performance Measures for Long-Term Objective: Improve the health and quality of life for Americans with blood disorders

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
5.3.2 Decrease the prevalence of hemophilia treatment inhibitors among Community Counts - Health Outcomes Monitoring System for People with Bleeding Disorders at HTC's (Outcome)	FY 2019: 5.8% Target: 5.6% (Target Met)	5.4%	5.4%	Maintain
5.B Increase the proportion of children less than 4 years old with severe hemophilia A or B who are	FY 2019 75.2% ¹ (Baseline)	78.8%	80.6%	+1.8

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
prescribed early prophylaxis (Output)				

¹ CDC refined its method for data collection in FY 2019. Baseline and targets have been updated to reflect this updated methodology. Results cannot be compared to previous years.

Performance Trends: CDC protects people and prevents complications of blood disorders by reducing the prevalence of inhibitors among hemophilia patients, and increasing the proportion of very young hemophilia patients on primary prophylaxis. Through Community Counts, CDC collects data on health issues and medical complications for people living with bleeding disorders, incorporates screening for inhibitors, and monitors treatment use, including prophylaxis, to facilitate best practices that help prevent or eradicate complicated, costly and debilitating health conditions.

Approximately 15-20% of people with hemophilia develop an inhibitor, a condition where the body stops accepting the factor treatment product (which helps the blood clot properly) as a normal part of blood. The body treats the “factor” as a foreign substance and mounts an immune system response to destroy it with an inhibitor. When people develop inhibitors, treatments are less effective and bleeding episodes are harder to stop. Special treatment is required until the body stops making inhibitors, which can increase hospitalizations, compromise physical function, and exceed \$1,000,000 a year for a single patient.

Discovering an inhibitor as soon as possible helps improve outcomes and reduce costs. Although hemophilia care providers widely accept that development of an inhibitor is a serious issue, routine screening for inhibitors is not current practice for local laboratories because of the high cost and the inability to perform the proper tests. In FY 2019, the prevalence of hemophilia treatment inhibitors was 5.8% which did not meet the FY 2019 target but was about a 10% improvement over FY 2018 (Measure 5.3.2).

People with hemophilia are also at risk for joint bleeds, a health problem that occurs when a person bleeds internally into their joints causing damage. Joint bleeds can happen following injury or trauma, but can also occur spontaneously. Frequent joint bleeds can lead to joint disease, an irreversible condition, making mobility painful and difficult. CDC data shows that regular treatment to prevent bleeding (prophylaxis) initiated before age 4 has the greatest impact on preventing bleeds, thereby preventing joint disease. Although joint damage is well-known as a major complication in people with bleeding disorders, CDC has only recently been able to monitor this outcome. Recently, CDC established a new data source to measure the proportion of children less than 4 years old with severe hemophilia A or B who are prescribed early prophylaxis (Measure 5.B). The initial baseline was established in FY 2018 at 44.4%. Since the development of this measure, CDC scientists and subject matter experts revisited the criteria and algorithm used to analyze the data for this measure and identified opportunities to adjust the algorithm to capture a more accurate representation of the population. The program established a new baseline in FY 2019 of 75.2% and developed targets based on the revised criteria to report in the new fiscal year. Continuing to monitor treatment use, including the uptake of early prophylaxis for the youngest patients will help assess the impact of CDC’s programs and partnerships to reduce complications from bleeding disorders, and help influence best practices that address joint disease prevention.

ENVIRONMENTAL HEALTH

Childhood Lead Poisoning Prevention

Contextual Indicator for Program: Childhood Lead Poisoning Prevention

Contextual Indicator	Most Recent Result	FY 2019-2022 Target
6.2.5a Reduce health disparities associated with blood lead levels in children aged 1-5 in the U.S. such that: a. The gap in blood lead levels between black children and children of other races is reduced (Contextual Indicator) ¹	FY 2015-2016: Result: 0.20	0.30
6.2.5b Reduce health disparities associated with blood lead levels in children aged 1-5 in the U.S. such that: b. The gap in blood lead levels between children living above the federal poverty level and those living below the poverty level is reduced (Contextual Indicator) ¹	FY 2015-2016: Result: 0.17	0.25

¹ Targets are set and reported every four years.

Performance Trends: CDC measures the reduction in health disparities associated with blood lead levels in children, which are valuable indicators of the success of lead interventions nationwide (Measures 6.2.5a-b). Lead exposure can affect nearly every system in the body and is associated with numerous behavioral and learning problems (e.g., reduced IQ, attention deficit hyperactivity disorder, juvenile delinquency, and criminal behavior). Even low levels of lead in a child’s blood can affect IQ, the ability to pay attention, and academic achievement.

While overall child lead levels in the U.S. have fallen significantly in the last decade, reducing disparities is critical to decreasing the average blood lead levels among all young children. Over 24 million homes in the United States have deteriorated lead-based paint and lead-contaminated house dust, which places children at high risk of lead poisoning. NCEH’s Lead Program supports 53 jurisdictions that serve approximately 20 million children under the age of six. Over half a million children one to five years have BLLs at or above the current reference level (5 micrograms per deciliter), which triggers state and local intervention, such as exposure mitigation and health monitoring. Based on 2015-2016³⁸⁹ data, CDC exceeded the performance target for reducing the gap in blood lead levels between black children and children of other races and for reducing the gap in blood lead levels between children living above the federal poverty level and those living below the poverty level. The National Center for Health Statistics released the most recent cycle of 2017-2018 NHANES blood lead level data in June 2020. However, public access to the 2017-2018 pediatric lead data are restricted because of privacy concerns. NCEH's lead program is in the process of requesting access to the restricted-use data to compute updated performance measure values, noting that access to and analysis of data might be delayed due to COVID. CDC continues its efforts to reduce health disparities associated with blood lead levels in children. a

CDC provides national expertise on lead poisoning prevention and a national surveillance system to monitor blood lead levels and housing-related health hazards. The effects of elevated blood lead levels in children can be mitigated through timely provision of educational, medical, and behavioral interventions and social services. CDC continues to implement its strategy to address childhood lead poisoning prevention through data for targeted interventions. However, CDC has been unable to collect reliable data on the percentage of children with elevated BLLs who were referred for case management and will retire this measure.

³⁸⁹ <https://www.cdc.gov/nchs/nhanes/index.htm>.

Environmental and Health Outcome Tracking Network

Performance Measures for Program: Environmental Public Health Tracking

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
6.C Number of public health actions undertaken (using Environmental Health Tracking data) that prevent or control potential adverse health effects from environmental exposures (Output)	FY 2020: 66 Target: 40 (Target Exceeded)	45	45	Maintain

Performance Trends: The Environmental and Health Outcome Tracking Network covers over 180 million people, which made up about 56% of the population in the U.S. in 2019. The Tracking Network serves as a source of information on environmental hazards and exposures, population data, and health outcomes. Since FY 2013, CDC has consistently exceeded expectations for the number of data-driven actions to improve public health using the Tracking Network (Measure 6.C). CDC is refining how public health actions are captured and anticipates that the total number of actions may be reduced or remain flat. FY 2022 targets are level with previous year targets as a result. From FY 2005 to FY 2020, state and local public health officials have used the Tracking Network to implement over 740 data-driven public health actions to save lives and prevent adverse health effects that are due to environmental exposures.

For example, heat warning systems and action plans help to reduce the risks of heat exposure, but these risks can vary from state to state. Health and heat data from the Tracking Network were used to provide important information for heat early warning system and action plan administrators in the United States on the temperature ranges at which disease burden may be greatest. This information can help refine state-specific prevention messaging before, during, and after periods of extreme heat. The Tracking Network also serves as a source of information for health professionals, elected officials, researchers, parents, and the general public on environmental hazards and exposures, population data, and health outcomes. Because of CDC's concerted efforts to encourage Tracking awardees to report public health actions, CDC continues to meet this important measure of program success.

Environmental Health Laboratory

Performance Measures for Program: Environmental Health Laboratory

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
6.1.1 Number of environmental chemicals and nutritional indicators that are measured in surveys and studies of the U.S. population (Output)	FY 2020: 416 Target: 392 (Target Exceeded)	400	405	+5
6.1.3 Number of laboratories participating in DLS Quality Assurance and Standardization	FY 2020: 1,996 Target: 2,290 (Target Not Met)	2,295	2,300	+5

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
Programs to improve the quality of their laboratory measurements (Output)				
6.1.4 Number of chronic disease biomarkers included in standardization programs that improve the quality of laboratory measurements (Output)	FY 2020: 20 Target: 19 (Target Exceeded)	21	24	+3
6.A Number of environmental chemicals for which methods were developed or improved (Output)	FY 2020: 63 Target: 50 (Target Exceeded)	55	60	+5
6.B Number of laboratory studies conducted to measure levels of environmental chemicals in exposed populations (Output)	FY 2020: 77 Target: 90 (Target Not Met)	92	95	+3
6.F Number of states assisted with screening newborns for preventable diseases (Output)	FY 2020: 50 Target: 50 (Target Met)	50	50	Maintain

Performance Trends: CDC's biomonitoring measurements track environmental chemical and nutrition indicator levels within the U.S. population and provide national reference information for scientists, physicians, and health officials. CDC also provides voluntary quality assurance and standardization programs that help ensure the quality and comparability of important laboratory measurements for chronic diseases, newborn screening disorders, nutrition status, and environmental exposures.

Since FY 2014, CDC exceeded its target for the number of environmental chemicals and nutrition indicators measured in surveys and studies of the U.S. population every year, measuring 416 chemicals and indicators in FY 2020 (Measure 6.1.1). CDC introduced measurements for 21 new biomarkers of red blood cell fatty acids, which can help assess increased risk of death from cardiovascular disease. CDC also updated measurements for several probable carcinogens, including formaldehyde, ethylene oxide, and acrylonitrile as well as endocrine disruptors, bisphenol A (BPA) and BPA substitutes. In FY 2021 and FY 2022, CDC intends to add measurements for up to 85 new chemicals, while also cycling out some measurements for chemicals detected infrequently in the U.S. population.

In FY 2020, the number of laboratories using CDC quality assurance and standardization programs slightly decreased because of their reduced capacity during the COVID-19 pandemic. CDC expects an upward trend to resume through FY 2022 (Measure 6.1.3).

CDC met its target for including chronic disease biomarkers in its standardization programs by adding three priority biomarkers (troponin, antimuellerian hormone, soluble transferrin receptor). CDC anticipates adding one additional biomarker in FY 2021 and three additional biomarkers to its programs in FY 2022 (Measure 6.1.4).

CDC exceeded the FY 2020 target for developing or improving tests to measure environmental chemicals (Measure 6.A). In response to the electronic cigarette, or vaping, product use-associated lung injury (EVALI) outbreak, CDC rapidly developed and applied 22 laboratory methods for measuring priority potential toxicants from product emissions and bronchoalveolar lavage (BAL) fluid, helping identify vitamin E acetate as the cause of disease. In FY 2021 and 2022, CDC expects to develop or improve methods for 55-60 environmental chemicals.

In FY 2020, CDC collaborated on 77 studies of environmental chemicals (Measure 6.B), fewer than expected because of delays resulting from the COVID-19 pandemic. These studies help identify populations with harmful or higher than normal exposures. For example, using a recently developed method, CDC measured ethylene oxide levels to assess the exposure of populations near medical equipment sterilizing facilities in Chicago. These data aided federal, state, and local public health agencies, and others investigating ethylene oxide. CDC expects to participate in slightly fewer studies in FY 2021 and FY 2022 based on anticipated collaborative opportunities.

CDC also ensures the quality of newborn screening for preventable diseases and since FY 2013 has consistently met the target to provide quality assurance materials for all 50 states (Measure 6.F). In FY 2020, CDC modified its procedures to safely create and ship critical materials to newborn screening programs, assuring states could continue accurate screening despite the COVID-19 pandemic. In FY 2022, CDC will continue providing services and technical assistance to states in support of newborn screening for conditions on the HHS Recommended Uniform Screening Panel.

Asthma

Contextual Indicator for Program: Asthma

Contextual Indicator	Most Recent Result	FY 2025 Target
6.B.2.4 Reduce visits to emergency departments (EDs) for asthma among U.S. children (aged 0-17 years) (Contextual Indicator) ¹	FY 2017: 85.3	69.6

¹ ED visit rate per 10,000 population

Performance Measure for Program: Asthma

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
6.2.4 Increase the proportion of those with current asthma who report they have received self-management training for asthma in populations served by CDC funded state asthma control programs (Output)	FY 2020: 44% Target: 50% (Target Not Met)	50%	50%	Maintain

Performance Trends: In the U.S., nearly 25 million people have asthma, including more than 5.5 million children. While there is no cure for asthma, self-management training can teach people to manage their disease with medical care and to prevent asthma attacks by avoiding triggers. Uncontrolled asthma results in significant costs to families and society when individuals go to the emergency department or are hospitalized for an asthma exacerbation. Children ages 0-17 years have a higher ED visit rate compared with adults ages 18 and over. In 2010,

the average annual ED visit rate with asthma as the first-listed diagnosis was 98.2 per 10,000 children compared with 44.7 per 10,000 adults. In FY 2017, the rate of ED visits for asthma among U.S. children had decreased to 85.3 per 10,000 children (CI 6.B.2.4). The decline is more likely due to transitioning from ICD-9-CM to ICD-10-CM codes in 2016. CDC’s National Asthma Control Program (NACP) and Controlling Childhood Asthma and Reducing Emergencies initiative seeks to decrease the number of emergency department visits and hospitalizations through a tiered approach for asthma control by using interventions with the strongest evidence of effectiveness. Comprehensive asthma control strategies (based on the National Institutes of Health’s Guidelines for the Diagnosis and Management of Asthma) are vital to helping people to stay out of the hospital, avoid the emergency department, and manage their asthma.

CDC measures the proportion of individuals with current asthma who report receiving asthma self-management training from a doctor or other health care provider (Measure 6.2.4). The FY 2020 measure result from the BRFSS Asthma Call-Back Survey was obtained using 2017 data in July 2020. The estimate for the measure has stayed at around 45% since FY 2014, despite focused programmatic efforts by the grantees. This is likely due to restrictive data capture options and the data source, including data from states that are not NACP recipients. Reaching the target of 50% would represent a statistically significant increase in the proportion of individuals receiving asthma self-management training; however, due to limitations of data from BRFSS, the program is examining other measures that would more directly and accurately reflect the activities of NACP recipients for future performance goals.

Environmental Health Activities

Performance Measures for Program: Environmental Health Activities

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
6.1.5 Number of states using National Environmental Assessment Reporting System (NEARS) to prevent foodborne illness outbreaks (Output)	FY 2020: 23 Target: 22 (Target Exceeded)	27	30	+3

Performance Trends: Since 2010, CDC has met or exceeded its target for completing studies to examine the human health effects of exposure to contaminated water and air pollutants, radiation, and hazards related to natural and other disasters. These studies help CDC develop, implement, and evaluate actions and strategies for preventing or reducing harmful exposures and their health consequences. CDC has reexamined its activities around harmful health effects and will retire this measure as it is no longer the best reflection of CDC’s programmatic activities.

CDC’s National Environmental Assessment Reporting System (NEARS) provides a standardized reporting tool used by state, tribal, local, and territorial food safety programs to identify environmental factors that they can routinely monitor to prevent or mitigate foodborne illness outbreaks associated with food service establishments (e.g., worker health policies and food handling practices). With four additional states participating, CDC exceeded its expectations in FY 2020 for the number of states using NEARS (Measure 6.1.5). In FY 2020, CDC moved the NEARS information technology system to a new, modernized system. NEARS is now on the same reporting platform as CDC’s other foodborne outbreak reporting system, the National Outbreak Reporting System (NORS). This action is a significant move toward integrating NEARS and NORS. This action also makes data entry easier for reporting sites. NEARS data are valuable for identifying actions restaurants can take to mitigate outbreaks; in September 2020, CDC released an article based on NEARS data that identifies restaurant practices and policies associated with smaller norovirus outbreaks.

INJURY PREVENTION AND CONTROL

Intentional Injury Prevention

Long Term Objective: Achieve reductions in the burden of injuries, disability, or death from intentional injuries for people at all life stages

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
7.1.5 Increase the percent of Rape Prevention and Education (RPE) funded states that assess outcomes and impact of sexual violence prevention activities (Outcome)	FY 2020: 60% Target: 50% (Target Exceeded)	70%	85%	+15
7.2.5 Increase the percent of Core SVIPP funded states that assess outcomes and impact of injury and violence prevention strategies using surveillance data ¹ (Outcome)	FY 2019: 100% Target: 100% (Target Met)	100%	100%	Maintain

¹ The Core SVIPP program is cross-cutting and is supported by both the Intentional and Unintentional Injury Prevention budget lines.

Performance Trends: CDC is leading efforts to prevent violence before it begins and reaching out to audiences with new prevention strategies. CDC is assessing the impact of these strategies and approaches through its performance measure which tracks the percentage of Rape Prevention Education³⁹⁰ (RPE) funded states that assess the outcomes and impact of sexual violence prevention activities. CDC exceeded its FY 2020 target of 50%, with 60% of states assessing outcomes and impacts of sexual violence prevention activities (Measure 7.1.5), a nearly 70% increase over the FY 2019 result of 35%.

CDC will continue to work with recipients to assess outcomes and impacts of the program activities, including increasing support and funding to states to support these efforts. CDC developed and implemented a tracking and monitoring system for RPE grantees allowing CDC to measure and track indicators of success, such as increases in evaluation capacity (e.g., increased data availability to track program outcomes) and improved implementation of sexual violence prevention strategies based on the best available evidence. CDC also supports both intentional and unintentional injury prevention activities through the Core State Violence and Injury Prevention Program³⁹¹ (Core SVIPP) (Measure 7.2.5). The program is discussed in further detail in the Unintentional Injury Prevention section.

³⁹⁰ <https://www.cdc.gov/violenceprevention/rpe/index.html>.

³⁹¹ <https://www.cdc.gov/injury/stateprograms/about.html>.

Unintentional Injury Prevention

Long Term Objective: Achieve reductions in the burden of injuries, disability, or death from unintentional injuries for people at all life stages

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
7.2.4 Reduce motor vehicle deaths per 100 million vehicle miles traveled (Outcome)	FY 2019: 1.10 ¹ Target: 0.97 (Target Not Met but Improved)	0.97	0.97	Maintain
7.2.5 Increase the percent of Core SVIPP funded states that assess outcomes and impact of injury and violence prevention strategies using surveillance data ² (Intermediate Outcome)	FY 2019: 100% Target: 100% (Target Met)	100%	100%	Maintain
7.2.7b Reduce age-adjusted annual rate of overdose deaths involving synthetic opioids other than methadone (e.g., fentanyl) among states funded through CDC's multi-state surveillance and prevention cooperative agreement (per 100,00 residents) ³ (Outcome)	FY 2018: 11.2 ⁴ Target: 8.7 (Target Not Met)	7.7	7.7	Maintain
7.2.7c Reduce the age-adjusted rate of overdose deaths involving natural and semisynthetic opioids (T40.2) or methadone (T40.3) as a contributing cause of death among states funded through CDC's multi-state surveillance and prevention cooperative agreement (per 100,000 residents) (Outcome)	FY 2018: 4.9 ⁴ Target: 4.2 (Target Not Met but Improved)	3.7	3.6	-0.10

¹Data is provided by the Department of Transportation's National Highway Traffic Safety Administration's (NHTSA) Fatality Analysis Reporting System (FARS) and results may be updated once final data is obtained. FY 2019 result is a preliminary estimate and will be updated after NHTSA releases final data.

²The Core SVIPP program is cross-cutting and is supported by both the Intentional and Unintentional Injury Prevention budget lines.

³Measure language revised to reflect CDC's current and future cooperative agreements.

⁴PfS cooperative agreement – 29 states.

Performance Trends: Unintentional injuries are the leading cause of death for individuals ages 1 to 44 in the United States. Additionally, over half of the total medical and work loss costs of injury deaths are attributable to unintentional injuries (\$129.7 billion).³⁹²

Motor vehicle injury: Estimates show that 36,835 people died in motor vehicle crashes in 2018, a two percent decrease from the 37,473 motor vehicle crash deaths in 2017.³⁹³ The fatality rate per 100 million vehicle miles traveled (VMT) decreased to 1.14 in 2018, down from 1.17 in 2017 (Measure 7.2.4), improving but not meeting the target of 0.97. Job growth and lower fuel prices over this time period may have contributed to increased driving (VMT increased 0.9% between 2017 and 2018). To further decrease the motor vehicle death rate, CDC will continue to promote proven prevention strategies that increase seat belt and child safety seat usage, reduce impaired driving, and protect vulnerable drivers. To obtain a more complete picture of what happened before, during, and after a crash, CDC will amplify data linkage for non-fatal motor vehicle crash injury surveillance in partnership with public health entities at the state level. These activities will help to maximize prevention strategies and reduce deaths.

CDC continues to work closely with its state and local partners, law enforcement agencies, and the more than 924 members of the Road to Zero Coalition to help address the human behaviors that are linked to 94% of serious crashes. CDC also supports the Parents are the Key initiative to help parents, pediatricians, and communities reduce teen driving-related injuries and deaths. In 2019, the Parent-Teen Driving Agreement was downloaded over 4,500 times.

In 2019, CDC released Linking Information for Non-fatal Crash Surveillance (LINCS): A Guide for Integrating Motor Vehicle Crash Data to Keep Americans Safe on the Road, which provides technical assistance to states to initiate or expand non-fatal motor vehicle crash data linkages. CDC also provided supplemental funding through the Core SVIPP program to four states to support and expand their non-fatal motor vehicle crash data linkage programs.

In addition, CDC released MyMobility Plan to help older adults prepare for maintaining their mobility and independence as they age. MyMobility Plan was downloaded more than 4,800 times from CDC's website in 2019.

Core SVIPP: This program provides support to state health departments to disseminate, implement, and evaluate best practices and science-based strategies for injury and violence prevention programs. The Core SVIPP grantees use surveillance data to inform injury and violence prevention activities. A new Core SVIPP notice of funding was awarded to 23 states in 2016. In FY 2020, 100% of the state awardees achieved 100% compliance in using data to assess state outcomes (Measure 7.2.5). Because the target has been achieved, and because a new cycle of Core SVIPP is upcoming, CDC will explore options for refining this measure.

Opioid overdose prevention: CDC has been tracking the rise of opioid overdose deaths and using the data to inform prevention activities to curb this alarming epidemic. Over 450,000 people have died from overdoses involving opioids – prescription or illicit in the United States from 1999 through 2018. In response to this growing public health crisis, CDC launched its Overdose Prevention in States (OPIS) effort in FY 2016 as a means to equip states with resources and expertise needed to reverse this epidemic. As a part of OPIS, CDC's Prescription Drug Overdose Prevention for States (PFS) program funded 29 state health departments to advance and evaluate comprehensive state-level interventions for preventing opioid-related overdose, misuse, and abuse. The OPIS Data-Driven Prevention Initiative (DDPI) funded 14 states to advance and evaluate state-level prevention for opioid overuse, misuse, abuse, and overdose. DDPI funded states at two different levels to support strategic planning and data activities, or additional development of an overdose prevention program.

CDC has tailored its response as the epidemic continues to evolve. In FY 2019, CDC released its new Notice of Funding Opportunity, Overdose Data to Action (OD2A). This program funds 47 states, Washington, D.C., 16

³⁹² <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6438a4.htm>.

³⁹³ 2018 Fatal Motor Vehicle Crashes Overview (dot.gov).

localities, and two territories to advance the understanding of the opioid overdose epidemic and to scale-up prevention and response activities which builds on previous surveillance efforts to foster an interdisciplinary, comprehensive and cohesive public health approach to the complex and changing nature of the opioid overdose epidemic. In FY 2022, CDC will continue to support recipients along the trajectory of moving from data to action, building upon work completed through OD2A.

Currently, CDC is measuring progress in reducing overdose deaths involving all opioids among the states funded specifically for PFS for the award made in FY 2016. CDC updated its measures to ensure that the denominators adequately capture states funded through CDC's multi-state surveillance and prevention cooperative agreement. Since 2016, as the epidemic has evolved, CDC has scaled its programs from an initial cohort of states to a program with a national scope. The updated language allows CDC to consistently report outcomes based on the denominator of funded states. For FY 2022, CDC's measure of natural and semi-synthetic opioid overdose deaths was replaced with a new measure that captures methadone and thus better captures overdoses related to prescription opioids. This update allows CDC to better guide prevention activities related to safer prescribing. In FY 2018, the age-adjusted annual rate of opioid deaths involving prescription opioids was 4.9 per 100,000 residents among states funded for the PFS program (Measure 7.2.7c).

The age-adjusted annual rate of opioid deaths involving synthetic opioids other than methadone (e.g., fentanyl) in FY 2018 was 11.2 per 100,000 residents among states funded for the PFS program (Measure 7.2.7b). The growing issue of polysubstance use means that an opioid-involved overdose often occurs in combination with exposure to other opioids and/or other non-opioid substances. Some examples of polysubstance exposures found in combination in overdose deaths include: illicitly-manufactured fentanyl (IMF) and heroin; illicitly-manufactured fentanyl and cocaine; heroin and methamphetamine; and prescription or illicit opioids and benzodiazepines. The overdose epidemic has grown increasingly complex by co-involvement of prescription and illicit drugs. A recent CDC study found that twenty-five jurisdictions reported 16,236 overdose deaths during January–June 2019. Most overdose deaths (83.8%) involved one or more of four illicit drugs (IMFs [61.5%], cocaine [28.3%], heroin [28.2%], or methamphetamine [17.6%]); nearly one half (49.8%) of these deaths involved two or more of those drugs³⁹⁴.

CDC will continue to strengthen surveillance activities, identify interventions, and implement prevention programs that address the evolving nature of the epidemic. In an example of the success of CDC's current opioid programs, the Forest County Potawatomi Community in Wisconsin created a media campaign targeting the stigma associated with opioid use disorder within Native American culture. In collaboration with the Tribe's Executive Council, the campaign kick-off engaged community members, law enforcement, media, and over 90 tribal youth. The media campaign "blitz" featured a television ad running 62 times per week during peak programming, and print media (billboards) displaying images of tribal members. Since the launch of the campaign, Forest County Potawatomi Community has experienced no deaths by overdose, as well as an increase in community members seeking inpatient treatment, medication-assisted treatment, and residence in transitional living homes.

³⁹⁴Vital Signs: Characteristics of Drug Overdose Deaths Involving Opioids and Stimulants — 24 States and the District of Columbia, January–June 2019 | MMWR (cdc.gov).

PUBLIC HEALTH SCIENTIFIC SERVICES

Health Statistics

Performance Measures for Long Term Objective: Monitor trends in the nation's health through high-quality data systems and deliver timely data to the nation's health decision-makers

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
8.A.E.2 Reduce the number of months after data year for release of the final mortality and natality files (Outcome; Efficiency)	FY 2018: 10 Target: 11 (Target Exceeded)	11	11	Maintain
8.A.1.1a Achieve and sustain the percentage of NCHS website users that are satisfied with data quality and relevance (Outcome)	FY 2020: 55.9% Target: 77.5% (Target Not Met)	77.5%	80%	+2.5
8.A.1.1b Sustain the percentage of Federal Power Users (key federal officials involved in health and health care policy or programs) that indicate that data quality is good or excellent (Outcome)	FY 2020: 100% Good or Excellent Target: 100% Good or Excellent (Target Not Met)	100% Good or Excellent	100% Good or Excellent	Maintain
8.A.1.3 Increase the number of web visits as a proxy for use of NCHS data (Output)	FY 2020: 89.9 Million Target: 13 Million (Target Exceeded)	13 Million	13 Million	Maintain
8.F Number of communities visited by mobile examination centers from the National Health and Nutrition Examination Survey (Output)	FY 2020: 5 Target: 15 (Target Not Met)	15	15	Maintain
8.G Number of adults interviewed in the National Health Interview Survey (Output)	FY 2019: 33,138 Target: 35,000 (Target Not Met but Improved)	27,000	27,000	Maintain

Performance Trends: CDC uses several indicators to measure its ability to provide timely, useful, and high-quality data. In FY 2018, CDC released its 2018 mortality and natality data 10 months after the data year, a month sooner than the target of 11 months (Measure 8.A.E.2). With the ongoing epidemic of drug overdose deaths, improving the timeliness of these data provides the tools for evidence-based policy decisions and planning when these decisions are most relevant. Faster access to these data also facilitates timely evaluation and research efforts related to births and all causes of death, providing critical information on public health issues affecting the nation. CDC's progress on expediting mortality data releases has been especially valuable in supporting evidence-based policy decisions during the COVID-19 pandemic.

To drive program improvements, CDC assesses user satisfaction and perceptions of data utility. The percentage of NCHS' website users who were satisfied with data quality and relevance in 2020 was 55.9%, which is below the target of 77.5% (Measure 8.A.1.1a) and continues a downward trend in user satisfaction since 2017. The number of visits to the NCHS website was nearly seven times more than the average number of visitors since 2015, likely due to the increased attention on available data during the pandemic. While NCHS developed a COVID-19 health data page, visitors may have expected more and different kinds of data not available from NCHS data sources. Similarly, CDC interviews Federal Power Users (key federal officials involved in health and health care policy or programs) to assess their satisfaction with CDC's Health Statistics products and services including data quality, ease of data accessibility and use, professionalism of staff, relevance of data to major health issues, and relevance of data to user needs. One-hundred percent of federal power users gave NCHS a good or excellent rating in data quality, meeting the 2020 target (Measure 8.A.1.1b). This is a 20 percentage point improvement from last year's measure. CDC is working to improve users' ability to access NCHS data sources on the web, including integrating and simplifying existing points of access. Projects under consideration include developing a scalable data query system and a single data repository with standard and searchable metadata, all with the goal of improving web users' experiences accessing and using NCHS data.

CDC tracks the number of web visits as a proxy for the frequency with which NCHS data are used. NCHS had 89.9 million web visits in FY 2020, which is well above the target (Measure 8.A.1.3). This most recent data indicates a sharp increase in web traffic following CDC's previously flat trend of approximately 12 million visits annually since FY 2013. This dramatic change is attributable to increased attention on health statistics during the COVID-19 pandemic. The Vital Statistics Rapid Release program provides access to the timeliest vital statistics for public health surveillance, through quarterly releases of provisional estimates of births, deaths, and infant deaths. This program helps to increase public interest in the data and enables potential users to easily find the most recent data. An initiative launched in 2017 provides the earliest information on a recognized public health crisis prior to the COVID-19 pandemic: drug overdose deaths. To better inform policy and decision makers, counts of provisional drug overdose deaths are published monthly at the national and state level, along with the percent change in these deaths over the previous 12 months. New improvements in timeliness and data quality over the last year have resulted in a significant increase in the number of states reporting the specific drugs or drug classes involved in drug overdose deaths. These data are widely used by CDC and HHS to monitor overdose deaths. NCHS, using the valuable information from the drug overdose death data releases, was able to quickly respond to the COVID-19 crisis and release COVID-19 death data rapidly to provide the necessary information to public health policymakers and leaders.

CDC monitors the implementation of its national surveys to ensure the collection and provision of accurate, high quality data. The National Health and Nutrition Examination Survey (NHANES) mobile examination centers visited 5 communities in FY 2020 prior to being removed from the field due to COVID-19 precautions (Measure 8.F). In previous years, NHANES mobile examination centers have consistently met their target of 15 communities to achieve the geographic diversity needed for nationally representative estimates. The National Health Interview Survey (NHIS) interviewed 31,997 adults in 2019, a significant increase from 2017 and 2018 numbers (26,742 and 25,417, respectively). This improvement is the result of supplementary funding available in FY 2019 and a better-than-expected response rate following the implementation of the survey questionnaire redesign. The NHIS redesign reduced the length of the survey and eliminated the family-level interview before

the adult interview. CDC's NHIS sample size target of 27,000 completed adult interviews reflects an annual sample size that can be achieved with FY 2022 resources. Both the NHANES and NHIS were impacted in FY 2020 due to additional challenges posed by the ongoing COVID-19 pandemic. While their targets remain constant for FY 2022, person-to-person contact restrictions continue to inhibit collectors from reaching sample populations. In cases where NCHS could continue data collection by phone, they have continued operations (i.e., the NHIS). However, in cases where in-person examinations are necessary, they have ceased operations and are continuing to monitor the pandemic and explore options on how to return to the field (i.e., NHANES). NHANES data collection operations are currently suspended until mid-2021. NHANES staff are considering options on how to safely re-start data collection in 2021 and the implications of these options for the quality and utility of the 2019-2020 NHANES data. One option to limit person-to-person contact is for NHANES data collectors to conduct a phone interview with participants prior to in-person examinations.

CDC is retiring two measures related to the National Ambulatory Medical Care Survey (NAMCS) this submission as it moves towards electronic collection of this survey's data. CDC is engaged with providers to reduce burden and facilitate greater participation in NAMCS surveys by encouraging the submission of electronic health records (EHRs), rather than having field representatives complete the traditional patient record form. As the survey moves toward the submission of EHRs with greater efficiency and reduced burden, CDC will be able to monitor insurance coverage, access and utilization, and other key indicators at the state and national level to inform the public and decision makers.

Surveillance, Epidemiology, and Laboratory Services

Performance Measures for Long Term Objective: Lower barriers to data exchange across jurisdictions as part of an integrated strategy for public health surveillance and response

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
8.B.1.4 Increase the percentage of notifiable disease messages transmitted in HL7 format to improve the quality and streamline the transmission of established surveillance data (Output)	FY 2020: 49% Target: 40% (Target Exceeded)	40%	40%	Maintain

Surveillance Performance Trends: State and local efforts to monitor, control, and prevent the occurrence and spread of infectious and noninfectious diseases are dependent on timely, high-quality data obtained from disease surveillance, a cornerstone of public health practice. The National Notifiable Diseases Surveillance System (NNDSS) is a CDC collaboration with 57 state, local, and territorial public health jurisdictions to receive infectious disease data collected by 3,000 health departments for further analysis and use by CDC programs to better inform disease outbreaks and guide public health interventions. Currently, more than 120 diseases and conditions are under continuous nationwide surveillance.

With the evolution of technology and data and exchange standards, CDC continues to strengthen and modernize the infrastructure supporting NNDSS, allowing for more effective data-sharing and collaboration. Now in its final stage, the NNDSS Modernization Initiative (NMI) is providing the final standardization enhancements to maximize the system’s ability to provide more comprehensive, timely, and higher quality data to CDC programs. This improved data enables CDC programs to implement timelier public health interventions and develop more informed health policies. Throughout this initiative, CDC’s increased robustness of the NNDSS technological infrastructure has positioned the system to maximize the effective implementation of modern, interoperable, standardized data and exchange mechanisms.

During FY 2020, the investments made in technology and infrastructure produced returns with the initial retirement of some of CDC's older legacy systems. These investments also positioned CDC to efficiently receive data related to the COVID-19 outbreak. Within hours of the COVID-19 emergency declaration, CDC's NNDSS issued a COVID-19 event code, which states used to notify CDC of cases, and updated the Message Validation, Processing, and Provisioning System to accept COVID-19 case data and make it available to CDC programs. The data received as a result of this work positioned CDC's disease experts and Emergency Operations Center to better understand and support the national response.

As of December 2020, data indicate the high volume of COVID-19 messages transmitted to CDC helped significantly improve the results for Measure 8.B.1.4 to 49%, enabling CDC to exceed the goal for FY 2020. During the last quarter of FY 2020, NNDSS processed an average of 2,086,701 HL7 case notification messages, 17 times as many as were processed in January of 2020 (123,960), due mainly to the volume of reporting associated with the COVID-19 response. NNDSS expects reporting levels to return to normal levels once reporting of COVID cases declines. Based on this significant increase and realizing the prioritization of COVID-19 response activities has temporarily delayed implementation of Message Mapping Guides (MMG) for the other conditions, CDC has decided to maintain the 40% target for FY 2021 and FY 2022.

CDC has made tremendous progress in transmitting notifiable disease messages in HL7 format. At the onset of the response, 46 of the 57 reporting jurisdictions were at various stages of bringing new HL7 MMGs online; 42 of those jurisdictions have implemented at least one of the new HL7 messages and 31 of 42 have implemented more than one. Forty-five jurisdictions are using NNDSS to send their COVID-19 notifications to CDC. Of these, 28 jurisdictions are sending them in the HL7 format. In addition to the increase in the percentage of notifiable disease messages transmitted in HL7 format resulting from the COVID-19 response, data transmissions continue to improve and remain much more stable indicating that CDC has achieved a more routine and reliable mode.

With the influx of data modernization funding and the best practices adopted to date, CDC anticipates more states onboarding and for states to begin transmitting health data related to sexually transmitted diseases, vaccine preventable diseases, and foodborne diseases once we return to normal operations. Efforts in 2021 will focus on continued progress on and completion of the modernization process. As we move beyond 2021, NNDSS will transition from modernization to an operations mode that seeks continuous innovation and enhancement while laying the foundation for next generation case-based surveillance.

Performance Measures for Long-Term Objective: Improve access to and reach of scientific public health information among key audiences to maximize health impact

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 20221
8.B.2.1a Increase the electronic media reach of the <i>Morbidity and Mortality Weekly Report</i> (MMWR) through use of mechanisms such as the MMWR website and social media outlets, as measured by page views, social media followers, and email subscribers (Output)	FY 2020: 52,285,066 ¹ Target: 21,993,998 (Target Exceeded)	21,993,998	30,000,000	+8,006,002
8.B.2.2a Increase the electronic media reach of CDC Vital Signs through use of mechanisms such as the Vital Signs website and Adobe subscribers (Output)	FY 2020: 2,637,934 ² (Baseline)	2,769,831	2,908,323	+138,492

¹ Since 2018, the followers to CDC’s Main Twitter and Facebook accounts were added to this number. They share MMWR content each week.

² Baseline may change based on final data.

Epidemiology Performance Trends: During FY 2020, CDC provided critical epidemiological data and recommendations for solving public health problems to more than 161,000 clinicians and public health professionals through an extensive network of electronic communication channels for the *Morbidity and Mortality Weekly Report* (MMWR). This decline in number of subscribers from FY 2019 is the result of a change in how CDC subscribers are managed Agency-wide. During FY 2020, MMWR published 392 reports, a 21% increase from FY 2019. MMWR content is shared widely, with traditional and social media coverage averaging in the top three percent compared with other journals. Webpage views for MMWR have increased dramatically during FY 2020; thus, MMWR has exceeded its overall target by 137% (Measure 8.B.2.1a). This increase is largely due to the high volume of published reports related to two CDC emergency responses during FY 2020---the e-cigarette, or vaping, product use-associated lung injury (EVALI) response and the COVID-19 response. As a result of critical support to these two CDC responses during FY2020, the absolute number of pages published in the MMWR Weekly increased 48% compared to FY 2019. During September 30, 2019–January 17, 2020, MMWR

rapidly published 17 EVALI response reports; during February–November 20 *MMWR* published 155 COVID-19 response reports. The *MMWR* expects their reach to return to normal once COVID-19 begins to decrease and has set the FY 2022 target at 30,000,000.

The COVID-19 reports have been of high quality and have received a tremendous amount of attention, as highlighted by their high Altmetric scores. Of these reports, 58% (90/155 reports) received Altmetric scores of >500. This is notable as any report scoring >222 falls into the top 1% of research outputs tracked by Altmetric. Most of these reports continue to accrue attention weeks after they are released. In addition, COVID-19 reports published through September 29 already have been cited 3,846 times.

To more effectively communicate *MMWR* science to external audiences, during FY 2019, *MMWR* launched new communications guidance for all CDC reports. This guidance continues to provide modern communication strategies for the digital and social media age. This was the first update to *MMWR* communications guidance in more than 30 years. *MMWR* also partnered with influential public health partners to share content more effectively with their audiences. These strategies partially explain the substantial increase in web traffic during FY 2020.

CDC *Vital Signs* is a monthly science and communication program that targets the public, state and local health departments, healthcare professionals, and policymakers through an *MMWR* report, fact sheet, and print, broadcast, social, and electronic media on a specific, important topic. Because of COVID-19, the program pared back its releases in FY 2020: only one full issue (August) was released; six relied on an *MMWR* report alone (partial issue); and five were postponed or cancelled. Despite having fewer releases, uptake to the *Vital Signs* website continued to be brisk each month during Q1-Q3 FY 2020, including in months when no full or partial issue was released.

The measure was revised this cycle to better measure the electronic media reach of CDC *Vital Signs*. The previously used metric included *Vital Signs* website hits plus traffic to five social media channels. However, seeing the enormous public interest in COVID-19 in March 2020 and knowing that we measured social media hits to CDC generally, rather than exclusively to *Vital Signs*, we scaled back our key metric to exclude all five social media channels (Measure 8.B.2.2a). Continued use of the old metric would deliver inflated results in subsequent years, because subscribers usually maintain their subscription and only rarely unsubscribe to a channel, even after a response ends. The new metric is a more accurate measure of electronic reach to the program's content, since it measures reach to the *Vital Signs* website and Adobe subscribers alone.

Based on the revised measure, we set a five percent increase year-over-year in the target counts for electronic communication to the *Vital Signs* website alone. It is noteworthy that, in the past year, despite a reduced output, *Vital Signs* engaged many people who have maintained an active interest in *Vital Signs*' content, offering a testament to the quality and accessibility of this publication.

Performance Measures for Long Term Objective: Improve the efficiency and accuracy of public health and clinical laboratory testing

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
8.B.3.2b Increase the percentage of learners from public health and clinical laboratories who apply knowledge gained through CDC laboratory training in their work either by application to practices or an increased awareness of the topic ¹ (Outcome)	FY 2020: 90% Target: 93.5% (Target Not Met)	94%	94.5%	+0.5

¹Measure language refined. Methodology remains the same.

Laboratory Standards and Services Performance Trends: Maintaining a safe and prepared laboratory workforce is vital to the success of the national and global public health response system. CDC creates, delivers, and maintains trainings on laboratory topics such as infectious diseases, preparedness, and biosafety. Laboratory training courses provide basic training for new laboratory professionals, provide updates or refreshers on current methodology, help maintain regulatory compliance, and introduce new technology and techniques to improve test procedures.

In FY 2020, CDC delivered 83 laboratory systems trainings that included 47 online (eLearning) courses, one recurring webinar focused on bloodborne pathogens, five hands-on laboratory workshops (some recurring), and one virtual seminar focused on biological risk assessment. There were 20 offerings of the bloodborne pathogens webinar. There were 16 offerings of the hands-on workshops, including 12 packaging and shipping seminars. While the biological risk assessment seminars are traditionally held in-person, eight seminars were offered virtually this year. Overall, 90% of respondents indicated a positive training outcome.

In FY 2019, CDC delivered fewer trainings overall (75 versus 83 in FY 2020), though a greater proportion of trainings were in-person hands-on laboratory workshops (32 in FY 2019 compared to 12 in FY 2020). As a result of the COVID-19 pandemic, many in-person, hands-on laboratory workshops were either cancelled or transitioned to an online format in FY 2020. Traditionally, in-person hands-on laboratory workshops achieve higher positive training outcomes as there is a greater emphasis on skill development. Consequently, we suspect the slight drop in performance outcomes for Measure ID 8.B.3.2.b can be attributed to this modification.

Trainings are assessed in a follow-up online questionnaire by participants who successfully complete a course. The survey response, “recommended or initiated changes to personal or facility’s practices” and “reviewed personal or facility’s practices” are considered a positive indicator of the application to laboratory practices. The response, “improved awareness or understanding of the topic” is also considered a positive indicator. Improved awareness provides an appropriate threshold to gauge the effectiveness of the transfer of knowledge for courses that are knowledge-based, which account for the majority of CDC courses. For example, the objective of prepared foundational response knowledge should an incident occur. However, learners are not expected to put this knowledge into practice until it is required. In the interim, awareness and knowledge should be maintained through initial and refresher courses to support readiness to respond.

Evaluation of outcomes validates successful training in important laboratory knowledge and skills, while also providing insight into areas where training can be improved to enhance the impact on public health. Measure 8.B.3.2b provides an accurate picture of how learners apply knowledge gained from CDC laboratory training in

their work either by application of practices or an increased awareness of the topic. In FY 2020 this was 90% of learners which was below the target. While the specific improvement realized in the laboratory is unique to each training course, the application of knowledge gained in the training course provides a measure that can realistically be applied across training activities to best gauge training outcomes.

Public Health Workforce and Career Development

Performance Measures for Long Term Objective: Develop and implement training to provide for competent, sustainable, and empowered public health workforce able to meet emerging and future health challenges

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
8.B.4.2 Increase the number of CDC trainees in state, tribal, local, and territorial public health agencies ¹ (Output)	FY 2020: 333 Target: 294 (Target Exceeded)	294	294	Maintain
8.B.4.4 Increase the number of CDC’s free accredited courses passed by learners to earn Continuing Education (CE), demonstrating successful achievement of educational content (Output)	FY 2020: 505,992 Target: 390,000 (Target Exceeded)	430,000	470,000	+40,000

¹Includes ALL (new and continuing) CDC-funded trainees in EIS, PHPS, PMR/F, Public Health Associate Program (PHAP), Emerging Infectious Diseases (EID) Laboratory Fellowship, CDC/CSTE Applied Epidemiology Fellowship, Health Systems Integration Program (HSIP), Applied Public Health Informatics Fellowship (APHIF), and the Informatics Training-in-Place Program (I-TIPP).

Performance Trends: CDC fellowship programs promote experiential service and mentored learning at the agency and in the field. All of our programs offer unique experiences in one of many public health critical disciplines, including applied epidemiology, public health management, and informatics. This focus on service while learning allows our fellows and trainees to fill critical workforce needs at CDC and in state, tribal, local, and territorial (STLT) public health agencies, while training for careers in public health.

CDC increased the number of fellows and trainees in STLT public health agencies from 295 trainees in FY 2019 to 333 in FY 2020. Increased placements were made possible due to COVID-19 supplemental funding to fellowship programs that place fellows in STLT public health agencies rather than at CDC headquarters (Measure 8.B.4.2). CDC expects trainee placements to return to normal and will maintain current targets for FY 2021 and FY 2022.

Focusing funding on field placement programs offers our fellows and trainees an invaluable opportunity to work alongside other professionals across a variety of public health settings. Throughout these training programs, CDC provides hands-on experience that will serve as a foundation for our fellows’ public health careers. After completing CDC programs, graduates are qualified to apply for jobs with public health agencies and organizations and data shows that the majority of our fellowship graduates stay in federal, state, or local public health.

In 2008, the Association of Schools and Programs in Public Health warned that by 2020, “the nation will be facing a shortfall of more than 250,000 public health workers.” This warning has been proven during the ongoing COVID-19 pandemic and the overburdening of frontline public health workers. In addition, in the next five to ten years, a substantial number of long-time public health workers plan to leave their jobs or retire, taking with them critical knowledge and experience. The next generation of public health professionals needs to be trained and prepared to fill these vacancies. Additionally, the current workforce must stay up-to-date on the latest

science, guidelines, and recommendations from CDC to inform both public health and healthcare practice. An effectively trained public health workforce is our first line of defense against disease outbreaks, like COVID-19, natural disasters, and other health threats domestically and globally. CDC designs, develops, and accredits quality learning opportunities and ensures these opportunities are available to the public health and health care workforce. CDC provides continuing education (CE) for seven different professional disciplines, which are required to keep skills and licensures current, and are delivered at little to no cost to the learner. Access to accredited training opportunities is essential for the public health workforce to maintain and improve knowledge and skills for the greatest impact on health outcomes.

The accredited learning opportunities CDC provides to the public health workforce help ensure workers are able to maintain licensure and certification requirements, improve knowledge and skills, and ultimately enhance their overall competency. In FY 2020, CDC awarded over 671,165 free CE credits, contact hours, and units to more than 190,106 unique health professionals who earned CE credits 505,992 times resulting in over \$6.8 million in savings to the workforce (Measure 8.B.4.4). Although FY 2020 results were higher than usual due to the COVID-19 response, CDC anticipates continued demand for accredited learning opportunities through the response and has adjusted FY 2021 and FY 2022 targets accordingly.

OCCUPATIONAL SAFETY AND HEALTH

National Occupational Research Agenda (NORA)

Performance Measures for Long Term Objective: Conduct research to reduce work-related illnesses and injuries

Contextual Indicator	Most Recent Result	FY 2025 Target
9.1.4 Reduce employer reported nonfatal work-related injuries resulting in one or more days from work (per 10,000 FTE)	FY 2019: 86.9	68.9

Performance Trends: CDC’s role in occupational safety and health is to conduct research and transfer findings into practice through partners and stakeholders, rather than implement workplace safety and health programs. This contextual indicator is an example of the type of health outcome to which CDC’s research contributes. The national rate of injuries resulting in one or more days away from work per 10,000 FTE (full-time equivalents) has been trending downward for several years, from 104.3 in 2011 to 86.9 in 2019 (Measure 9.1.4). To contribute to further reductions, CDC is focusing its research on high-burden areas such as musculoskeletal disorders (sprains and strains) and motor vehicle crashes, and is investigating the potential benefits and risks of emerging technologies such as robots and exoskeletons.

CDC is developing a new measure to track achievement of a plan to implement recommendations received during the program reviews conducted in FYs 2017-2019. All five of the programs reviewed exceeded the target score of 7 out of 10, and received numerous recommendations from independent panels of peer reviewers. Several key recommendations are broadly applicable to many of CDC’s occupational safety and health research programs. The NIOSH Board of Scientific Counselors, a Federal Advisory Committee, will review the plan and score progress each year from FY 2021-2025.

Other Occupational Safety and Health Research

Performance Measures for Long Term Objective: Reduce workplace illness, injury, and mortality in targeted sectors

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
9.2.2c Increase percentage of active coal mines in the U.S. that possess NIOSH-approved plans to perform surveillance for respiratory disease: a) underground mines (Outcome)	FY 2020: 99% Target: 93% (Target Exceeded)	93%	93%	Maintain
9.2.2d Increase percentage of active coal mines in the U.S. that possess NIOSH-approved plans to perform surveillance for respiratory disease: b) surface mines (Outcome)	FY 2020: 99% Target: 93% (Target Exceeded)	93%	93%	Maintain

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
9.2.3c Increase the number of product and manufacturing site audits completed to ensure the quality of NIOSH certified respirators (Outcome)	FY 2020: 781 Target: 250 (Target Exceeded)	250	250	Maintain
9.2.3d Reduce the percentage of respirable coal mine dust overexposures for the tailgate shearer operator (Outcome)	FY 2020: 3.9% Target: 5.5% (Target Exceeded)	4.5%	3.0%	-1.5
9.2.4 Achieve and sustain the percentage of respondents indicating that NIOSH HHEs helped improve workplace conditions ¹ (Outcome)	FY 2019: 93% Target: 90% (Target Exceeded)	90%	90%	Maintain
9.B Number of certification decisions issued for personal protective equipment (Output)	FY 2020: 809 Target: 400 (Target Exceeded)	400	400	Maintain
9.E Number of research articles published in peer-review publications (Output)	FY 2020: 293 Target: 275 (Target Exceeded)	275	250	-25
9.K Annual NIOSH website visits (Output)	FY 2020: 24,080,537 Target:7,000,000 (Target Exceeded)	7,000,000	7,000,000	Maintain
9.L Number of NIOSH Science Blog Subscribers (Output)	FY 2020: 42,725 Target: 58,000 (Target Not Met)	44,000	48,000	+4,000

¹ This measure is reported as a five-year average because the number of HHEs requested varies and therefore year-to-year fluctuations are normal and expected.

Performance Trends:

Reducing Hazardous Exposures

Exposure to coal mine dust causes various pulmonary diseases, including coal workers’ pneumoconiosis and Chronic Obstructive Pulmonary Disease (COPD)³⁹⁵. CDC works with coal mines in the U.S. to develop plans to perform surveillance for pneumoconiosis and COPD. In FY 2020, 99% of underground mines and 99% of surface mines had approved surveillance plans (Measures 9.2.2c and 9.2.2d). This was achieved through extensive outreach efforts in partnership with the Mine Safety and Health Administration (MSHA). The targets remain at

³⁹⁵ <https://www.cdc.gov/copd/index.html>.

93% percent as CDC works with mines to incorporate spirometry into their plans, a requirement recently added by MSHA.

Tailgate shearer operators traditionally have shown the greatest percentage of samples that exceed allowable limits for dust exposure because they are positioned in close proximity to the longwall cutting machine (shearer), where there are high levels of dust (Measure 9.2.3d). The percentage of respirable coal mine dust overexposures for tailgate shearer operators dropped from 13.1% in FY 2017 to 3.9% in FY 2020, which can be attributed to use of the continuous personal dust monitor (CPDM) and the lower permissible level of coal dust exposure (2.0 to 1.5 milligrams per cubic meter). The near real-time feedback from the CPDM allows miners to make adjustments to their work practices or operating parameters to lower dust levels if they are approaching the limit.

An estimated 20 million workers use Personal Protective Equipment to protect themselves from death, disability, and illnesses. CDC's Personal Protective Technology program provides expertise from many scientific disciplines to advance federal research on respirators and other personal protective technologies for workers. In FY 2020, CDC completed 781 product and manufacturing site audits, more than three times as many as recent years (Measure 9.2.3c). COVID-19 caused a disruption in CDC's routine site audit activities for 2020 as some international countries and some US states imposed strict travel restrictions. At the same time, a national need emerged to understand the quality of international respirators entering the US market. CDC created new audit assessments to inform respirator purchasers, users, and government agencies at the federal, state and local level about the quality of these products. Through an online submission form, companies could submit requests to have international or stockpiled respirators evaluated. The response was overwhelming and has resulted in over 500 audits. These efforts contributed to improved worker protection as 62 respirators manufactured from 62 different manufacturers were removed from the FDA Emergency Use Authorization (EUA) list in part due to the results of these assessments. This accounts for the large number being reported in 2020.

Additionally, FY 2020 data demonstrate improvements in the inventory and quality of respiratory protection for workers in all industry sectors through 809 certified respirator decisions, a 45% increase over FY 2019 (Measure 9.B). COVID-19 created an urgent need to increase the supply of NIOSH-approved respirators and CDC rose to meet this challenge, significantly increasing the rate of approval decisions for devices submitted. Notable parts of this effort include the first NIOSH-approved elastomeric half mask respirator without an exhalation valve and a new powered air purifying respirator; these are reusable options with the same, or greater, level of protection as single-use N95 respirators.

CDC responds to employer, employee, and union requests for workplace Health Hazard Evaluations³⁹⁶ (HHEs). CDC assesses the workplace and employees' health by reviewing records and/or conducting on-site testing. Based on the findings, CDC recommends ways to reduce hazards and prevent work-related illness. CDC conducts a follow-up survey of HHE participants to evaluate the program, including whether workplace conditions improved as a result of CDC's recommendations (Measure 9.2.4). The five-year average percentage of respondents who felt NIOSH helped improve workplace conditions was 93% in 2020, three to four percentage points higher than recent years.

Expanding Occupational Safety and Health Influence

CDC communicates current research and recommendations on occupational safety and health (OSH) with its partners and stakeholders through several avenues. These include its website and social media presence, research publications and related promotions, and federal cross-agency and cross sector committee membership.

³⁹⁶ http://www.cdc.gov/niosh/hhe/pdfs/HHE_2014_Annual_Report.pdf.

- Website: There were 24,080,537 visits to CDC’s NIOSH website in FY 2020, more than triple the number in FY 2019 (Measure 9.K). Much of the traffic increase was related to COVID-19. The number of web visits is expected to level off in the future as some traffic moves from the web to mobile applications and videos.
- Social Media: NIOSH’s Science Blog³⁹⁷ provides a plain language summary of CDC’s OSH research findings or new guidance, and provides links to more detailed information and other resources elsewhere on the NIOSH website. The number of texting and email subscribers to the NIOSH Science Blog was 42,725. This is a substantial rebound from FY 2018, when subscribers fell by two-thirds after a change in how CDC subscribers were managed Agency-wide. Since then, CDC has been working to improve this number by encouraging subscribers of other products, like the NIOSH eNews newsletter, to sign up for Science Blog emails. This strategy has doubled the number of subscribers compared to FY 2019. (Measure 9.L). The Science Blog also had 73 posts in FY 2020, several of which provided much-needed answers to common questions about respiratory protection for workers from COVID-19. For example, one post described the difference between respiratory protection (i.e. N95s and other respirators), which should be reserved for workers who need it to do their jobs safely, and source control (i.e. masks and cloth face coverings), which CDC recommends for the general population to wear³⁹⁸.
- Publications: CDC published 293 research articles in peer-reviewed publications in FY 2020, a similar level to FYs 2018 and 2019 (Measure 9.E). Fewer publications are expected in FY 2020 and beyond, as CDC conducts fewer occupational safety and health studies due to budget constraints and the retirement of prolific senior scientists.
- Outreach: CDC also produced 176 information products to expand the reach of many of these publications in FY 2020 with other audiences, such as employers, workers, unions, public health departments, and the general public. These are in addition to the more than 40 fact sheets, guidance documents, and other products for employers and workers coordinated through the Emergency Operations Center COVID-19 response. In FY 2020 CDC released Faces of Black Lung II³⁹⁹, follow-up to the first Faces of Black Lung video produced over ten years ago. This new video demonstrates how black lung is occurring in younger miners, raises awareness of the personal costs of the disease, and motivates workers to participate in free and confidential health screenings.
- Consensus standards: In FY 2020, CDC participated in dozens of voluntary consensus standards committees that often made use of CDC research findings related to occupational safety and health. Voluntary consensus standards committees are groups of industry and government representatives that work together to decide on rules of standardization to maximize compatibility, interoperability, safety, and quality. For example, in FY 2020 CDC contributed to the standard ANSI/ASSP A10.46-2020: Hearing Loss Prevention For Construction And Demolition Workers, which provides guidance on the situations, tools, tasks, and work areas that may result in exposures at or above the NIOSH Recommended Exposure Limit (REL) of 85 dBA. It also includes recommendations for when and how to control noise hazards.

³⁹⁷ <http://blogs.cdc.gov/niosh-science-blog/>.

³⁹⁸ <https://blogs.cdc.gov/niosh-science-blog/2020/09/08/source-control/>.

³⁹⁹ <https://www.cdc.gov/niosh/docs/video/2020-109d/default.html>.

GLOBAL HEALTH

Global HIV/AIDS

Performance measures for Long Term Objective: Partner with ministries of health, international and local partners and other United States Government (USG) agencies to achieve the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) goals of reducing the worldwide rate of new HIV infections and saving lives by focusing on highly effective, evidence-based HIV interventions and quality laboratory service: (1) antiretroviral treatment for prevention and health benefits, (2) voluntary medical male circumcision, and (3) laboratory and point of care testing site quality improvement programs

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.A.1.5 Increase the number of adults and children with HIV infection receiving antiretroviral therapy (ART) ¹ (Output)	FY 2020: 10,489,699 Target: 9,114,659 (Target Exceeded)	10,489,699	9,500,154	-989,545
10.A.1.7 Increase the number of males age 15 and over circumcised as part of the minimum package of male circumcision for HIV prevention services ² (Output)	FY 2020: 1,447,149 Target: 700,000 (Target Exceeded)	700,000	700,000	Maintain
10.A.1.8 Increase the total number of laboratories and Point of Care Testing sites enrolled in a continuous quality improvement program (Output)	FY 2020: 9,991 Target: 11,454 (Target Not Met)	8,543	7,056	-1,487

¹ Targets and results reflect all people on ART, not just those with advanced HIV infection.

² Targets and results reflect the revised PEPFAR definitions of support that were implemented in January 2014. The numbers include individuals who receive PEPFAR/CDC support at direct service delivery sites and technical assistance for service delivery improvement sites.

Performance Trends: Global HIV funding supports CDC's essential role in implementing the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) in more than 45 countries and regions. Reaching epidemic control in the fight against HIV is a priority for the U.S. Government. Preventing new HIV infections is achievable and critical to stem the global HIV epidemic, even in the absence of a HIV vaccine.

Through its work with PEPFAR and in-country partners, CDC has helped reduce AIDS-related deaths by focusing on accountability, quality, and the use of data to improve decision-making and to enhance program focus.

In partnership with local governments and Ministries of Health in 40 countries, CDC-supported programs helped provide ART to 10,489,699 men, women, and children living with HIV, of the 17.1 million supported by PEPFAR (Measure 10.A.1.5). Even through the COVID-19 pandemic, CDC met and exceeded its treatment target for FY 2020, equating to approximately 61% of people supported by PEPFAR on treatment. CDC headquarters staff will continue to work with in-country CDC staff and partners to find those who are HIV positive and link them to treatment. CDC will do this through:

(1) Continued collaboration with Ministries on planning and implementing Test and Start;⁴⁰⁰

⁴⁰⁰ <https://www.cdc.gov/globalhivtb/who-we-are/resources/keyareafactsheets/scaling-up-hiv-care-and-treatment.pdf>.

(2) Implementing strategies, such as differentiated service delivery models, that increase retention and adherence to antiretroviral therapy;

(3) Ensuring accessibility and quality of viral load testing for monitoring;

(4) Expand opportunities for antiretroviral optimization, providing for easier and less resistant treatment options.

In FY 2020, CDC-supported partners in 13 high priority PEPFAR countries performed 1,447,149 voluntary medical male circumcisions (VMMCs) of males aged 15 and older by a qualified clinician, exceeding the FY 2020 target (Measure 10.A.1.7). CDC collaborates with country programs to scale-up VMMC by expanding task shifting, increasing the number of dedicated VMMC teams, and supporting mobile services. CDC continues to focus on safety and has developed an adverse events management and reporting guide for use in both VMMC service programs and community health facilities which may see clients in follow up. In addition, CDC continues to help programs address rare cases of tetanus among VMMC clients and is adapting service delivery programs to reach men at higher risk of HIV. CDC will continue to focus on outreach services to hard-to-reach populations in the highest burden regions and evaluating sustainable program delivery models for programs reaching their established goals of circumcising at least 80% of men in their communities.

Laboratory testing is the only way to diagnose and confirm existence of disease, gauge if medications are working, and measure overarching vital indicators. Point of Care Testing (POCT) sites allow traditional laboratory testing to be completed near the point of care or near the patient. CDC supports a Continuous Quality Improvement (CQI) process for laboratories and Point of Care Testing (POCT) sites to support accuracy of results. The CQI process works with sites to improve quality by continuously evaluating how they work and identifying ways to improve their processes. This reduces waste, increases efficiency, and increases staff (internal) and patient (external) satisfaction. The more laboratory and POCT sites that participate in CQI processes and receive accreditation or become certified, the more trust is built into the system. Trust in the accuracy of tests allows those who are found to be HIV positive to be immediately placed on medications which reduces the virus in the blood, lowers opportunity for continued HIV transmission, and moves CDC closer to its goal of controlling the HIV epidemic. By the end of 2020, CDC supported an enrollment of 9,991 laboratories or POCT sites in CQI programs globally, below the FY 2020 target (Measure 10.A.1.8). In 2020, a net 1,451 laboratories and POCT sites transitioned from CDC funding that resulted in lower CQI enrollment. In future fiscal years, additional sites could be transitioned. CDC's total share of sites enrolled in CQI through PEPFAR was 80 in FY 2020.

CDC provides scientific expertise to support all CDC Global HIV countries working directly with Ministries of Health to achieve and sustain HIV epidemic control and address the needs of the nearly 10.5 million people receiving antiretroviral treatment. In FY 2022, CDC anticipates maintaining as many technical assistance services as possible and reestablishing any technical assistance relationships lost during the COVID-19 pandemic. CDC will need to reconfigure its technical assistance to individual ministries of health and laboratories due to anticipated decline in resources (i.e., personnel with the appropriate subject matter expertise), compared to FY 2020 and 2021. Therefore, targets for measures 10.A.1.5 and 10.A.1.8 will decrease compared to previous targets.

Global TB

Performance measures for Long Term Objective: Partner with ministries of health, international and local partners and other United States Government (USG) agencies to speed up progress in the fight against TB worldwide, by focusing on highly effective, evidence-based TB interventions, to include reaching the high-risk HIV population

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.G.1 Increase the number of adults and children with TB and HIV infection receiving antiretroviral therapy (ART) (Output)	FY 2020: 105,151 Target: 130,000 (Target Not Met)	105,151	65,703	-39,448

Performance Trends: A fourth of the world’s population – 1.7 billion people – are infected with tuberculosis (TB) bacteria, with nearly 10 million becoming ill with the disease in 2019. Making TB the leading cause of death by an infectious disease worldwide and the leading cause of death for those living with HIV (PLHIV) for that year. In 2019, 1.4 million people died from TB, including 208,000 PLHIV. Effectively addressing TB⁴⁰¹ in the United States requires global TB intervention. CDC plays an important role in this effort and is an integral part of the U.S. Government’s efforts to address global TB through PEPFAR, the Global Health Security Agenda⁴⁰² (GHSa), and the National Strategy for Combating Antibiotic-Resistance Bacteria⁴⁰³.

To speed up progress against TB, CDC is developing best practices in laboratory science to diagnose TB, supporting cutting-edge research to create better TB screening tests, helping to create the global roadmap to stop TB in children, and establishing effective strategies to end TB transmission in health facilities. Access to and initiation of ART for those found to be living with HIV and TB is imperative to reducing the burden of disease, and in an effort to support this strategy, CDC’s global TB program initiated ART with 105,151 people living with HIV (PLHIV) and TB in FY 2020 (Measure 10.G.1). The global TB program did not meet the FY 2020 target. To increase the number of people on ART, CDC supports the provision of ART within TB medical clinics as an integrative approach, providing frequent TB testing of HIV positive clients, and providing TB treatment at HIV treatment centers. In a continued effort to end TB, CDC will focus on TB preventive treatment (TPT) for PLHIV, TB contacts, and young children. With the COVID-19 pandemic, TB clinics in many countries were significantly slowed in their ability to provide treatment support. CDC saw a decline in access to needed treatment and is working to incorporate TPT and TB treatment into differentiated service delivery models often found in HIV clinics. Due to changes in support, in FY 2022, CDC will have to reconfigure HIV technical assistance support which will affect TB ART treatment support thus, targets for Measure 10.G.1 will decrease from the previous year.

Global Immunization

Contextual Indicator for Long Term Objective: Help domestic and international partners achieve World Health Organization's goal of global polio eradication

Contextual Indicator	Most Recent Result	FY 2025 Target
10.B.1.3 Reduce the number of countries in the world with endemic wild polio virus (Outcome)	FY 2019: 3	0

Performance measure for Long Term Objective: Help domestic and international partners achieve World Health Organization's goal of global polio eradication

⁴⁰¹ <https://www.cdc.gov/globalhivtb/who-we-are/success-stories/success-story-pages/commoninterest.html>.

⁴⁰² <https://www.cdc.gov/globalhealth/security/ghsagenda.htm>.

⁴⁰³ <https://www.hhs.gov/sites/default/files/carb-national-action-plan-2020-2025.pdf>.

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.B.1.2a Increase the number of children vaccinated with Polio Vaccine as a result of non-vaccine operational support funding to implement national or subnational supplemental immunization campaigns in Asia, Africa, and Europe (Output)	FY 2019: 14,412,001 Target: 5,000,000 (Target Exceeded)	5,000,000	5,000,000	Maintain

Contextual Indicator for Long Term Objective: Work with global partners to reduce the cumulative global measles-related mortality by 95% compared with CY 2000 estimates (baseline 777,000 deaths) and to maintain elimination of endemic measles transmission in all 47 countries of the Americas

Contextual Indicator	Most Recent Result	FY 2025 Target
10.B.2.1 Reduce the number of global measles-related deaths (Outcome)	FY 2019: 207,500	25,000

Performance measures for Long Term Objective: Work with global partners to reduce the cumulative global measles-related mortality by 95% compared with CY 2000 estimates (baseline 777,000 deaths) and to maintain elimination of endemic measles transmission in all 47 countries of the Americas

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.B.2.2 Maintain number of non-import measles cases in all 47 countries of the Americas as a measure of maintaining elimination of endemic measles transmission (Outcome)	FY 2019: 1 Target: 0 (Target Not Met)	0	0	Maintain
10.B.2.3 Increase the number of countries that achieve at least 90% immunization coverage in children under 1 year of age for DTP3 (three shot series of vaccines covering diphtheria, tetanus, and pertussis) (Outcome)	FY 2019: 125 Target: 143 (Target Not Met)	143	143	Maintain

Efficiency Measure for Global Immunization

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.B.E.1 Increase the percentage of the annual budget that directly supports the program purpose in the field (Efficiency)	FY 2019: 85% Target: 88% (Target Not Met)	85%	85%	Maintain

Performance Trends: Global immunization funding advances polio eradication and measles mortality reduction and elimination efforts. CDC is the lead technical monitoring agency for the Independent Monitoring Board of

the Global Polio Eradication Initiative⁴⁰⁴ (GPEI). The number of countries reporting endemic wild poliovirus (WPV) remained at three countries in FY 2019 (Measure 10.B.1.3). Although three years have passed since cases were reported in Nigeria, the country was not removed from the endemic country list until the African Region Polio Certification Committee certified Nigeria to be polio-free on August 25, 2020, at the end of FY 2020. This prevents Nigeria's removal from the endemic country list for FY2019 results.

Countries at highest risk for polio importation and circulating vaccine-derived poliovirus outbreaks have low routine immunization coverage levels (less than 80%), sub-optimal outbreak response, and weak health systems. CDC's expanded measure of polio vaccination (Measure 10.B.1.2a) improves accuracy by measuring children vaccinated by all types of polio vaccine. It reflects changes to the composition of the global supply of polio vaccine and CDC's enhanced financial support for operational costs of supplemental vaccination rounds, including social mobilization. In FY 2019, CDC vaccinated 14,412,001 children with polio vaccine in Asia, Africa, and Europe, exceeding the targets by over 9 million children. The increased number of outbreaks of vaccine-derived poliovirus across Africa and parts of Indonesia and Papua New Guinea resulted in an increased need for special vaccination campaigns to compensate for inadequate coverage by routine immunization systems in high risk countries. However, CDC does not anticipate the same level of performance in subsequent years and has set FY 2022 targets to remain level to FY 2021. CDC's lead role as one of the five core partners in the Global Polio Eradication Initiative (GPEI) will be limited which will eliminate the capacity to verify interruption of poliovirus circulation in 10 high-risk countries. However, CDC will continue to work with partners to reach its vaccination targets, focusing efforts on those areas that have been historically difficult to reach due to security issues and/or political instability.

Reducing cumulative global measles-related mortality by 95% compared with CY 2000 estimates presents unique challenges. Since CY 2008, CDC's collaboration with the Pan American Health Organization has helped ensure cases are detected and contained when measles cases are imported to the Americas (Measure 10.B.2.2). The collapse of public health systems in Venezuela resulted in that country re-establishing endemic transmission of measles in late 2018. The Measles and Rubella Initiative updated the formula for calculating global measles mortality in 2018 with the following parameters: new measles vaccination coverage and annual country measles surveillance data. The updated formula uses and is responsive to annual trends in surveillance data, allowing the model to reflect measles outbreaks better. The actual results from 2017 onward reflect the improved measurement. Measles mortality rose to 207,500 in 2019, representing a 73% decrease since FY 2000 (Measure 10.B.2.1). The 46% increase from 2018 reflects ongoing outbreaks on nearly every continent in 2019, showing a failure to vaccinate children on time with two doses of measles-containing vaccines (MCV1 and MCV2) as the main driver of increased cases and deaths. CDC is working closely with its partners to implement improvements to the quality of the supplemental immunization activities and target efforts to areas with high measles-related mortality.

The number of countries that achieve at least 90% immunization coverage in children under one year of age for DTP3 (third dose diphtheria, tetanus, pertussis vaccine) is the globally accepted performance indicator for national immunization programs. The number of countries meeting this coverage threshold for DTP3 decreased from 130 in FY 2018 to 125 in FY 2019 (Measure 10.B.2.3). The decrease comes from countries that were not able to maintain gains from recent years, falling below the 90% coverage level. Fourteen countries report coverage of 87-89%, indicating how close many nations are to reaching the target. To assist both countries who struggle to maintain gains and those that struggle to reach the 90% target, CDC is conducting evaluations to study supply and demand factors that can impact and increase coverage.

In FY 2019, 85% of program funding directly supported field-related activities (Measure 10.B.E.1), maintaining the same percentage from FY 2018. CDC continues efforts to minimize administrative overhead while maximizing direct spending for field-related activities. Continued plans to achieve the 85% threshold in FY 2022

⁴⁰⁴ <http://www.polioeradication.org/>.

include temporarily assigning a higher percentage of staff to the field and increasing the number of days spent in the field. Once active circulation of poliovirus ceases, CDC will return to normal emergency operations center activation staffing levels and begin normal polio eradication activities until global certification is achieved. In FY 2022, CDC anticipates the same level of resources (i.e., personnel with appropriate subject matter expertise) as in FY 2021.

Global Health Protection

Performance measure for Long Term Objective: Build outbreak detection and response public health capacity in support of the International Health Regulations (2005)

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.E.2 Percentage of outbreak investigations that received laboratory support (Output)	FY 2019: 60% Target: 70% (Target Not Met)	80%	N/A	N/A
10.E.4 Number of public health events of international importance monitored and reported (Output)	FY 2020: 94 Target: 135 (Target Not Met)	140	N/A	N/A

Performance Trends: CDC’s Global Health Protection work, both in headquarters and the field, limits national, regional, and international global health security threats. Following the launch of the Global Health Security Agenda (GHTA) in FY 2014, CDC continues to work closely with U.S. Government and international partners to improve disease prevention, detection, and response.

CDC works to improve laboratory capacity to rapidly identify and respond to pathogens of public health significance in host countries and across regions. A confirmed diagnosis allows countries to conduct appropriate intervention or response activities, which is crucial for immediate outbreak containment and prevention of future outbreaks. This data was originally gathered through the Global Disease Detection (GDD) Centers. In 2018, the methods for capturing this data shifted when the Division of Global Health Protection's Division Wide Indicators (DWIs) were put in place to monitor the number of reported outbreaks. Where GDD Centers monitored outbreaks in 10 countries, the DWI’s expanded the scope to 28 countries, significantly impacting this measure’s outcome. This shift was especially noticeable in FY 2019, when monitoring found that 60% of outbreak investigations conducted received laboratory support, whereas 79% of investigations received this support in 2018 (Measure 10.E.2). CDC will retire this measure as it is no longer the best reflection of CDC’s activities to support countries and their laboratory work. However, CDC will continue to provide technical assistance to host country partners as they develop their National Laboratory and Response Plans, to encourage host country Ministries of Health to perform comprehensive outbreak investigations with laboratory confirmation testing and to encourage requests for laboratory support.

As part of CDC’s global health protection activities, CDC teams are strategically positioned in other countries and at headquarters, including in CDC’s Global Disease Detection Operations Center (GDDOC). The GDDOC uses event-based surveillance methods, including internet scanning for key words in over 40 languages, to detect, monitor, and report on public health events of international importance (Measure 10.E.4). Though timely monitoring and reporting is crucial for rapid response to an outbreak and stopping diseases at their source, the number of public health events occurring each year can vary widely and this particular measure is not an effective indicator of CDC’s Global Health Protection program success. Due to this, CDC will retire this measure.

CDC will continue to work to develop a skilled public health workforce poised to respond to outbreaks, build laboratory capacities to identify diseases, strengthen surveillance systems to assist in early detection, and

establish emergency management systems to organize response. These activities all contribute to the early detection and response to a disease outbreak and minimize the outbreak impact.

Performance measures for Long Term Objective: To increase the number of public health staff skilled in epidemiology and surveillance in low and middle-income countries

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.F.1c Number of cumulative Field Epidemiology Training Program (FETP) – Frontline graduates (Output)	FY2019: 12,197 Target: 11,015 (Target Exceeded)	12,435	12,555	+120
10.F.1d Number of cumulative Field Epidemiology Training Program (FETP) – Intermediate and FETP – Advanced graduates (Output)	FY2019: 6,522 Target: 6,180 (Target Exceeded)	6,780	6,915	+135

Performance Trends: International Field Epidemiology Training Programs (FETP) are recognized worldwide as an effective means to strengthen countries’ capacity in surveillance, epidemiology, and outbreak response. These graduates strengthen public health capacity so individual countries are able to transition from U.S.-led global health investments to more long-term host country ownership. CDC will retire its FETP measures and replace them with two new measures that explicitly track total FETP graduates from Frontline and Advanced/Intermediate tiers. Frontline is a three-month program that aims to increase the number of capable public health workers in a community setting, while Intermediate (a nine-month program for mid-level health officials) and Advanced (two-year, intensive program that aims to prepare leaders for work at the national level) tiers help countries meet International Health Regulation guidelines. In FY 2019, there were 12,197 Frontline program graduates and 6,522 Intermediate/Advanced program graduates, exceeding the targets for both measures (Measures 10.F.1c-d). By tracking the number of people who graduate from FETP – Frontline and Intermediate/Advanced programs every year, CDC can better gauge its impact on developing other countries’ abilities to prevent, detect, and respond to disease outbreaks.

Parasitic Diseases and Malaria

CDC Contextual Indicators for Long Term Objective: Decrease the rate of deaths from all causes in children under five in the President’s Malaria Initiative⁴⁰⁶ (PMI) target countries

Contextual Indicators	Most Recent Result	FY 2025 Target
10.C.1 Increase the percentage of children under five years old who slept under an insecticide-treated bed net the previous night in PMI target countries ¹ (Outcome)	FY 2019: 56% (median)	85%

¹ PMI was implemented in each of the 19 focus countries by 2012. Therefore starting in FY 2014, data from all 19 countries were included to calculate the median, using the most recent estimate available from each country.

Budget Output Measure for Long Term Objective: Decrease the rate of deaths from all causes in children under five in the President’s Malaria Initiative (PMI) target countries

⁴⁰⁵ Traicoff D et al. 2015. Strong and flexible: Developing a three-tiered curriculum for the Regional Central America Field Epidemiology Training Program. *Pedagogy in Health Promotion* 1(2): 74–82. <http://php.sagepub.com/content/1/2/74.full.pdf+html>.

⁴⁰⁶ <http://www.pmi.gov/>.

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.C.A The number of CDC authored publications that inform the global evidence for malaria control and prevention programs (Output)	FY 2019: 130 Target: 150 (Target Not Met but Improved)	155	155	Maintain

CDC Performance Measure for Long Term Objective: To deliver timely and accurate reference diagnostic laboratory services for the detection of parasites in specimens submitted by domestic and international public health partners to CDC

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
10.C.4 The percentage of laboratory test results reported within the expected turn-around time upon receipt by CDC labs (Outcome)	FY 2019: 98% Target: 90% (Target Exceeded)	90%	90%	Maintain

Performance Trends: Malaria prevention and treatment tools are among the most cost-effective interventions available to improve global maternal and child health and survival. CDC’s research informs the development of new tools to manage and mitigate threats from drug and insecticide resistance, guides future program and policy decisions, and builds the capacity of host country governments through strategic partnerships.

The President’s Malaria Initiative⁴⁰⁷ (PMI), which is led by USAID and co-implemented together with CDC, has been scaling up the use of malaria prevention and treatment tools since 2005, and currently works in the Greater Mekong Subregion and in 24 countries in sub-Saharan Africa.

The percentage of children under five years old who slept under an insecticide-treated bed net the night before was maintained at 56% in FY 2019 (Measure 10.C.1). National surveys are routinely conducted every two to three years which limits direct comparison from one year to the next. While no PMI countries have achieved the 85% goal, several countries are closing the gap with almost half of the countries reporting having over 65% of children under five years sleeping under an insecticide-treated bed net the night before. PMI anticipates this trend will continue the longer countries are part of PMI and pursue full scale-up of interventions.

CDC continues to develop global policy documents, guidelines and peer-reviewed scientific publications. In addition to the 14th Annual PMI Report to Congress⁴⁰⁸, CDC co-authored key reports such as "Estimating malaria burden among pregnant women using data from antenatal care centers in Tanzania: a population-based study,⁴⁰⁹" which describes how information from nationwide malaria screening for pregnant women within Tanzania’s antenatal care system shows a strong correlation with reported malaria cases in children under 5. These findings suggest that routine screening of pregnant women can provide useful information about malaria transmission levels.

CDC also co-authored "Impact of Community-Based Mass Testing and Treatment on Malaria Infection Prevalence in a High-Transmission Area of Western Kenya: A Cluster Randomized Controlled Trial⁴¹⁰," which

⁴⁰⁷ <http://www.pmi.gov/>.

⁴⁰⁸ <https://www.pmi.gov/docs/default-source/default-document-library/pmi-reports/2020-pmi-fourteenth-annual-report.pdf>.

⁴⁰⁹ <https://www.sciencedirect.com/science/article/pii/S2214109X1930405X?via%3DIhub>.

⁴¹⁰ <https://academic.oup.com/cid/article/doi/10.1093/cid/ciaa471/5824323>.

found that mass testing and treatment did not significantly reduce malaria infection or clinical malaria prevalence over two years.

The number of peer-reviewed papers published increased from 89 in FY 2018 to 130 in FY 2019, which did not meet the target, but represented a significant increase (Measure 10.C.A). All publications contribute to growing the evidence base to support policy and program needs. CDC anticipates some variation in the number of publications from year to year based on the publication process and the timelines for study initiation, completion and data analysis. As a significant health concern in the U.S., malaria, and other parasitic diseases have a tremendous impact on global morbidity and mortality, due to increased international travel, importations, and domestically acquired infections. CDC's parasitic disease labs serve as global and national resources for ensuring efficient and high-quality analyses, which are essential to timely and accurate diagnosis and treatment. In FY 2019, CDC analyzed and reported results for 98% of submitted specimens in a timely manner (within the expected turnaround times posted in the CDC test directory for each test) exceeding its target and the FY 2018 performance result (Measure 10.C.4). However, the program continues to face challenges in its ability to address key gaps in new and improved disease detection and laboratory diagnostic tools needed to achieve malaria and neglected tropical disease elimination goals.

CDC-WIDE ACTIVITIES AND PROGRAM SUPPORT

Buildings and Facilities

Performance Measures for Long Term Objective: Improve efficiency and sustainability of CDC Facilities

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
12.E.2 Increase the percent of CDC facilities (10,000 square feet and above) that meet the Guiding Principles for High Performance and Sustainable Federal Buildings ¹ (Efficiency)	FY 2020: 29.6% Target: 15% (Target Exceeded)	15%	15%	Maintain
12.E.1a Improve energy (E) consumption per square foot ² (Efficiency)	FY 2020: 27.1% Target: 30% (Target Not Met)	30%	30%	Maintain
12.E.1b Improve water (W) consumption per square foot (Efficiency)	FY 2020: 25.5% Target: 24% (Target Exceeded)	26%	28%	+2

¹ Per Implementing instructions for Executive Order 13834 issued April 2019, this metric is revised from 5,000 sq. ft. and above to 10,000 sq. ft. and above. This change will be reflected in 2019 results which cannot be compared to prior years.

² Target and baseline are reverted back to pre-2016 metrics. Per Executive Order 13834, the current targets and baseline revert back to being based on the Energy Policy Act of 2005.

Performance Measures for Long Term Objective: Improve CDC's Buildings and Facilities Office's processes and performance¹

Measure	Most Recent Result and Target	FY 2021 Target ²	FY 2022 Target ²	FY 2022 +/- FY 2021
12.2.1c Improve Condition Index (CI), as measured by the ratio of the functional replacement value (FRV) of an asset with its backlog of maintenance and repair (BMAR) needs (Output)	FY 2020: 73.02 Target: 90 (Target Not Met)	90	90	Maintain
12.2.1d Reduce non-mission dependency, as measured by the percentage of real property assets that are not deemed directly necessary to support the Agency's mission (Output)	FY 2020: 0.96% Target: 2% (Target Exceeded)	2%	2%	Maintain

12.2.1e Improve building utilization ³ (Output)	FY 2020: 6.2% Target: 5% (Target Not Met but Improved)	5%	5%	Maintain
12.2.1f Improve buildings and facilities operating costs (Output)	FY 2020: \$13.91/sq. ft. Target: \$10.29/sq. ft. (Target Not Met)	\$10.29/sq. ft.	\$10.29/sq. ft.	Maintain

¹ Targets are set by HHS and align to Executive Order 13327; the Federal Real Property Council (FRPC) defines the metrics.

² Projected only, targets do not exist from FRPC for beyond FY 2016.

³ Under-utilized (U); The Federal Real Property Council removed the metric Over-utilization (O) for FY 2013 and forward.

Performance Trends: CDC's mission is executed in a safe, sustainable, and dynamic workplace environment for approximately 23,000 CDC staff while ensuring efficiency, environmental stewardship, and appropriate management of agency assets due to the Office of Safety, Security, and Asset Management's (Building and Facilities) leadership. In FY 2020, CDC continued to exceed the target of a 15% increase in Gross Square Feet (GSF) for buildings that are 10,000 sq. ft. and above and that meet the Guiding Principles for High Performance and Sustainable Federal Buildings (Measure 12.E.2) with a decrease from 31.3% in FY 2019 to 29.6% in FY 2020. Major high performance buildings are currently in design and construction phases at Chamblee, Roybal, and Cincinnati campuses. This is expected to increase the GSF of Guiding Principle compliant buildings over the next several years. CDC expects that we may also see smaller gains with the demolition of older and poor performing buildings.

As of FY 2018, targets and baselines set for improving energy consumption (Measure 12.E.1a) are based on the Energy Policy Act of 2005 per Executive Order (EO) 13834, which was signed by the President on May 17, 2018. In FY 2020, CDC's energy consumption did not improve, and went from 28.8% to 27.1%. Due to COVID-19 safety efforts for essential personnel, CDC made a decision starting in May 2020 to operate all facilities' HVAC 24x7 (no night, weekend, or holiday setback of airflows and temperature settings). Subsequently, for five months of FY 2020 the increased chiller and cooling tower usage contributed substantially to the energy and water intensity increases in FY 2020 compared to FY 2019. This had sweeping and very negative impacts to both energy and water efficiency. When operations begin to move back to "normal" modes, a positive trend is expected.

CDC is planning to award a new UESC task order (Phase 2 to Atlanta Gas Light Company for Roybal and Chamblee campuses) in Q2 of FY 2021. If approved, highlights of this performance contract include:

- Implementation Costs: \$7,565,126.00 w/ Simple Payback: 11 years
- The scope includes the following selected conservation measures: LED upgrades, lighting control system upgrades, CUP cooling tower VFDs, and new advanced metering.

CDC continues to implement energy saving projects that will increase the use of renewable energy and simultaneously decrease costs. Some examples of energy saving projects include:

- A new facility to consolidate CDC's National Institute for Occupational Safety and Health (NIOSH) Research Facilities in Cincinnati, which is currently in the design phase. Design targets include Leadership in Energy and Environmental Design (LEED)-compliant, GP-compliant and high-performance components.
- Design targets for the construction of Chamblee Building 108 and supporting infrastructure improvements for the Chamblee Campus, which include high-performance design for Building 108,

expanded on-site renewable energy campus-wide utility improvements, and LEED certification. This project also includes upgrades to the central utility plant.

- Construction of a new parking deck on the Roybal Campus, which will address parking shortages and will be populated with a large photo-voltaic array and electric vehicle charging stations. Additionally, the new parking deck will operate as a zero net energy (ZNE) structure when completed. Construction is anticipated to be completed in early calendar year of 2021.

With a current reduction of 25.5% in water consumption (Measure 12.E.1b) in FY 2020, CDC continues to maintain this goal beyond the 22% target in spite of water intense COVID related operating conditions this year. The UESC project and Building 108 identified above are expected improve water consumption at CDC over next several years.

CDC did not meet its target for improving its condition index (CI) in FY 2020 (Measure 12.2.1c). The drop in un-weighted CI from FY 2019 (75.11 CI) to FY 2020 (73.02 CI) reflects continuing deterioration of a number of small assets (<5,000 sq. ft.) that are slated for future demolition. CDC's weighted CI increased from FY 2019 (95.65CI) to FY 2020 (97.23CI). This improvement demonstrates that CDC's largest, mission-critical, and mission dependent assets continue to be maintained at a high level.

CDC exceeded its target for reducing non-mission dependency assets that are not deemed directly necessary to support CDC's mission (Measure 12.2.1d) in FY 2020 with a result of 0.96%. In FY 2020, CDC demolished 17 assets and identified an additional seven assets for demolition/disposal. Many of those assets were identified and marked under-utilized and will be disposed of in FY 2022. This assessment contributed to a reduction in the FY 2020 under-utilization rate from 12.86% in FY 2019 to 6.20% in FY 2020 (Measure 12.2.1.e). CDC will continue disposing under-utilized assets to meet or exceed this target.

CDC's operating costs increased from \$12.92/sq. ft. in FY 2019 to \$13.91/sq. ft. in FY 2020 (Measure 12.2.1f). Overall, utility and maintenance costs increased during FY 2020. Maintenance costs are largely affected by annual maintenance contract renewals, while energy costs have failed to decrease during the COVID-19 operating status because of ventilation and temperature control requirements in labs and office buildings, even with reduced personnel on campus. CDC also discovered inadequacies in the maintenance and energy estimates for some of its assets. Most assets are not tabulated individually for maintenance costs or metered individually for energy costs. They are pro-rated according to square footage and asset type. It was found that some of this empirical data needed adjustment beyond the yearly increases in utility and maintenance contracts. CDC does not expect a variance of this amount to occur in future years, upon correcting the empirical pro-rata. CDC also reiterates that the target for reduced operating costs does not take into account high operating costs associated with laboratory assets. CDC's laboratories comprise approximately 44% of its square footage, resulting in disproportionately higher operating costs. CDC's annual operating cost result has changed by less than \$1/square foot since FY 2005. Benchmarking studies have indicated CDC's asset portfolio is in the medium range of operating costs for similarly equipped institutional and private real asset portfolios with similar laboratory to non-laboratory asset ratios.

PUBLIC HEALTH LEADERSHIP AND SUPPORT

State, Tribal, Local and Territorial Support

Performance Measures for Long Term Objective: Improve the capacity and performance of state, tribal, local and territorial public health agencies to more efficiently and effectively manage and deliver high quality programs and services to protect the public’s health

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
11.B.4.1a (State) Increase the percentage of nationally PHAB ¹ accredited state public health agencies (Intermediate Outcome)	FY 2020: 70.6% Target: 70% (Target Exceeded)	78.0%	82.0%	+ 4.0
11.B.4.1b (Local) Increase the percentage of nationally PHAB ¹ accredited local public health agencies (Intermediate Outcome)	FY 2020: 14.3% Target: 14% (Target Exceeded)	15.0%	15.5%	+ 0.5

¹Public Health Accreditation Board

Performance Trends: Health departments serve Americans where they live, work, and play; every American benefits from their services and never before has this been as visible as in the nation's response to the COVID-19 pandemic. CDC support and resources to state, tribal, local, and territorial public health departments help improve the effectiveness, efficiency, and quality of public health programs. Additionally, CDC assists health departments in meeting the nationally recognized, practice-focused and evidence-based standards of the Public Health Accreditation Board (PHAB).⁴¹¹ Meeting these standards provides health departments with tools to advance the quality and performance of public health programs and services and better positions them to rapidly respond to emerging threats and challenges. CDC funds and supports the continuous improvement of the national accreditation program.

Accredited health departments now serve over 82% of the U.S. population as of November 2020. PHAB has accredited 361 health departments—36 states, four tribes, and 331 local health departments (including 264 individually accredited local health departments and 67 county health departments through a centralized state application). In 2018, PHAB reaccredited the first health departments and 32 health departments are reaccredited as of November 2020. An additional 137 health departments have formally entered the initial accreditation process. CDC has met FY 2020 targets with 70.6% of state and 14.3% of local agencies accredited or reaccredited as of November 2020 (Measures 11.B.4.1a-b).

A survey in July 2020 more than 80% of accredited health departments indicated that, overall, accreditation has helped their response to the COVID-19 pandemic⁴¹². Annual evaluation findings also consistently report benefits to participating in accreditation. April 2020 evaluation data indicate that the program has stimulated quality improvement (96% of accredited health departments agree), improved accountability (80%), improved the capacity of the department to provide high quality programs and services (82%), and strengthened the utilization of resources (71%).^{413,414} Additionally, comparative studies, published in peer review journals, used longitudinal data to identify substantial differences between accredited and non-accredited health departments.

⁴¹¹ <http://www.phaboard.org/about-phab/>.

⁴¹² Public Health Accreditation Board. PHAB Survey of Health Departments and Site Visitors During Response to COVID-19 Pandemic, July 2020. Available at: <https://phaboard.org/wp-content/uploads/Strategic-Planning-Survey-Findings-Final-July-2020.pdf>.

⁴¹³ NORC at the University of Chicago. “Assessing Outcomes from Public Health Accreditation.” April 2020. Available at: NORC_slides-for-web-April-2020.pdf (phaboard.org).

⁴¹⁴ Evaluating the Impact of National Public Health Department Accreditation—United States, 2016 (MMWR, August 12, 2015/65(31);803-806).

Within a few years after the program had launched and sites began to receive accreditation, the PHAB-accredited sites tended to offer a higher percentage of public health activities, contribute more effort to almost all of those activities, and report higher levels of contribution from most other public health system partners⁴¹⁵. Another study found substantial increases in quality improvement engagement among accredited health departments compared to ones not engaged in accreditation⁴¹⁶.

From FY 2011-2018, CDC's Accreditation Support Initiative (ASI) provided funding and support to 268 local, tribal, and territorial health departments and state associations. The ASI investments are still being realized. Of the local and tribal sites that received ASI awards through 2018, 62% are now either accredited or in the application process, while 75% of tribal and local ASI sites supported during the first three years (2011-2013) have now applied or been accredited.

In FY 2019 and FY2020 a similar program, "Strong Systems, Stronger Communities (SSSC)" replaced ASI. SSSC similarly promotes performance improvement activities related to achieving national standards and seeking PHAB accreditation at state, local, tribal and territorial health department levels. In FY 2019, 30 sites (nine state, three territorial, eight local, and ten tribal) were provided with small awards or customized capacity building and technical assistance to complete projects that improve their performance, meet national accreditation standards, and/or promote connections across the public health system. In FY 2020, 31 new sites (nine state, three territorial, eight local, eleven tribal) were supported for similar work.

In addition, CDC invests in cross-cutting capacity building and performance improvement cooperative agreement programs for health departments through which recipients have been able to prepare for and obtain accreditation. This includes the Preventive Health and Health Services (PHSS) Block Grant. For the last four years, block grant recipients have consistently chosen to invest almost 30% of their funding in public health infrastructure to enhance workforce, data and information systems, laboratory services, epidemiology capacity, and performance improvement and accreditation. In FY 2020, recipients invested \$40M in public health infrastructure, of which 66% supported activities aligning with the performance improvement and accreditation-related objectives in Healthy People.

Another CDC cooperative agreement mechanism initiated in FY 2018 now supports 25 tribal nations or tribal organizations on activities to enhance the quality and performance of the tribal public health system, including infrastructure, workforce, data and information systems, programs and services, resources and communication, and partnerships. The funding is well-aligned with supporting efforts toward meeting the national standards for public health accreditation.

Targets established through FY 2021 are achievable; the field is still benefitting from previous investments in an accreditation preparation and application process with a significant lead time. However, decreased investment in accreditation readiness and the potential impact of COVID-19 have contributed to less ambitious targets in FY 2022. Sites not applying for or achieving reaccreditation can also impact the proportion of accredited sites. Three sites -- all local health departments -- have not applied for reaccreditation due to financial considerations and the impact of COVID. These sites are no longer accredited. CDC plans to continue funding improvements and updates to the PHAB national accreditation program and the advancement of reaccreditation. Just as the public expects organizations such as schools and hospitals to be accredited, the national accreditation program for health departments is establishing growing expectations for health departments to meet national standards and become accredited.

⁴¹⁵ Ingram RC, Mayes GP, Kussainov N. Changes in local public health system performance before and after attainment of national accreditation standards. Supplement, Impact of Public Health Accreditation. Journal of Public Health Management and Practice. 2018 (24:suppl 3), S25-S34.

⁴¹⁶ Beitsch LM, Kronstadt J, Robin N, Leep C. Has voluntary public health accreditation impacted health department perceptions and activities in quality improvement and performance management? Supplement, Impact of Public Health Accreditation. Journal of Public Health Management and Practice. 2018 (24:suppl 3), S10-S18.

Communications

Performance Measure for Long Term Objective: Improve access to and reach of CDC's scientific health information among key audiences to maximize health impact

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/-FY 2021
11.B.1.1c Increase health behavior impact of CDC.gov (Outcome)	FY 2020: 88.9% ¹ Target: 90% (Target Not Met)	90%	90%	Maintain

¹ Does not include individuals who responded "N/A"

Performance Trends: It is important that CDC’s health information meets the needs of consumers or changes behavior. CDC uses American Customer Satisfaction Index (ACSI) scores to improve its web site and ensure that its audiences are satisfied with the usability of the site, credibility of the information, and functionality of the web tools (such as content syndication). In addition to tracking its overall performance, CDC surveys web users to understand how likely they are to change behavior based on information found on CDC.gov. In FY 2020, 88.9% of visitors indicated positive health impact and behavior change which was below the target of 90%. FY 2020 was a unique year with the COVID-19 response. Due to the nature of this year, satisfaction with the overall pandemic appears to have effected the CDC.gov score. When satisfaction without COVID-19 is taken into account, CDC would have a 90% satisfaction rate. CDC targets remain level at 90%, as CDC does not anticipate significant increases in performance. This measure helps CDC’s web and health communication specialists understand the impact of materials placed on CDC.gov and assess how audiences use the content provided.

PUBLIC HEALTH PREPAREDNESS AND RESPONSE

State and Local Preparedness and Response Capability

Performance Measures for Long Term Objective: Enhance and sustain preparedness and response capability across state, local, and territorial health departments

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
13.5.3 Increase the percentage of public health agencies that directly receive CDC Public Health Emergency Preparedness funding that can convene, within 60 minutes of notification, a team of trained staff that can make decisions about appropriate response and interaction with partners (Outcome)	FY 2019: N/A ¹ Target: 96% (Target Exceeded)	96%	96%	Maintain

¹ Reporting requirement was waived due to COVID-19. Data will not be reported for FYs 2019 and 2020.

Performance Trends: CDC uses Public Health Emergency Preparedness (PHEP) recipient-reported data to aid jurisdictions in identifying preparedness gaps and developing targeted strategies to improve performance across operations. The ability to assemble key staff for timely decision-making and the establishment of effective incident management structures are essential components of a public health emergency response.

CDC has modified FY 2019 and FY 2020 PHEP program requirements as a result of the current COVID-19 pandemic response underway in the 62 PHEP jurisdictions. To support this critical work and reduce recipient burden, CDC has integrated PHEP planning requirements with COVID-19 pandemic response activities, allowing recipients to use their response to the current public health incident to demonstrate their preparedness capabilities. Among the changes, CDC has waived all drill requirements, including the staff assembly drill (Measure 13.5.3). As a result, data will not be reported for FY 2019 and FY 2020.

Performance Measures for Long Term Objective: Integrate and enhance existing surveillance systems at the local, state, national, and international levels to detect, monitor, report, and evaluate public health threats

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
13.1.3 Increase the number of Laboratory Response Network (LRN) member laboratories able to use their current Laboratory Information Management System (LIMS) for LRN-specific electronic data exchange (Output)	FY 2020: 56 Target: 58 (Target Not Met)	63	63	Maintain
13.1.1b Increase the percentage of national Emergency Department visits captured in the syndromic surveillance platform to improve the coverage of syndromic surveillance data (Output)	FY 2020: 68% Target: 70% (Target Not Met)	75%	75%	Maintain

Performance Trends: Laboratory results are a critical component of public health practice and help guide decisions during public health response. To support early detection and response activities, public health laboratories that are members of the Laboratory Response Network (LRN) need the capacity to share standard electronic data in real time with CDC. Local, county, and state public health laboratories have more widely adopted the use of Electronic Laboratory Reporting (ELR), using the standardized HL7 codes for data exchange with partners. However, this method of data exchange is challenging with the continuous evolution of new tests; need to report data for emerging diseases; and lack of standardized codes and data elements. This is especially true during emergency events when the ability to send, receive, and utilize critical laboratory results in near real-time is crucial for data-driven public health actions.

CDC continues to focus on steadily increasing the electronic data exchange capacity of the Laboratory Response Network [2] (LRN) member labs (Measure 13.1.3). CDC provides technical assistance and funding to LRN member laboratories to update their Laboratory Information Management Systems and data messaging systems to facilitate ELR HL7 messaging. In 2020, data implementation requirements based on the ELR HL7 standard messaging profile were continued for the LRN-Biological (LRN-B) and LRN-Chemical (LRN-C) programs. As of November 2020, 56 out of 89 (63%) LRN-B public health labs are sending their LRN testing data using ELR HL7 messaging to CDC. Prioritization of ELR implementation for LRN specific work continues to be a challenge in many public health laboratories given limited staff time and expertise. Typically, most laboratories have only one or two dedicated informatics staff who are focused on maintenance and upgrades to existing systems as well as implementation of new data flows which are often dictated by the impact these changes have on the laboratory. COVID-19 ELR has been a priority for all labs in 2020 requiring all available staff to focus their efforts on this task. That also means the engagement of the laboratory staff who are needed to validate many components of this implementation. CDC is currently working with LRN-C laboratories in Wisconsin, Minnesota, and Arkansas to complete HL7 implementation and has begun working with LRN laboratories in Arizona, New Jersey, and Virginia to explore their ability to begin implementation ELR efforts. Given the continued expected impact of COVID-19 response on public health laboratories, CDC expects that full ELR implementation for LRN laboratories may continue to be low priority for public health laboratories.

The National Syndromic Surveillance Program (NSSP) provides local, state and federal health officials with a near real time system for detecting, understanding, and monitoring health events. By tracking symptoms of patients in emergency departments—before a diagnosis is confirmed—public health can detect unusual levels of illness to determine whether a response is warranted. On a daily basis, local, state, and federal health officials analyze syndromic data to improve their common awareness of health threats over time and across regional boundaries. With this capability, syndromic data can serve as an early warning system for public health concerns such as flu outbreaks and have been used in responses for opioid overdoses, vaping-associated lung disease, Zika virus infection, and natural disasters. Throughout the COVID-19 response, state health officials have used syndromic surveillance data to understand and monitor the spread of the outbreak throughout the general population, targeted populations in high risk environments such as long term care facilities and federal health officials have used syndromic data to analyze the outbreak's impact on other parts the medical system.

The NSSP was on track to meet or exceed the target at the beginning of CY 2020. We believe the achieved coverage under-estimates the system's true coverage due to bias introduced by COVID-19's impact on non-COVID-19 Emergency Department (ED) procedures and visits resulting in an overall decline of ED visits across the nation. Documentation on this observation can be found in CDC's MMWR Volume 69, Issues No. 23 (June 12, 2020) and No. 25 (June 26, 2020) respectively.

Currently, there are 59 sites from 47 states and the District of Columbia that participate in the NSSP. There are 5,935 facilities, which include 3,598 emergency departments (ED), that actively contribute data to the NSSP BioSense Platform. Patient health data is available to health officials for analysis within 24 hours of a patient's visit, and over 6 million electronic health records are received by the BioSense Platform every day.

Measure 13.1.1b reflects the results of focused activities taken by the NSSP Community of Practice (CoP) aimed at increasing the utility and value of the NSSP and the BioSense Platform. These efforts helped provide a steady increase in the coverage of the data captured within the platform. Coverage measures the nationwide percentage of emergency department (ED) visits that are received on the BioSense Platform, and does not include the volume of inpatient, urgent care, and other outpatient visits that some facilities transmit along with the ED visits. With increased resources and the continued focus of the CoP, we expect additional increases in coverage in outlying years. The FY 2020 results (68%) coverage calculation under-estimates the system's true coverage due to bias introduced by the recent decline in Emergency Department (ED) visits related to the impact COVID-19 had on limiting the overall scope of ED operations and public visits for non-COVID related medical issues across the nation.

Performance Measures for Long Term Objective: Enhance and sustain nationwide and international laboratory capacity to gather, ship, and screen and test samples for public health threats and to conduct research and development that lead to interventions for such threats

Measure	Most Recent Result and Target	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
13.3.1 Sustain the percentage of Laboratory Response Network (LRN) laboratories that have demonstrated ability to rapidly detect select biological threat agents (Output)	FY 2020: 89% Target: 92% (Target Not Met)	92%	92%	Maintain

Performance Trends: Laboratory Response Network (LRN) proficiency testing ensures laboratories within the network have the ability to rapidly identify biological threat agents. This includes performing LRN assays using agent-specific testing algorithms and available electronic resources to submit results. In FY 2020, 89% of LRN laboratories passed the proficiency test on the first attempt (Measure 13.3.1). While this is short of the target (92%), it is not unexpected given the turnover in public health laboratory staff, increased laboratory burden and focus on the ongoing COVID-19 response. Future targets will remain fixed at 92% which provides CDC with sufficient confidence in the capabilities of the LRN network.

WORKING CAPITAL FUND

Performance Measures for Working Capital Fund

Measure	Most Recent Result	FY 2021 Target	FY 2022 Target	FY 2022 +/- FY 2021
15.2.2 Maintain the percent of invoices paid on time (Efficiency)	FY 2020: 99.8% Target: 98% (Target Exceeded)	98%	98%	Maintain
15.5.1 Maintain the variance between annual revenues and annual costs (Efficiency)	FY 2020: 10.64% Target: 3% (Target Not Met)	3%	3%	Maintain
15.5.2 Maintain the variance between estimated and actual cost (Efficiency)	FY 2020: 7.92% Target: 1% (Target Not Met)	1%	1%	Maintain
15.5.3 Maintain the percent of bills that require correction (Efficiency)	FY 2020: 0% Target: 10% (Target Exceeded)	9%	9%	Maintain

Performance Trends: CDC’s Office of the Chief Operating Officer actively supports CDC’s goals and customers through fiscal stewardship and sound financial strategy. Annually, CDC has secured an unqualified audit opinion on the agency’s financial statements since FY 1999.

The Office of Management and Budget's Prompt Payment rule requires federal agencies to pay vendors in a timely manner and assesses late interest penalties against agencies that pay vendors after a payment due date. CDC has maintained a 99% prompt payment level since FY 2013 (Measure 15.2.2). CDC will continue to exceed the 98% requirement of on time payments by ensuring program offices, the acquisition office, and the payment office communicate with each other and the agency's vendors.

CDC’s Working Capital Fund (WCF) aims to achieve greater efficiency and transparency through the provision of agency-wide business services. Currently, CDC estimates costs for business services 18 months in advance to allow for agency-wide planning. In FY 2020, CDC received \$7.5 billion in supplemental funding for the COVID-19 response after the start of the fiscal year and as a result did not meet its target (Measure 15.5.1). CDC will maintain its FY 2021 target in FY 2022; however, due to the nature of the ongoing emergency work, CDC expects variances over time.

In measuring performance from a Center, Institute, Office (CIO) perspective in FY 2020, the original cost estimate varied 7.92% from the actual costs charged (Measure 15.5.2). CDC did not meet the target due to unanticipated costs associated with the COVID-19 emergency response. Due to continued process improvements, CDC exceeded its FY 2020 target of 10% for monthly bills requiring correction (Measure 15.5.3). CDC will keep FY 2022 targets for these measures level with the previous year.

FY 2022 DISCONTINUED MEASURES TABLE

Measure ID 2.2.1: Increase the percentage of newly diagnosed persons linked to HIV medical care within one month of their HIV diagnosis (Outcome and Contextual)

FY	Target	Result
Out-Year Target	TBD (2025)	(Target Not In Place)
2022	Discontinued	N/A
2021	N/A	Dec 31, 2023
2020	85 %	Dec 31, 2022
2019	N/A	Dec 31, 2021
2018	N/A	Dec 31, 2020
2017	78.3 %	78.3 % (Target Met)
2016	76.9 %	75.9 % (Target Not Met but Improved)

CDC plans to retire measure 2.2.1 in FY 2022 and replace it with a new measure that will better reflect CDC's impact on linkage to care.

Measure ID 2.2.2: Increase the percentage of HIV-infected persons in CDC-funded counseling and testing sites who were referred to Partner Services to confidentially notify and provide HIV testing and prevention services to partners who may be infected (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	85 %	Jun 30, 2023
2020	85 %	Jun 30, 2022
2019	85 %	Jun 30, 2021
2018	85 %	94.5% (Target Exceeded)
2017	85 %	90.7 % (Target Exceeded)
2016	85 %	90.2 % (Target Exceeded)

CDC will retire this measure due to the steady progress that has been made regarding referrals to partner services.

Measure ID 2.6.1: Reduce the rate of new cases of hepatitis A (per 100,000 population) (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	0.3 /100,000	May 31, 2023
2020	0.3 /100,000	May 31, 2022
2019	0.3 /100,000	May 31, 2021
2018	0.4 /100,000	3.8/100,000 (Target Not Met)

FY	Target	Result
2017	0.4 /100,000	1 /100,000 (Target Not Met)
2016	0.4 /100,000	0.6 /100,000 (Target Not Met)

A new strategic plan has been established and this measure no longer aligns with the strategic plan’s indicators.

Measure ID 2.6.2: Reduce the rate of new cases of hepatitis B (per 100,000 population) (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	0.5 /100,000	May 31, 2023
2020	0.5 /100,000	May 31, 2021
2019	0.5 /100,000	September 1, 2020
2018	0.9 /100,000	1.0/100,000 (Target Not Met But Improved)
2017	0.9 /100,000	1.1 /100,000 (Target Not Met)
2016	0.9 /100,000	1 /100,000 (Target Not Met but Improved)

A new strategic plan has been established and this measure no longer aligns with the strategic plan’s indicators.

Measure ID 2.6.6: Reduce the rate of new cases of hepatitis C (per 100,000 population) (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	0.25 per 100,000 population	May 31, 2023
2020	0.25 per 100,000 population	May 31, 2022
2019	0.33 per 100,000 population	May 31, 2021
2018	0.41 per 100,000 population	1.2 per 100,000 population (Target Not Met)
2017	0.5 per 100,000 population	1 per 100,000 population (Target Not Met)
2016	N/A	1 per 100,000 population (Historical Actual)

A new strategic plan has been established and this measure no longer aligns with the strategic plan’s indicators.

Measure ID 4.9.4: Increase the percentage of CDC-funded state cancer registries that electronically receive physician cancer reports from Electronic Health Record (EHR)/Electronic Medical Record (EMR) systems. (Output)

FY	Target	Result
2022	Discontinued	N/A
2021	90 %	Dec 31, 2021
2020	90 %	Dec 31, 2020
2019	85 %	79% (Target Not Met but Improved)

FY	Target	Result
2018	75 %	75 % (Target Met)
2017	60 %	70 % (Target Exceeded)
2016	38 %	54 % (Target Exceeded)

This measure no longer reflects the most efficient way to get timely data. CDC will retire this measure.

Measure ID 4.11.5: Increase the age-adjusted proportion of persons age 18+ in the U.S. population with high blood pressure who have it controlled (<140/90).⁴¹⁷ (Intermediate Outcome)

FY	Target	Result
2022	Discontinued	N/A
2020	59.9 %	Dec 31, 2021
2018	58.6 %	37.2% (Target Not Met)
2016	56 %	42.8 % (Target Not Met)

CDC will retire this measure as it does not align with CDC’s reporting on this data in other contexts.

Measure ID 4.11.6: Reduce consumption of sodium in the U.S. population aged 2 years and older (milligrams per day).⁴¹⁸ (Intermediate Outcome)

FY	Target	Result
2022	Discontinued	N/A
2020	2,900 mg	Sep 30, 2022
2018	2,900 mg	Sep 30, 2020
2016	2,900 mg	3,410 mg (Target Not Met)

This measure no longer aligns with changes in CDC’s programmatic activities and will be retired.

Measure ID 5.2.5: Increase the percentage of jurisdictions that collect, report, and use individually identifiable data in order to reduce the number of infants not passing hearing screening that are lost to follow-up (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	82 %	Dec 31, 2023

⁴¹⁷Targets and results are set and reported biennially.

⁴¹⁸Targets and results are set and reported biennially.

FY	Target	Result
2020	80 %	Dec 31, 2022
2019	80 %	Dec 31, 2021
2018	78 %	Dec 31, 2020
2017	70 %	80 % (Target Exceeded)
2016	70 %	69 % (Target Not Met but Improved)

CDC will retire this measure as it awards two new Notice of Funding Opportunities as part of a new phase in their work to advance Early Hearing Detection and Intervention (EHDI). This measure no longer accurately captures progress in EHDI.

Measure ID 5.2.7: Increase the percentage of US children 2-5 years of age with a diagnosis of ADHD who receive behavioral therapy (psychological services) for treatment (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	68 %	Dec 31, 2022
2020	66 %	Dec 31, 2021
2019	60 %	65% (Preliminary Data)
2018	60 %	60 % (Target Met)
2017	Set Baseline	60 % (Baseline)[1]
2016	43 %	59 % (Target Exceeded)

CDC is reprioritizing ADHD programmatic activities and will retire this measure.

Measure ID 5.F: Increase percentage of funded Disability and Health state programs that use state Medicaid administrative data to inform the development of public health programs for people living with intellectual/developmental disabilities (I/DD) (Output)

FY	Target	Result
2022	Discontinued	N/A
2021	58 %	Dec 31, 2021
2020	58 %	53 % (Target Met)
2019	53 %	53 % (Target Met)
2018	37 %	53 % (Target Exceeded)
2017	22 %	37 % (Target Exceeded)
2016	11 %	16.6 % (Target Exceeded)

CDC will retire this measure as it is not an accurate indicator of effectiveness or impact.

^[1]CDC established a new data source in FY 2017. Results cannot be compared to previous years.

Measure ID 6.1.2: Number of completed studies to determine the harmful health effects from environmental hazards. (Output)

FY	Target	Result
2022	Discontinued	N/A
2021	30	Oct 31, 2021
2020	30	Oct 31, 2020
2019	30	Feb 28, 2020
2018	30	37 (Target Exceeded)
2017	27	27 (Target Met)
2016	27	30 (Target Exceeded)

This measure is no longer an accurate reflection of CDC’s programmatic priorities. CDC will retire this measure.

Measure ID 6.2.3: Percent of children (with blood lead levels at or above 5 micrograms per deciliter) who are referred for case management (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	40 %	N/A
2020	35 %	Dec 31, 2023
2019	30 %	Dec 31, 2022
2018	30 %	Dec 31, 2021
2017	30 %	Dec 31, 2020
2016	25 %	Feb 28, 2020

CDC is unable to collect data for this measure. CDC will retire measure 6.2.3.

Measure ID 7.2.7a: Reduce the age-adjusted annual rate of overdose deaths involving natural and semisynthetic opioids (e.g., oxycodone, hydrocodone) among states funded through CDC’s multi-state surveillance and prevention cooperative agreement (per 100,000 residents)

FY	Target	Result
2022	Discontinued	N/A
2021	3.7 per 100,000 residents	Jan 31, 2023
2020	3.9 per 100,000 residents	Jan 31, 2022
2019	4.1 per 100,000 residents	Jan 31, 2021
2018	4.2 per 100,000 residents	4.1 per 100,000 residents (Target Not Met but Improved)
2017	Set Baseline	4.4 per 100,000 residents (Baseline)

CDC will retire this measure as it excludes methadone and does not align with CDC’s categorization for reporting this data on other platforms.

Measure ID 8.B.2.2: Increase the electronic media reach of CDC Vital Signs through use of mechanisms such as the CDC website and social media outlets, as measured by page views, social media followers, and texting and email subscribers (Output)

FY	Target	Result
2022	Discontinued	N/A

FY	Target	Result
2021	5,539,317	Oct 31, 2021
2020	5,275,240	Oct 31, 2020
2019	5,024,324 ⁴¹⁹	6,018,711 (Target Exceeded)
2018	5,526,756	5,965,247 (Target Exceeded)
2017	5,024,324	4,740,498 (Target Not Met but Improved)
2016	6,875,000	4,567,567 (Target Not Met but Improved) ³

Measure ID 8.H.1: Number of physicians surveyed in the National Ambulatory Medical Care Survey (Output)

FY	Target	Result
2022	Discontinued	N/A
2021	3,000	Mar 31, 2022
2020	3,000	Mar 31, 2021
2019	3,000	3,000 (Target Met)
2018	3,000	3,071 (Target Exceeded)
2017	3,300	3,366 (Target Exceeded)
2016	3,300	3,859 (Target Exceeded)

This measure is no longer relevant as there is growing use of electronic medical records. CDC will retire this measure.

Measure ID 8.H.2: Number of patient visit records surveyed in the National Ambulatory Medical Care Survey (Output)

FY	Target	Result
2022	Discontinued	N/A
2021	20,000	Mar 31, 2022
2020	20,000	Mar 31, 2021
2019	20,000	10,427 (Target Not Met)
2018	20,000	12,772 (Target Not Met)
2017	30,500	19,436 (Target Not Met)
2016	30,500	21,089 (Target Not Met)

This measure no longer reflects CDC's approach to collecting this survey information. CDC will retire this measure.

⁴¹⁹An inflation in Vital Signs electronic reach metrics occurred between April 2014 and November 2015. Results for FY 14-16 and the FY 17 target were revised to correct for inflated numbers. The FY 19 target represents a 6% increase from the corrected FY 2017 target.

Measure ID 10.E.2: Percentage of outbreak investigations that received laboratory support (Output)

FY	Target	Result
2022	Discontinued	N/A
2021	80 %	Jan 31, 2022
2020	80 %	Jan 31, 2021
2019	70 %	60% (Target not met)
2018	70 %	79 % (Target Exceeded)
2017	70 %	70 % (Target Met)
2016	Set Baseline	61 % (Baseline)

CDC will retire Measure 10.E.2 as it is no longer the best reflection of CDC’s activities to support countries and their laboratory work.

Measure ID 10.E.4: This measure is a simple count: the number of distinct events reported on during a calendar year. (Output)

FY	Target	Result
2022	Discontinued	N/A
2021	140	Jan 31, 2022
2020	135	Jan 31, 2021
2019	130	139 (Target Exceeded)
2018	Set Baseline	125 (Baseline)
2017	N/A	290 (Historical Actual)
2016	N/A	164 (Historical Actual)

CDC will retire Measure 10.E.4 which is no longer an effective indicator of the success of CDC’s global health protection activities.

Measure ID 10.F.1a: Increase epidemiology and laboratory capacity within global health ministries through the Field Epidemiology Training Program (FETP). New Residents⁴²⁰ (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	500	Jun 30, 2022
2020	500	Jun 30, 2021
2019	400	602 (Target Exceeded)
2018	400	596 (Target Exceeded)
2017	430	403 (Target Not Met)

⁴²⁰Targets related to FELTP assume funding contributions from other sources will continue at FY 2011 levels.

FY	Target	Result
2016	430	470 (Target Exceeded)

CDC will retire its FETP measure as its description is not consistent with the measure’s methodology. CDC will retire this measure.

Measure ID 10.F.1b: Increase epidemiology and laboratory capacity within global health ministries through the Field Epidemiology Training Program (FELTP). Total Graduates (Outcome)

FY	Target	Result
2022	Discontinued	N/A
2021	6,400	Jun 30, 2022
2020	5,900	Jun 30, 2021
2019	4,900	6,522 (Target Exceeded)
2018	4,500	5,567 (Target Exceeded)
2017	3,700	4,816 (Target Exceeded)
2016	3,700	4,413 (Target Exceeded)

CDC will retire its FETP measure as its description is not consistent with the measure’s methodology. CDC will retire this measure.

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SUPPLEMENTAL TABLES

OBJECT CLASS TABLE – DIRECT

(dollars in thousands)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Personnel Compensation:				
Full-Time Permanent (11.1)	\$451,347	\$459,487	\$513,233	\$53,746
Other than Full-Time Permanent (11.3)	\$59,390	\$60,462	\$65,176	\$4,715
Other Personnel Comp. (11.5)	\$35,925	\$36,573	\$39,425	\$2,852
Military Personnel (11.7)	\$55,608	\$56,611	\$61,507	\$4,896
Special Personal Service Comp. (11.8)	\$2,632	\$2,679	\$2,888	\$209
Total Personnel Compensation	\$604,902	\$615,811	\$682,228	\$66,417
Civilian personnel Benefits (12.1)	\$188,439	\$191,837	\$196,201	\$4,364
Military Personnel Benefits (12.2)	\$19,169	\$19,515	\$20,042	\$527
Benefits to Former Personnel (13.0)	\$220	\$224	\$229	\$5
Subtotal Pay Costs	\$812,730	\$827,387	\$898,700	\$71,313
Travel (21.0)	\$25,153	\$25,607	\$27,903	\$2,296
Transportation of Things (22.0)	\$4,268	\$4,344	\$4,734	\$390
Rental Payments to GSA (23.1)	\$2,617	\$2,664	\$2,929	\$265
Rental Payments to Others (23.2)	\$573	\$583	\$636	\$52
Communications, Utilities, and Misc. Charges (23.3)	\$3,082	\$3,138	\$3,419	\$281
NTWK Use Data TRANSM SVC (23.8)	\$0	\$0	\$0	\$0
Printing and Reproduction (24.0)	\$1,385	\$1,409	\$1,536	\$126
Other Contractual Services (25):	<u>\$1,864,692</u>	<u>\$1,898,320</u>	<u>\$2,688,341</u>	<u>\$790,021</u>
Advisory and Assistance Services (25.1)	\$851,150	\$866,500	\$1,227,110	\$360,610
Other Services (25.2)	\$44,439	\$45,241	\$64,069	\$18,828
Purchases from Government Accounts (25.3)	\$889,598	\$905,641	\$1,282,541	\$376,899
Operation and Maintenance of Facilities (25.4)	\$12,224	\$12,444	\$17,623	\$5,179
Research and Development Contracts (25.5)	\$38,053	\$38,739	\$54,861	\$16,122
Medical Services (25.6)	\$1,616	\$1,645	\$2,330	\$685
Operation and Maintenance of Equipment (25.7)	\$27,612	\$28,109	\$39,808	\$11,698
Subsistence and Support of Persons (25.8)	\$0	\$0	\$0	\$0
Consultants, other and misc (25.9)	\$0	\$0	\$0	\$0
Supplies and Materials (26.0)	\$146,330	\$148,969	\$150,759	\$1,790
Equipment (31.0)	\$39,869	\$40,588	\$41,068	\$480
Land and Structures (32.0)	\$13,951	\$14,203	\$14,226	\$23
Investments and Loans (33.0)	\$0	\$0	\$0	\$0
Grants, Subsidies, and Contrib (41.0)	\$3,925,133	\$3,995,917	\$4,620,444	\$624,527
Insurance Claims and Indemnities (42.0)	\$162	\$165	\$166	\$0
Interest and Dividends (43.0)	\$0	\$0	\$0	\$0
Refunds (44.0)	\$0	\$0	\$0	\$0
Subtotal Non-Pay Costs	\$6,027,216	\$6,135,909	\$7,556,161	\$1,420,252
Total Budget Authority	\$6,839,946	\$6,963,296	\$8,454,861	\$1,491,566
Average Cost per FTE				
Civilian FTEs	10,147	10,923	11,458	535
Civilian Average Salary and Benefits	\$73	\$69	\$71	\$2.5
Percent change	N/A	-5%	4%	9%
Military FTEs	853	778	778	0
Military Average Salary and Benefits	\$88	\$98	\$105	\$7
Percent change	N/A	12%	7%	-4.5%
Total FTE¹	11,197	11,921	12,456	535
Average Salary and Benefits	\$73	\$69	\$72	\$3
Percent change	N/A	-4%	4%	8%

¹ Total FTEs represents Direct and Working Capital Fund (WCF) FTE. ATSDR and Reimbursable employees are not included.

OBJECT CLASS TABLE – REIMBURSABLE¹

Object Class	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Personnel Compensation:				
Full-Time Permanent(11.1)	\$16,855	\$56,578	\$56,578	\$0
Other than Full-Time Permanent (11.3)	\$5,414	\$18,174	\$18,174	\$0
Other Personnel Comp. (11.5)	\$2,681	\$9,000	\$9,000	\$0
Military Personnel (11.7)	\$3,246	\$10,896	\$10,896	\$0
Special Personal Service Comp. (11.8)	\$149	\$499	\$499	\$0
Total Personnel Compensation	\$28,344	\$95,146	\$95,146	\$0
Civilian Personnel Benefits (12.1)	\$8,290	\$27,827	\$27,827	\$0
Military Personnel Benefits (12.2)	\$1,426	\$4,787	\$4,787	\$0
Benefits to Former Personnel (13.0)	\$6	\$22	\$22	\$0
Subtotal Pay Costs	\$38,067	\$127,782	\$127,782	\$0
Travel (21.0)	\$2,835	\$9,518	\$9,518	\$0
Transportation of Things (22.0)	\$710	\$2,383	\$2,383	\$0
Rental Payments to GSA (23.1)	\$632	\$2,123	\$2,123	\$0
Rental Payments to Others (23.2)	\$109	\$367	\$367	\$0
Communications, Utilities, and Misc. Charges (23.3)	\$406	\$1,364	\$1,364	\$0
NTWK Use, Data Transm Svc (23.8)	\$0	\$0	\$0	\$0
Printing and Reproduction (24.0)	\$31	\$104	\$104	\$0
Other Contractual Services (25):				
Advisory and Assistance Services (25.1)	\$52,149	\$175,054	\$175,054	\$0
Other Services (25.2)	\$3,750	\$12,588	\$12,588	\$0
Purchases from Government Accounts (25.3)	\$21,603	\$72,516	\$72,516	\$0
Operation and Maintenance of Facilities (25.4)	\$548	\$1,840	\$1,840	\$0
Research and Development Contracts (25.5)	\$215	\$722	\$722	\$0
Medical Services (25.6)	\$511	\$1,716	\$1,716	\$0
Operation and Maintenance of Equipment (25.7)	\$3,358	\$11,273	\$11,273	\$0
Subsistence and Support of Persons (25.8)	\$0	\$0	\$0	\$0
Consultants, other and misc (25.9)	\$0	\$0	\$0	\$0
Subtotal Other Contractual Services	\$282,447	\$307,886	\$335,561	\$27,675
Supplies and Materials (26.0)	\$5,224	\$17,534	\$17,534	\$0
Equipment (31.0)	\$4,474	\$15,017	\$15,017	\$0
Land and Structures (32.0)	\$0	\$0	\$0	\$0
Investments and Loans (33.0)	\$0	\$0	\$0	\$0
Grants, Subsidies, and Contributions (41.0)	\$13,740	\$46,122	\$46,122	\$0
Insurance Claims and Indemnities (42.0)	\$50,637	\$169,977	\$169,977	\$0
Interest and Dividends (43.0)	\$0	\$0	\$0	\$0
Refunds (44.0)	\$0	\$0	\$0	\$0
Subtotal Non-Pay Costs	\$160,933	\$540,218	\$540,218	\$0
Total Budget Authority	\$199,000	\$668,000	\$668,000	\$0
Reimbursable FTEs	197	208	208	0
Military FTEs	27	20	20	0
Total FTEs	224	228	228	0

¹ FY 2021 and FY 2022 Reflect Reimbursable Ceiling estimates.

OBJECT CLASS TABLE – PREVENTION AND PUBLIC HEALTH FUND^{1,2}

(dollars in thousands)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Personnel Compensation:				
Full-Time Permanent(11.1)	\$8,935	\$8,955	\$9,448	\$493
Other than Full-Time Permanent (11.3)	\$1,058	\$1,061	\$1,119	\$58
Other Personnel Comp. (11.5)	\$735	\$736	\$777	\$41
Military Personnel (11.7)	\$439	\$440	\$464	\$24
Special Personal Service Comp. (11.8)	\$305	\$305	\$322	\$17
Total Personnel Compensation	\$11,472	\$11,497	\$12,131	\$633
Civilian personnel Benefits (12.1)	\$3,580	\$3,588	\$3,785	\$198
Military Personnel Benefits (12.2)	\$187	\$188	\$198	\$10
Benefits to Former Personnel (13.0)	\$0	\$0	\$0	\$0
Subtotal Pay Costs	\$15,239	\$15,273	\$16,114	\$841
Travel (21.0)	\$350	\$351	\$370	\$19
Transportation of Things (22.0)	\$34	\$34	\$36	\$2
Rental Payments to GSA (23.1)	\$0	\$0	\$0	\$0
Rental Payments to Others (23.2)	\$9	\$9	\$10	\$1
Communications, Utilities, and Misc. Charges (23.3)	\$3	\$3	\$3	\$0
NTWK Use Data TRANSM SVC (23.8)	\$0	\$0	\$0	\$0
Printing and Reproduction (24.0)	\$28	\$28	\$30	\$2
Other Contractual Services (25):	\$152,627	\$152,966	\$161,390	\$8,424
Advisory and Assistance Services (25.1)	\$84,901	\$85,090	\$89,776	\$4,686
Other Services (25.2)	\$1,006	\$1,009	\$1,064	\$56
Purchases from Government Accounts (25.3)	\$57,147	\$57,274	\$60,428	\$3,154
Operation and Maintenance of Facilities (25.4)	\$0	\$0	\$0	\$0
Research and Development Contracts (25.5)	\$5,580	\$5,592	\$5,900	\$308
Medical Services (25.6)	\$573	\$574	\$606	\$32
Operation and Maintenance of Equipment (25.7)	\$3,419	\$3,427	\$3,615	\$189
Subsistence and Support of Persons (25.8)	\$0	\$0	\$0	\$0
Consultants, other and misc (25.9)	\$0	\$0	\$0	\$0
Supplies and Materials (26.0)	\$47,018	\$47,123	\$49,718	\$2,595
Equipment (31.0)	\$3,540	\$3,548	\$3,743	\$195
Land and Structures (32.0)	\$0	\$0	\$0	\$0
Investments and Loans (33.0)	\$0	\$0	\$0	\$0
Grants, Subsidies, and Contributions (41.0)	\$635,401	\$636,815	\$671,885	\$35,071
Insurance Claims and Indemnities (42.0)	\$0	\$0	\$0	\$0
Interest and Dividends (43.0)	\$0	\$0	\$0	\$0
Refunds (44.0)	\$0	\$0	\$0	\$0
Subtotal Non-Pay Costs	\$839,011	\$840,877	\$887,186	\$46,309
Total Budget Authority²	\$854,250	\$856,150	\$903,300	\$47,150
Average Cost per FTE				
Civilian FTEs	230	230	230	0
Civilian Average Salary and Benefits	\$64	\$64	\$67	\$4
Percent change	N/A	0%	6%	5%
Military FTEs	20	20	20	0
Military Average Salary and Benefits	\$31	\$31	\$33	\$2
Percent change	N/A	0%	6%	5%
Total FTEs	250	250	250	0
Average Salary and Benefits	\$61	\$61	\$64	\$2
Percent change	N/A	0%	6%	5%

¹ PPHF FTEs based on direct hire estimates ² PPHF Civilian Avg. Salary only includes partial compensation

SALARIES AND EXPENSES

(dollars in thousands)	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Personnel Compensation:				
Full-Time Permanent(11.1)	\$451,347	\$459,487	\$513,233	\$53,746
Other than Full-Time Permanent (11.3)	\$59,390	\$60,462	\$65,176	\$4,715
Other Personnel Comp. (11.5)	\$35,925	\$36,573	\$39,425	\$2,852
Military Personnel (11.7)	\$55,608	\$56,611	\$61,507	\$4,896
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Total Personnel Compensation	\$604,902	\$615,811	\$682,228	\$66,417
Civilian personnel Benefits (12.1)	\$188,439	\$191,837	\$196,201	\$4,364
Military Personnel Benefits (12.2)	\$19,169	\$19,515	\$20,042	\$527
Benefits to Former Personnel (13.0)	\$220	\$224	\$229	\$5
Subtotal Pay Costs	\$812,730	\$827,387	\$898,700	\$71,313
Travel (21.0)	\$25,153	\$25,607	\$27,903	\$2,296
Transportation of Things (22.0)	\$4,268	\$4,344	\$4,734	\$390
Rental Payments to Others (23.2)	\$573	\$583	\$636	\$52
Communications, Utilities, and Misc. Charges (23.3)	\$3,082	\$3,138	\$3,419	\$281
Printing and Reproduction (24.0)	\$1,385	\$1,409	\$1,536	\$126
Other Contractual Services (25):	<u>\$1,864,692</u>	<u>\$1,898,320</u>	<u>\$2,688,351</u>	<u>\$790,031</u>
Advisory and Assistance Services (25.1)	\$851,150	\$866,500	\$1,227,110	\$360,610
Other Services (25.2)	\$44,439	\$45,241	\$64,069	\$18,828
Purchases from Government Accounts (25.3)	\$889,598	\$905,641	\$1,282,541	\$376,899
Operation and Maintenance of Facilities (25.4)	\$12,224	\$12,444	\$17,623	\$5,179
Research and Development Contracts (25.5)	\$38,053	\$38,739	\$54,861	\$16,122
Medical Services (25.6)	\$1,616	\$1,645	\$2,330	\$685
Operation and Maintenance of Equipment (25.7)	\$27,612	\$28,109	\$39,808	\$11,698
Subsistence and Support of Persons (25.8)	\$0	\$0	\$10	\$10
Supplies and Materials (26.0)	\$146,330	\$148,969	\$150,759	\$1,790
Subtotal Non-Pay Costs	\$2,045,483	\$2,082,371	\$2,877,338	\$794,967
Rental Payments to GSA (23.1)	\$2,617	\$2,664	\$2,929	\$265
Total, Salaries & Expenses and Rent	\$2,860,831	\$2,912,422	\$3,778,968	\$866,546
Direct FTE¹	11,197	11,921	12,456	535

¹Total FTEs represents Direct and Working Capital Fund (WCF) FTE. ATSDR and Reimbursable employees are not included.

DETAIL OF FULL-TIME EQUIVALENT EMPLOYMENT (FTE) ¹

	FY 2020			FY 2021			FY 2022		
	Civilian	CC	Total	Civilian	CC	Total	Civilian	CC	Total
Immunization and Respiratory Diseases	649	61	710	754	60	814	769	60	829
Direct	647	60	707	754	60	814	769	60	829
Reimbursable	2	1	3	-	-	-	-	-	-
HIV/AIDS, Viral Hepatitis, STI and TB Prev.	1,012	79	1,091	1,044	72	1,116	1,044	72	1,116
Direct	1,011	79	1,090	1,042	72	1,114	1,042	72	1,114
Reimbursable	1	-	1	2	-	2	2	-	2
Emerging and Zoonotic Infectious Diseases	1,204	135	1,339	1,380	128	1,508	1,380	128	1,508
Direct	1,185	129	1,314	1,336	124	1,460	1,336	124	1,460
Reimbursable	19	6	25	44	4	48	44	4	48
Chronic Disease Prevention and Health Promotion	773	56	829	780	56	836	810	56	866
Direct	758	54	812	780	54	834	810	54	864
Reimbursable	15	2	17	-	2	2	-	2	2
Birth Defects, Developmental Disabilities, Disability and Health	198	9	207	200	11	211	200	11	211
Direct	196	8	204	199	11	210	199	11	210
Reimbursable	2	1	3	1	-	1	1	-	1
Environmental Health	446	39	485	449	33	482	489	33	522
Direct	404	38	442	411	32	443	451	32	483
Reimbursable	42	1	43	38	1	39	38	1	39
Injury Prevention and Control	389	30	419	450	30	480	830	30	860
Direct	388	29	417	443	30	473	823	30	853
Reimbursable	1	1	2	7	-	7	7	-	7
Public Health Scientific Services	1,327	85	1,412	1,522	85	1,607	1,552	85	1,637
Direct	1,270	84	1,354	1,462	84	1,546	1,492	84	1,576
Reimbursable	57	1	58	60	1	61	60	1	61
Occupational Safety and Health	983	91	1,074	1,008	79	1,087	1,008	79	1,087
Direct	981	91	1,072	992	79	1,071	992	79	1,071
Reimbursable	2	-	2	16	-	16	16	-	16
Global Health	1,108	172	1,280	1,143	146	1,289	1,143	146	1,289
Direct	1,056	159	1,215	1,107	134	1,241	1,107	134	1,241
Reimbursable	52	13	65	36	12	48	36	12	48
Public Health Preparedness and Response	383	66	449	413	51	464	413	51	464
Direct	379	65	444	409	51	460	409	51	460
Reimbursable	4	1	5	4	-	4	4	-	4
Cross-Cutting Activities and Program Support	1,845	57	1,902	1,980	47	2,027	2,020	47	2,067
Direct	1,845	57	1,902	1,980	47	2,027	2,020	47	2,067
BA	425	23	448	560	24	584	600	24	624
WCF	1,420	34	1,454	1,420	23	1,443	1,420	23	1,443
CDC Total	10,317	880	11,197	11,123	798	11,921	11,658	798	12,456
CDC Direct Total	10,120	853	10,973	10,915	778	11,693	11,450	778	12,228
CDC Reimbursable Total	197	27	224	208	20	228	208	20	228

¹ CDC FTE only. Excludes ATSDR.

DETAIL OF POSITIONS^{1,2,3,4}

	FY 2019 Final	FY 2020 Enacted	FY 2021 President's Budget
Executive Level⁴			
Executive level I			
Executive level II			
Executive level III			
Executive level IV			
Executive level V			
Subtotal			
Total-Executive Level Salary			
ES-6			
ES-5			
ES-4			
ES-3			
ES-2			
ES-1			
Total - SES	31	31	30
Total - SES Salary	\$5,685,896	\$5,574,032	\$5,775,909
GS-15	826	790	736
GS-14	2,309	2,244	2,161
GS-13	3,402	3,418	3,318
GS-12	1,738	1,741	1,687
GS-11	843	877	860
GS-10	38	34	32
GS-9	499	497	473
GS-8	67	65	64
GS-7	293	300	275
GS-6	29	29	27
GS-5	131	204	189
GS-4	10	6	3
GS-3	1	1	1
GS-2	2	0	0
GS-1	0	0	0
Subtotal	10,188	10,206	9,826
Total - GS Salary	\$1,014,773,282	\$1,078,680,998	\$1,085,126,979
Average ES level			
Average ES salary			
Average GS grade	12.0	12.0	12.0
Average GS salary	\$99,605	\$105,691	\$110,434
Average Special Pay Categories			
Average Comm. Corps Salary	\$118,871	\$132,974	\$139,873
Average Wage Grade Salary	\$68,969	\$67,512	\$70,177

¹ Includes special pays and allowances² Totals do not include reimbursable FTEs³ This table reflects "positions" not full-time equivalent(s) (FTEs)⁴ Executive level data not available

CDC FULL TIME EQUIVALENTS FUNDED BY THE AFFORDABLE CARE ACT, P.L. 111-148

(dollars in millions)	ACA Sec.	2012 Total	2012 FTEs	2013 Total	2013 FTEs	2014 Total	2014 FTEs	2015 Total	2015 FTEs	2016 Total	2016 FTEs	2017 Total	2017 FTEs	2018 Total	2018 FTEs	2019 Total	2019 FTEs	2020 Total	2020 FTEs	2021 Total	2021 FTEs	2022 Total	2022 FTEs
PPHF Program ^{1,2}																							
Healthcare-associated Infections (HAI)	400 2	\$11.8	5.0	\$11.8	0.0	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4
Million Hearts	400 2	\$0.0	2.2	\$4.6	0.3	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1
National Early Care Collaboratives	400 2	\$0.0	0.0	\$0.0	0.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0
Public Health Workforce	400 2	\$25.0	176.3	\$15.6	91.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0	\$0.0	0.0
America's Health Block Grant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Antibiotic Resistance Initiative	N/A	\$36.8	183.5	\$32.0	91.3	\$20.0	9.5	\$20.0	9.5	\$20.0	9.5	\$20.0	9.5	\$20.0	9.5	\$20.0	9.5	\$20.0	9.5	\$20.0	9.5	\$20.0	9.5
Total		2012 Total	2012 FTEs	2013 Total	2013 FTEs	2014 Total	2014 FTEs	2015 Total	2015 FTEs	2016 Total	2016 FTEs	2017 Total	2017 FTEs	2018 Total	2018 FTEs	2019 Total	2019 FTEs	2020 Total	2020 FTEs	2021 Total	2021 FTEs	2022 Total	2022 FTEs

¹Excludes employees or contractors who: Are supported through appropriations enacted in laws other than PPACA and work on programs that existed prior to the passage of PPACA; Spend less than 50% of their time on activities funded by or newly authorized in ACA; or who work on contracts for which FTE reporting is not a requirement of their contract, such as fixed price contracts.

²CDC tracks total contract costs for ACA activities in the Affordable Care Act Object Class Table but does not track individual contract staff.

(dollars in millions)	ACA Sec.	2012 Total	2012 FTEs	2013 Total	2013 FTEs	2014 Total	2014 FTEs	2015 Total	2015 FTEs	2016 Total	2016 FTEs	2017 Total	2017 FTEs	2018 Total	2018 FTEs	2019 Total	2019 FTEs	2020 Total	2020 FTEs	2021 Total	2021 FTEs	2022 Total	2022 FTEs
ACA Program ^{1,2}																							
Childhood Obesity PL 114-10	4306	\$11.8	5.0	\$11.8	0.0	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4	\$12.0	6.4
Medical Monitoring in Libby, MT	1032 3	\$0.0	2.2	\$4.6	0.3	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1	\$4.0	2.1
Total		\$0.0	0.0	\$0.0	0.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0	\$4.0	1.0

¹Excludes employees or contractors who: Are supported through appropriations enacted in laws other than PPACA and work on programs that existed prior to the passage of PPACA; Spend less than 50% of their time on activities funded by or newly authorized in ACA; or who work on contracts for which FTE reporting is not a requirement of their contract, such as fixed price contracts.²CDC tracks total contract costs for ACA activities in the Affordable Care Act Object Class Table but does not track individual contract staff

PHYSICIANS' COMPARABILITY ALLOWANCE (PCA) WORKSHEET

1) Department and component:

Centers For Disease Control and Prevention

2) Explain the recruitment and retention problem(s) justifying the need for the PCA pay authority.

(Please include any staffing data to support your explanation, such as number and duration of unfilled positions and number of accessions and separations per fiscal year.)

CDC has found that SES salaries do not meet the threshold to attract top level senior officials for critical science-focused positions who are appointed under SES. The use of PCA is critical, as it allows CDC to recruit and retain top level senior officials who possess requisite scientific expertise, and whose national/international stature command salaries which exceed the SES salary level.

3-4) Please complete the table below with details of the PCA agreement for the following years:

	PY 2020 (Actual)	CY 2021 (Estimates)	BY* 2022 (Estimates)
3a) Number of Physicians Receiving PCAs	1	1	1
3b) Number of Physicians with One-Year PCA Agreements	0	0	0
3c) Number of Physicians with Multi-Year PCA Agreements	1	1	1
4a) Average Annual PCA Physician Pay (without PCA payment)	183100	183100	183100
4b) Average Annual PCA Payment	30,000	14,000	14,000

*BY data will be approved during the BY Budget cycle. Please ensure each column is completed.

5) Explain the degree to which recruitment and retention problems were alleviated in your agency through the use of PCAs in the prior fiscal year.

(Please include any staffing data to support your explanation, such as number and duration of unfilled positions and number of accessions and separations per fiscal year.)

The use of PCA has enabled successful recruitment of physicians to key positions at CDC. It is anticipated that the failure to offer PCA to CDC physicians could would have a negative impact on CDC's global mission.

6) Provide any additional information that may be useful in planning PCA staffing levels and amounts in your agency.

The need will remain to pay PCA to any new physicians appointed under SES. Market pay will be utilized for all new accessions for physicians appointed under Title 5.

DIGITAL MODERNIZATION - IDEA

Modernization of the Public-Facing Digital Services – 21st Century Integrated Digital Experience Act

The 21st Century Integrated Digital Experience Act (IDEA) was signed into law on Dec. 20, 2018. It requires data-driven, user-centric website and digital services modernization, website consolidation, and website design consistency in all Executive Agencies. Departments across the federal landscape are working to implement innovative digital communications approaches to increase efficiency and create more effective relationships with their intended audiences. The American public expects instant and impactful communications – desired, trusted content available when they want it, where they want it, and in the format they want it. If the consumer is not satisfied they move on and our opportunity for impact is lost.

Modernization Efforts

In FY 2019 HHS engaged Department leadership and developed a Digital Communications Strategy that aligns with the requirements of IDEA. In FY 20, HHS Digital Communications Leaders began implementation of the Strategy in alignment with IDEA, beginning to align budgets to modernization requirements.

As the result of a comprehensive review of costs associated with website development, maintenance, and their measures of effectiveness, HHS will prioritize:

- modernization needs of websites, including providing unique digital communications services, and
- continue developing estimated costs and impact measures for achieving IDEA.

Over the next four years HHS will continue to implement IDEA by focusing extensively on a user-centric, Digital First approach to both external and internal communications and developing performance standards. HHS will focus on training, hiring, and tools that drive the communication culture change necessary to successfully implement IDEA.

Over the next year, HHS Agencies and Offices will work together to continue to implement IDEA and the HHS Digital Communications Strategy across all communications products and platforms.

FY 2016-2022 CONSOLIDATED CDC GRANTS TABLE

(dollars in millions)	FY 2016 Final	FY 2017 Final	FY 2018 Final	FY 2019 Final	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 PB +/- FY 2021	% Formula
These funds are awarded by formula. Δ These funds are not awarded by formula. ● These funds are awarded partially by formula. ‡									
Immunization Cooperative Agreements (BA and PPHF)	Δ								
- Number of Awards	64	64	64	64	64	64	64	0	
- Total Awards	\$369.77	\$369.77	\$369.77	\$301.54	\$301.54	\$301.54	TBD	TBD	
- Total Awards	\$19.52	\$21.52	\$21.52	\$21.52	\$238.48	\$229.37	TBD	TBD	
Enhancing Reviews and Surveillance to Eliminate Maternal Mortality Grants	●								
- Number of Awards	N/A	N/A	N/A	24	24	30	56	26	
- Total Awards				\$9.07	\$9.07	\$11.32	\$19.20	\$7.88	
Behavioral Risk Factor Surveillance System (BRFSS) Grants	●								
- Number of Awards	57	57	57	57	56	56	56	0	
- Total Awards	\$13.90	\$13.20	\$13.47	\$14.39	\$20.22	\$20.22	\$20.22	\$0	
National Notifiable Diseases Surveillance System (NNDSS) Grants	●								
- Number of Awards	61	63	63	58	64	64	64	0	
- Total Awards	\$9.47	\$10.25	\$9.72	\$10.00	\$8.85	\$11.04	\$11.04	\$0	
Safe Water Grants	●								
- Number of Awards	19	19	19	19	24	24	24	0	
- Total Awards	\$2.46	\$2.46	\$2.46	\$2.46	\$2.46	\$2.46	2.46	\$0	

Tracking Network Grants									●
- Number of Awards	26	26	26	26	26	26	26	0	
- Total Awards	\$22.61	\$22.61	\$22.61	\$22.60	\$20.15	\$14.81	\$14.81	\$0	
Asthma Grants to Health Departments									●
- Number of Awards	23	26	25	25	25	25	25	0	
- Total Awards	\$13.90	\$15.70	\$15.70	\$15.70	\$15.70	\$15.70	\$15.70	\$0	
Childhood Lead Poisoning Prevention Grants									●
- Number of Awards	35	35	48	48	53	53	TBD	0	
- Total Awards	\$9.45	\$10.99	\$14.97	\$19.97	\$19.97	\$25.77	TBD	\$0	
Rape Prevention and Education Grants									Δ
- Number of Awards	55	55	55	55	53	53	TBD	TBD	
- Total Awards	\$32.04	\$34.14	\$34.14	\$39.00	\$39.83	\$42.02	TBD	TBD	
National Violent Death Reporting System (NVDRS) Grants									●
- Number of Awards	31	41	41	52	52	52	TBD	TBD	
- Total Awards	\$7.70	\$10.28	\$10.64	\$16.26	\$16.26	\$16.26	TBD	TBD	
Opioid Prevention in States Grants									●
- Number of Awards	16	43	43	101	66	66	66	0	
- Total Awards	\$14.44	\$48.25	\$72.15	\$244.19	\$301.73	\$301.73	301.73	\$0	
Core State Violence and Injury Prevention Program Grants									●
- Number of Awards	20	23	23	23	23	23	23	0	
- Total Awards	\$6.84	\$6.72	\$6.72	\$6.72	\$6.72	\$6.72	\$6.72	\$0	
Occupational Safety and Health Grants									●
- Number of Awards	177	183	136	147	153	137	137	0	

CDC FY 2022 Congressional Justification

- Total Awards	\$95.47	\$97.28	\$46.99	\$90.09	\$90.54	\$89.90	\$89.90	\$0
BioSense/NSSP Grants								
- Number of Awards	31	31	31	31	51	51	51	0
- Total Awards	\$6.56	\$6.56	\$6.56	\$6.56	\$6.56	\$6.56	\$6.56	\$0

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CDC SPECIFIC ITEMS

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CDC DRUG CONTROL PROGRAM AGENCY

RESOURCE SUMMARY

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Drug Resources by Function			
Prevention	\$475.579	\$475.579	\$713.369
Total Drug Resources by Function	\$475.579	\$475.579	\$713.369
Drug Resources by Decision Unit			
Opioid Overdose Prevention and Surveillance	\$475.579	\$475.579	\$713.369
Total Drug Resources by Decision Unit	\$475.579	\$475.579	\$713.369
Drug Resources Personnel Summary			
Total FTEs (Direct Only) ¹	178	234	351
Drug Resources as a Percent of Budget			
Total Agency Budget ^{2,3}	\$7,919.196	\$7,819.446	\$9,497.161
Drug Resources Percentage	6.01%	6.08%	7.51%

¹ Includes vacancies.

² Excludes ATSDR and mandatory programs.

³ Includes funding from the Prevention and Public Health Fund, PHS Evaluation and NEF Direct Transfers.

Program Summary

The Centers for Disease Control and Prevention (CDC) serves as the nation’s public health agency and exercises its expertise in developing and applying disease prevention and control, environmental health, and health promotion and health education activities designed to improve the health of the people of the United States. CDC plays a critical role in the Administration’s strategy by preventing opioid-related harms and overdose deaths. To apply its public health expertise, CDC maintains a five-pillar approach for opioid overdose prevention:

1. Conducting surveillance and research
2. Building state, local, and tribal capacity
3. Supporting providers, health systems and payers
4. Partnering with public safety
5. Empowering consumers to make safe choices

CDC uses data to tailor its response as the overdose epidemic continues to evolve. For example, in response to the rise in deaths attributable to illicit opioids, stimulants and other emerging substance threats, CDC is improving the timeliness and comprehensiveness of fatal and non-fatal drug overdose, as well as strengthening partnerships with public safety and scaling public health strategies to link individuals with substance use to care and treatment. CDC also has dedicated efforts to reach disproportionately affected populations (e.g., tribes and rural communities).

Methodology

CDC determined the drug control budget using the amount appropriated for the Opioid Overdose Prevention and Surveillance Program (previously the Prescription Drug Overdose and Illicit Opioid Use Risk Factors Programs) under the Consolidated Appropriations Act, 2020, P.L. 116-94 and Consolidated Appropriations Act, 2021, P.L. 116-260. CDC is committed to an approach that protects the public's health and prevents opioid and other drug overdose deaths.

Budget Summary

At the President's Budget level, CDC's FY 2022 request of \$713.369 million for drug control activities, is \$237.790 million above the FY 2021 Enacted Level.

Opioid Overdose Prevention and Surveillance

FY 2022 Request: \$713.369 million

(\$237.790 million above the FY 2021 Enacted level)

The President's Budget Request outlines activities in five pillars that capitalize on CDC's scientific expertise: conducting surveillance and research; building state, local, and tribal capacity; supporting providers, health systems, and payers; partnering with public safety; and empowering consumers to make safe choices.

Conduct surveillance and research: Timely, high-quality data are necessary for public health officials and other decision makers to understand the extent of the problem, focus resources, and evaluate the effectiveness of prevention and response efforts. CDC plays a critical role by helping states improve their surveillance systems to better monitor the overdose epidemic and optimize their response activities. In FY 2017, CDC began funding states to collect data on both fatal and nonfatal overdoses. CDC surveillance efforts have helped public health experts adapt to the rapidly changing epidemic, such as tracking trends in nonfatal and fatal overdoses to identify communities at risk and implementing more tailored strategies. Data have also equipped communities with the necessary information to help save lives in cases of nonfatal overdose. For example, Ohio detects drug-related anomalies to help identify suspected overdoses, and makes these data, the alerts regarding anomalies, and automated report functions available in the state's syndromic system. The Ohio state health department encourages local health departments to use these data to quickly inform action, and provides guidance on developing community response plans for increases in suspected drug overdoses.

CDC's State Unintentional Drug Overdose Reporting System (SUDORS) allows states to collect data on all unintentional or undetermined intent drug overdose deaths in one place. Data collected by SUDORS includes valuable contextual information from death scene investigations, detailed information on toxicology and drugs contributing to death, the route of administration, and other risk factors associated with fatal overdose. Mortality reporting has been incentivized to provide SUDORS data as quickly as 6-11 months after the death occurs. This is a critical data system that states spot trends and understand factors leading up to overdose deaths.

CDC continues to look for upstream prevention efforts, such as collecting data on key risk factors like Adverse Childhood Experiences (ACEs). In FY 2020, CDC supported all 50 states to include an ACEs module in their annual Behavioral Risk Factor Surveillance System (BRFSS) survey—a state-based phone survey that collects data on risk factors, chronic health conditions, and use of preventive services. The module includes questions related to substance use, which helps assess the relationship between substance use and ACEs. CDC also included ACEs and opioid misuse surveillance questions on an internet panel survey to provide better insight into trends in ACEs and their connection to opioid misuse over time—a key function of public health surveillance and one that is not currently supported by existing retrospective data systems.

Research is another critical component in CDC's role in responding to the epidemic. Once CDC experts identify successful strategies, they work to understand how the interventions can be implemented in other jurisdictions, then continuously evaluate and refine them. For example, CDC led an evaluation of medication for opioid use disorder (MOUD) to improve the evidence base and how it can be scaled up to achieve population-level impact. This research assessed the type of MOUD and the contextual, provider, and individual factors that influence implementation and improve patient wellbeing.

Build state, local, and tribal capacity: States, communities, and tribes play an important role in preventing overdoses and related harms. For instance, they coordinate Prescription Drug Monitoring Programs (PDMPs), license healthcare providers, respond to drug overdose outbreaks, and run large public insurance programs such as Medicaid and workers' compensation. The Overdose Data to Action (OD2A) program⁴²¹ provides approximately \$300 million per year to 47 states, Washington, D.C., 16 localities, and two territories to advance the understanding of the opioid overdose epidemic and to scale up prevention and response activities. Through OD2A, CDC helps states, territories, and localities implement linkage to care activities that facilitate connection with recovery community organizations, including peer recovery, harm reduction groups, or local treatment providers. To improve local prevention and response, OD2A directly funds localities and requires state recipients to direct 20 percent of prevention funds to local communities.

In addition to supporting surveillance capacity, CDC supports jurisdictions to put what they learn into action. In Maryland, CDC funds support Overdose Fatality Review Teams—comprised of multi-agency and multi-disciplinary members—to conduct confidential case reviews of overdose deaths in order to prevent future deaths. Teams identify additional opportunities for prevention, gaps in the system, and areas for increased collaboration among agencies and local partners. CDC resources also build jurisdictions' capacity to use PDMP data to inform action, educate the public about risks, customize prevention activities to communities, and prioritize populations of need (including rural and tribal communities). For example, Washington made the PDMP available directly within electronic health records at emergency departments and urgent care sites.

CDC also helps jurisdictions establish and improve patient linkages to MOUD and other supportive services. For example, Kentucky used CDC funds to develop the state's "Find Help Now" website, which links individuals to over 530 treatment facilities that are represented by 230 different providers. In communities that experience high rates of overdoses, CDC addresses upstream risk factors for opioid misuse by supporting local public health departments to implement a comprehensive community approach that prevents ACEs and strengthen resilience after any ACE exposure. This work integrates public health institutes to rigorously evaluate the approach and share lessons to scale up successful mechanisms. Finally, CDC supports its Essentials for Childhood (EfC) recipients to address risk and protective factors for opioid misuse and ACEs. This supplemental funding supports partnership development, program implementation, data collection, and evaluation activities conducted by state health departments.

Prevention efforts (e.g., harm reduction and linkage to care initiatives) had to adapt in the wake of the COVID-19 pandemic. In response, CDC identified and scaled up innovative practices across states. CDC also determined how substance use patterns and attitudes among youth changed due to COVID-19 and identified needs to support youth in decreasing or quitting substance use. CDC developed tailored public health messaging and interventions to prevent detrimental long-term consequences due substance misuse during COVID-19. These intervention strategies address both prescription and illicit opioids, emerging substances such as stimulants, and polysubstance use. Efforts support integration of state and local prevention and response efforts, linkage to care, provide support for providers and health systems prevention (including use of PDMPs as a clinical decision support tool), enhance partnerships with public safety and first responders, establish and improve linkages to MOUD and other supportive services, and empower individuals to make informed choices.

⁴²¹ <https://www.cdc.gov/drugoverdose/od2a/index.html>.

Support providers, health systems, and payers: CDC supports providers and healthcare systems with practices to increase safer prescribing, maximize the use of PDMPs, and advance insurer and health systems interventions at the federal, state, and local level. An impact study of the *CDC Guideline for Prescribing Opioids for Chronic Pain* (2016)⁴²² found that there were approximately 14.2 million fewer opioid prescriptions filled from March 2016 to December 2017. A second study released in August 2018 showed that from 2017 to 2018, the number of high-dose opioid prescriptions decreased by 21%, and the number of naloxone prescriptions—a life-saving medication that can reverse the effects of an opioid overdose—increased 106 percent.

CDC also supports continuing medical education and other health professional training to advance better pain management practices, with specific focus on under-resourced populations (e.g. rural, tribal). In 2018, CDC published *Quality Improvement and Care Coordination: Implementing the CDC Guideline for Prescribing Opioids for Chronic Pain*⁴²³ to help healthcare systems integrate the guideline and associated quality improvement measures into their clinical practice. This resource offers primary care providers, practices, and healthcare systems a framework for managing patients on long-term opioid therapy. Afterwards, CDC launched a Quality Improvement (QI) Collaborative in 11 health systems across 12 states to implement the QI measures and track progress. These systems are implementing the guideline recommendations in over 120 primary care practices, including clinics in underserved and rural communities. Many systems are reporting improvements in prescribing and greater guideline-concordant care.

Through OD2A, CDC supports collaborations between health systems and state health departments. This includes identifying and scaling up promising prevention practices such as overdose protocols, coordinated care models for high-risk opioid patients, and quality improvement strategies to improve opioid prescribing practices. CDC is collaborating with the Office of the National Coordinator for Health Information Technology (ONC) to create sharable clinical decision supports to integrate guideline recommendations into electronic health records (EHRs), such as alerts in EHRs for morphine milligram equivalent thresholds, prompts to check the PDMP, and reminders for follow-up visits with patients.

Partner with public safety: Law enforcement is a critical partner in improving surveillance activities, sharing data, and tailoring interventions. CDC works with the Office of National Drug Control Policy (ONDCP) to support the Overdose Response Strategy (ORS), which is an unprecedented public health/public safety partnership between CDC and High Intensity Drug Trafficking Areas (HIDTAs) across a majority of states. The ORS was created to help local communities reduce drug overdoses and save lives by sharing timely data, pertinent intelligence, and innovative strategies. The ORS aims to reduce fatal and nonfatal overdoses through prevention, law enforcement, response, treatment, and recovery. CDC funds yearly pilot projects in ORS states to build the evidence base for effective and local interventions. Projects include integrating overdose protocols into a mobile health program, conducting overdose education and naloxone distribution in jail/prison settings, and working with families and infants with Neonatal Abstinence Syndrome (NAS) to decrease opioid-related harms.

CDC also partners with ONDCP to provide funding for community-based projects as part of the ORS' Combatting Opioid Overdose through Community-level Intervention (COOCLI). This effort supports implementing strategies within a prioritized geographic area that other communities can employ. Projects include efforts on post-overdose linkage to care strategies using patient navigators and recovery coaches; justice-involved populations and access to medications for opioid use disorder (MOUD); and buprenorphine induction in the emergency department. One example of this work is The Martinsburg Initiative, an innovative, multisector partnership focused on opioid overdose prevention. This project expands community resources and links law enforcement, schools, communities, and families to assess participants' ACE scores, then connect them to necessary resources and support.

⁴²² <https://www.cdc.gov/drugoverdose/prescribing/guideline.html>.

⁴²³ <https://www.cdc.gov/drugoverdose/pdf/prescribing/CDC-DUIP-QualityImprovementAndCareCoordination-508.pdf>.

Empower consumers to make safe choices: One of CDC’s priorities is raising awareness about the risks of opioid misuse and providing individuals with the resources and information they need to make informed choices. CDC’s *Rx Awareness* campaign features testimonials from people recovering from prescription opioid use disorder and people who have lost loved ones to opioid overdose. The campaign aims to increase awareness that prescription opioids can be addictive and dangerous, lower prescription opioid misuse, increase the number of patients seeking nonopioid pain management options, increase awareness about recovery, and to reduce stigma, which is a barrier for recovery and access to care. CDC continues promoting awareness of risks associated with nonmedical use of opioids, factors that increase risks (such as fentanyl in the local drug supply), and approaches to reduce risks. In FY 2020, CDC also began funding health education campaigns to educate the public about the risks of synthetic opioids, illicit drugs, and polysubstance use and abuse; promote harm reduction strategies; and increase empathy and compassion for people who use drugs (reducing stigma).

Performance

In Fiscal Year 2021, CDC conducted cutting-edge overdose work across the five pillars of the response strategy. CDC continues to promote utilization of the Guideline, and spreads awareness that prescription opioids can be addictive and dangerous through the Rx Awareness campaign. Recently, 74% of survey respondents exposed to the Rx Awareness campaign pilot reported the campaign was effective or very effective at improving their related knowledge.

CDC tracks two performance measures as part of its budget justification focused on overdose.

Reduce the age-adjusted rate of overdose deaths involving natural and semisynthetic opioids (T40.2) or methadone (T40.3) as a contributing cause of death among states funded through CDC’s multi-state surveillance and prevention cooperative agreement(per 100,000 residents)

- Most recent result: 4.5 (2019, Overdose Data to Action state awardees[†])
- 4.9 (2018, Prevention for States state awardees*)
- Target: 3.6 (2022)

Reduce age-adjusted annual rate of overdose deaths involving synthetic opioids other than methadone (e.g., fentanyl) among states funded through CDC’s multi-state surveillance and prevention cooperative agreement (per 100,00 residents) (Outcome)

- Most recent result: 12.4 (2019, Overdose Data to Action state awardees[†])
- 11.2 (2018, Prevention for States state awardees*)
- Target: 7.7 (2022)

[†]Denominator is states funded under CDC’s Overdose Data to Action cooperative agreement:
<https://www.cdc.gov/drugoverdose/od2a/index.html>

*Denominator was states funded under CDC’s now-completed Prevention for States cooperative agreement: Arizona, California, Colorado, Connecticut, Delaware, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Nebraska, Nevada, New Mexico, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

SIGNIFICANT ITEMS

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SIGNIFICANT ITEMS IN FY 2021 APPROPRIATIONS REPORT – CONFERENCE

DIVISION M CORONAVIRUS RESPONSE AND RELIEF SUPPLEMENTAL APPROPRIATIONS ACT, 2021

Significant items for inclusion in the FY 2022 Centers for Disease Control and Prevention Congressional Justification from Conference Bill, House Rules Committee Print 116–68, Division M.

Coronavirus Vaccine Distribution and Spend Plan

Coronavirus Vaccine Distribution Strategy and Spend Plan - That the Director of the CDC shall provide an updated and comprehensive coronavirus vaccine distribution strategy and a spend plan, to include funds already allocated for distribution, to the Committees on Appropriations of the House of Representatives and the Senate and the Committee on Energy and Commerce of the House of Representatives and Committee on Health, Education, Labor, and Pensions of the Senate within 30 days of enactment of this Act: Provided further, That such strategy and plan shall include how existing infrastructure will be leveraged, enhancements or new infrastructure that may be built, considerations for moving and storing vaccines, guidance for how States, localities, territories, tribes, tribal organizations, urban Indian health organizations, or health service providers to tribes, and health care providers should prepare for, store, and administer vaccines, nationwide vaccination targets, funding that will be distributed to States, localities, and territories, how an informational campaign to inform both the public and health care providers will be executed, and how the strategy and plan will focus efforts on high-risk and underserved populations, including racial and ethnic minority populations: Provided further, That such strategy and plan shall be updated and provided to the Committees on Appropriations of the House of Representatives and the Senate and the Committee on Energy and Commerce of the House of Representatives and Committee on Health, Education, Labor, and Pensions of the Senate every 90 days through the end of the fiscal year: Provided further, That amounts appropriated under this heading in this Act may be used for grants for the construction, alteration, or renovation of non-Federally owned facilities to improve preparedness (Page 1821-1822, House Rules Committee Print 116–68, Division M)

Action taken or to be taken

CDC submitted the initial Report to Congress and will submit reoccurring updates as requested.

DIVISION G DEPARTMENT OF THE INTERIOR, ENVIRONMENT, AND RELATED AGENCIES APPRIOPRIATIONS ACT, 2021

Significant items for inclusion in the FY 2022 Centers for Disease Control and Prevention Congressional Justification from Conference Joint Explanatory Statement (JES) Division G.

Areas with High Incidence of Pediatric Cancer

The Committees acknowledge that it has received a report from ATSDR that provides details on the geographic variation in pediatric cancer incidence in the United States. The Committees urge the Agency to conduct public outreach and provide education to communities affected by pediatric cancer clusters and States with abnormally high incidences of pediatric cancer. The Committees direct the Agency to brief the Committees within 120 days of enactment of this Act regarding its actions to improve awareness by communities of possible contributing factors to pediatric cancer, including environmental factors. (Page 82, P.L. 116-260, Division G JES)

Action taken or to be taken

CDC completed a Briefing as requested.

Per- and Polyfluoroalkyl Substance (PFAS)

Per- and Polyfluoroalkyl Substances (PFAS).-The Agency shall follow direction included in Senate Report 116-123 with regards to per- and polyfluoroalkyl substances. (Page 82, P.L. 116-260, Division G JES)

Per- and Polyfluoroalkyl Substances [PFAS].—The Committee recognizes the importance of making information available on PFAS to understand and address the needs of communities exposed to these chemicals and is aware that the Agency for Toxic Substances Band Disease Registry [ATSDR] toxicological profile for four BPFAS substances prepared pursuant to 42 U.S.C. 9604(i)(2) has been released as a draft for public comment. This information is critically important to Federal and State efforts to respond and strengthen the effectiveness of drinking water advisories or standards for these materials. Therefore, ATSDR is directed to publish to the Federal Register within 15 days of enactment of the final toxicological profile which includes the chemicals perfluorooctanoic acid [PFOA], perfluorooctane sulfonic acid [PFOS], perfluorononanoic acid [PFNA], and perfluorohexane sulfonic acid [PFHxS]. Furthermore, within 15 days of enactment of this act, ATSDR is directed to work with the appropriate Federal partners to submit a report to the Committee identifying any changes made after January 30, 2019, to the toxicology profile of the PFAS substances and include ATSDR's recommendations for next steps for addressing health concerns related to PFAS. (Page 119-120, S.R. 116-123)

Action taken or to be taken

CDC submitted a Report to Congress as requested on May 7th, 2021.

DIVISION H DEPARTMENTS OF LABOR, HEALTH AND HUMAN SERVICES, AND EDUCATION, AND RELATED AGENCIES APPROPRIATIONS ACT, 2021

Significant items for inclusion in the FY 2022 Centers for Disease Control and Prevention Congressional Justification from Conference Joint Explanatory Statement (JES) Division H.

Antimicrobial Resistance (AMR)

The agreement provides an increase to support AMR programs and directs CDC to expand prevention efforts to reduce the emergence and spread of AMR pathogens and improve appropriate antibiotic use. The agreement also directs CDC to utilize these funds to expand laboratory and epidemiological surveillance of bacterial and fungal co-infections. The agreement continues to include \$500,000 for CDC to use their broad agency agreement to fund innovative projects that use population-based research to define risk factors for these pathogens in community settings. (Page 22, P.L.116-260 Division H JES)

Action taken or to be taken

CDC and NIH completed a briefing with the Committees on Antimicrobial Resistance on February 5th, 2021.

In October 2020, CDC joined with other U.S. government agencies to release a new National Action Plan for Combating Antibiotic-resistant Bacteria (CARB), 2020 – 2025. The plan presents coordinated, strategic actions that the U.S. government will take across One Health to improve the health and well-being of all Americans by combatting antibiotic resistance. This Plan is based on the U.S. government’s 2014 National Strategy for Combating Antibiotic-resistant Bacteria and builds on the first National Action Plan (2016 – 2020) released in 2015, by expanding successful activities that are stopping the spread of antibiotic resistance, such as improving the use of antibiotics and increasing infection prevention and control. Over the next 5 years, CDC will continue to accelerate efforts to stop the spread of antibiotic-resistant pathogens and to address key gaps to addressing AR that were identified in CDC’s 2019 AR Threats Report.

CDC released the 2021 Broad Agency Announcement in November 2020 with nine cross-cutting One Health focus areas across healthcare, the community, and the environment (outlined below). In January 2021, CDC received 70 white papers in response and will review and request proposals in the coming months. CDC’s final awards for FY2021 will be made in late summer 2021, August/ September, based on funds available. Focus areas are across the following categories highlighting domestic and international spread, colonization, and prevention of antibiotic-resistant pathogens:

- Improving identification of bacteria plasmids to understand AR epidemiology and ecology
- Building the ability to perform whole genome sequencing in PulseNet regions, including Asia Pacific and Middle East, to improve detection and surveillance of emerging multidrug-resistant enteric (gut) bacteria
- Estimating the prevalence of antifungal-resistant *Aspergillus fumigatus* in low- and middle-income countries
- Evaluating samples for colonization and relatedness with multidrug-resistant organisms
- Evaluating infection prevention and control (IPC) metrics among patients colonized with carbapenem-resistant Enterobacteriaceae (CRE)
- Assessing antibiotic stewardship practices internationally
- Reviewing IPC guidelines, policies, and practices implemented in healthcare facilities
- Developing operational guidance for hospital IPC committees
- Developing a curated, international antibiotic-resistant gonorrhea sample bank

Lyme Disease and Related Tick-Borne Illnesses

The agreement includes an increase for the Kay Hagan Tick Act (P.L. 116-94), to promote a public health approach to combat rising cases of tick-borne diseases. In distributing funds, the agreement directs CDC to prioritize entities focused on Lyme disease and related tick-borne diseases. The agreement directs CDC to develop and implement methods to improve surveillance to more accurately report the disease burden, including through the development of real time data, as well as a process for estimating the prevalence of Post-Treatment Lyme Disease Syndrome. The agreement directs CDC to direct funding to improve early diagnosis of Lyme and related tick-borne diseases to prevent the development of late stage disease and more serious and long-term disability. Further, the agreement directs CDC to include a spend plan for implementation of such public law in the fiscal year 2022 Congressional Justification. The agreement encourages CDC, in coordination with NINOS and NIMH, to include in its surveillance the long-term effects. CDC is also encouraged to coordinate with NIH on publishing reports that assess prevention, treatment, diagnostic advancements, and links between tick-borne disease and psychiatric illnesses. CDC is encouraged to focus efforts in endemic areas as well as areas not yet considered endemic. (Page 22-23, P.L.116-260 Division H JES)

Action taken or to be taken

CDC plans to submit a spend plan report for implementation of the Kay Hagan Tick Act P.L. 116-94.

Comprehensive Cancer

The agreement provides \$750,000 to support CDC's Cancer Genomics Program. CDC shall prioritize new resources for data collection in States with rates of annual ovarian cancer of 11 or more new cases per 100,000 and rates of annual breast cancer of more than 115 new cases per 100,000 according to CDC's 2017 cancer rate statistics. (Page 26, P.L.116-260 Division H JES)

Action taken or to be taken

In fiscal year 2021, CDC plans to work with a national non-governmental organization to competitively award funding to up to six state health departments (chosen from those states with rates of annual ovarian cancer of 11 or more new cases per 100,000 and rates of annual breast cancer of more than 115 new cases per 100,000 according to CDC's 2017 cancer rate statistics) to apply lessons learned from CDC's previous Cancer Genomics cooperative agreement to build the capacity of cancer registries and comprehensive cancer control programs to incorporate genomics into their activities.

Farm-to-School

The agreement continues \$2,000,000 within Nutrition, Physical Activity, and Obesity for research and education activities promoting healthy eating habits for students. These grants support multi-agency and organizational State farm-to-early childhood programs with priority given to entities with experience running farm-to-early childhood programs. CDC is directed to coordinate these efforts with the Office of Community Food Systems at the Department of Agriculture. (Page 26-27, P.L.116-260 Division H JES)

Action taken or to be taken

CDC will continue efforts to protect the health of individuals at every stage of life by encouraging regular physical activity, good nutrition, and preventing adult and childhood obesity. Given the direction to focus on farm to early care and education (ECE) programs, CDC provided funding to the Association of State Public Health Nutritionists (ASPHN) to establish the Farm to Early Care and Education Implementation Grants (FIG). This program provides funding and technical assistance to nutrition professionals at the state level in 10 states and the District of Columbia to expand state capacity to support farm to ECE programs that teach healthy habits at a young age, support local economies, and address equity. Demand for this opportunity was very high, with over 20

states applying to be a part of FIG. CDC continues to collaborate with the USDA Office of Community Food Systems (OCFS) to share updates on each agency’s farm to education initiatives. CDC holds routine calls with OCFS and periodically joins their recipient calls to identify opportunities for collaboration and coordination.

Incontinence Among Older American

The agreement directs CDC to provide an update to the June 2014 report on the prevalence of incontinence among older Americans, including prevalence among both institutionalized and non-institutionalized populations in the fiscal year 2023 Congressional Justification. (Page 27, P.L.116-260 Division H JES)

Action taken or to be taken

The National Center for Health Statistics (NCHS) collects, analyzes, and reports data on incontinence among older Americans via several surveys and programs. The original report addressed both urinary and bowel incontinence. One of the main data sources for the latter no longer collects such information.

The **National Post-acute and Long-term Care Study (NPALS)** is a biennial study that collects data from adult day services centers (ADSC) and residential care communities (RCC) and acquires administrative data from home health, hospice, inpatient rehabilitation facilities, long-term care hospitals, and nursing homes. The 2018 survey asked participants “As far as you know, has [SAMPLED PERSON] had any episodes of incontinence during the past seven days either at their usual residence or this adult day services center?” Answer choices include both urinary and bowel incontinence. The survey data also include demographic characteristics of services users, including age, and could be used to estimate incontinence care among older Americans using long-term care services (provided the estimates meet NCHS reliability and confidentiality standards). The 2020 NPALS is currently in the field and does **not** include any question on incontinence care. The 2022 wave of NPALS will include the same question on incontinence care as the 2018 survey.

The **National Health and Nutrition Examination Survey (NHANES)** is an annual survey including personal interviews and physical examinations to determine the prevalence of major diseases and risk factors for diseases. For noninstitutionalized adults 65 and over, data on urinary incontinence from NHANES are available publicly through 2017-18. Questions on NHANES related to urinary incontinence can be found [here](#), and the data file on “Kidney conditions – urology” can be downloaded from [this webpage](#). In addition, a pre-pandemic 2017-20 data file, including questions on this subject, will be available through the Research Data Center. NHANES plans to continue to collect information on urinary incontinence if the survey is operational in 2021-22, as currently planned. Questions related to bowel incontinence are no longer included on NHANES

The **NCHS Data Linkage Program** links NCHS survey data with administrative data from other federal agencies. Data from the National Health Interview Survey (NHIS), National Health and Nutrition Examination Survey (NHANES) and the National Hospital Care Survey (NHCS) have been linked to CMS Medicare administrative records. NHIS and NHANES have also been linked to Medicaid administrative records. If the CMS data include a procedure code and/or cost and utilization receipt associated with urinary or bowel incontinence, this would be available through the restricted use linked data files. Such data would not provide nationally representative estimates of urinary or bowel incontinence, but would provide insight from self-reported variables (e.g., race/ethnicity, socio-economic status, access to care) collected from the survey in combination with the health condition collected as part of the administrative records.

Maternal Mortality Review Committees (MMRCs)

The agreement provides an increase to expand these efforts and expects CDC to build stronger data systems, improve data collection at the State level, and create consistency in data collection. Further, the agreement encourages CDC to support data collection efforts to further understand maternal heart disease and improve outcomes for pregnant women with heart conditions. (Page 27, P.L.116-260 Division H JES)

Action taken or to be taken

With additional support in FY 2021, CDC will increase the number of MMRCs funded through the Enhancing Reviews and Surveillance to Eliminate Maternal Mortality (ERASE MM) Program, as well as implementing data enhancement efforts and work with partners on heart-disease related maternal mortality.

Public Health Data Modernization

The agreement continues funding for the foundational investments necessary to upgrade the nation's public health data infrastructure. The Committees request a spend plan and briefing no later than 120 days of enactment of this Act on this effort. (Page 33, P.L.116-260 Division H JES)

Action taken or to be taken

CDC submitted a Spend Plan on May 11th, 2021 and conducted a Briefing on May 12th, 2021 as requested.

Training for Health Professionals on Per- and Polyfluoroalkyl Substances (PFAS)

The agreement includes \$1,000,000 for grants for development of voluntary training courses for health professionals to help these professionals understand the potential health impact of PFAS exposure and best practices for treatment. CDC is directed to award multiple grants to medical society organizations, medical institutions with expertise in PFAS, and other organizations as determined appropriate by the Director to develop these training courses. (Page 34, P.L.116-260 Division H JES)

Action taken or to be taken

As community concerns about PFAS exposure and the potential for health effects increase, clinicians play a critical role in sharing accurate information and ensuring that individuals with PFAS exposure receive appropriate medical care. CDC and ATSDR have asked the National Academies of Sciences, Engineering, and Medicine (NASEM) to provide a review of how clinicians could best serve communities and individuals exposed to PFAS. This review will further the understanding of the strength of associations between PFAS body burden and clinically relevant health outcomes, allowing the development of principles for clinical evaluation and biological testing. CDC and ATSDR will use the NASEM review as a basis for the development of clinical guidance and clinician education to ensure people exposed to PFAS receive appropriate medical care. CDC and ATSDR will leverage existing partnerships to fund organizations, including the pediatric environmental health specialty units, to develop educational materials on PFAS for health care professionals and students to increase awareness of potential health impacts of PFAS, and to increase providers' capacity to provide risk mitigation guidance to patients.

Firearm Injury and Mortality Prevention Research

The agreement includes \$12,500,000 to conduct research on firearm injury and mortality prevention. Given violence and suicide have a number of causes, the agreement recommends the CDC take a comprehensive approach to studying these underlying causes and evidence-based methods of prevention of injury, including crime prevention. All grantees under this section will be required to fulfill requirements around open data, open code, pre-registration of research projects, and open access to research articles consistent with the National Science Foundation's open science principles. The Director of CDC is to report to the Committees within 30 days of enactment on implementation schedules and procedures for grant awards, which strive to ensure that such awards support ideologically and politically unbiased research projects. (Page 36-37, P.L.116-260 Division H JES)

Action taken or to be taken

CDC has submitted a Report to Congress as requested.

Opioid Overdose Prevention and Surveillance

The agreement directs CDC to continue funding overdose prevention efforts in the same manner as directed in P.L. 115-245 and expand allowable prevention and surveillance efforts to include stimulants. The agreement encourages CDC to continue to work collaboratively with States to ensure that funding is available to all States for opioid prevention and surveillance activities. (Page 37, P.L.116-260 Division H JES)

Action taken or to be taken

States, communities, and tribes play an important role in preventing overdoses and related harms, and CDC has made significant efforts to implement opioid overdose prevention activities in all 50 states. CDC's Overdose Data to Action (OD2A) cooperative agreement is providing \$290 million in FY 2021 to 47 states (remaining 3 states did not apply), Washington, D.C., 16 localities, and two territories to advance the understanding of the opioid overdose epidemic and to scale-up prevention and surveillance activities. CDC's funding to state health departments recently established the expectation that at least 20% of the prevention component of state awards support investments in local communities to reduce overdose and related harms. This award condition aims to encourage states to combine prevention best practices with individual communities' ability to innovate and grow the evidence base from within areas most in need.

CDC helps states improve surveillance systems to better monitor the epidemic and optimize their response activities. OD2A funds jurisdictions to retrieve high quality, complete, and timelier data on opioid prescribing and overdoses, and then use those data to inform prevention and response. Funded jurisdictions collect information on fatal overdoses from death certificates, medical examiner or coroner reports, toxicology reports, and law enforcement crime scene information. Nonfatal overdose data are captured for all suspected drug, all opioid, heroin, and all stimulant overdoses. The data help public health experts adapt to the rapidly changing epidemic, such as tracking trends in the evolving illicit opioid market to identify communities at risk.

Prevention strategies embedded within OD2A address both prescription and illicit opioids, emerging substances such as stimulants, and polysubstance use. Efforts support integration of state and local prevention and response efforts, support linkage to care, provide support for providers and health systems prevention (including use of prescription drug monitoring programs—PDMPs—as a clinical decision support tool), enhance partnerships with public safety and first responders, establish and improve linkages to medications for opioid use disorder (MOUD) and other supportive services, and empower individuals to make informed choices. CDC is working with states, territories, and localities to respond to the realities of how their work is changing in the wake of the COVID-19 pandemic.

Opioid Prescribing Guidelines

The agreement directs CDC to continue its work educating patients and providers on its Guidelines for Prescribing Opioids for Chronic Pain, and to encourage uptake and use of the guidelines. (Page 37, P.L.116-260 Division H JES)

Action taken or to be taken

CDC developed the Guideline with practicality in mind. To encourage uptake and use of the guideline, CDC created and continues to develop user-friendly tools and resources to make them easy for providers, patients, and public health stakeholders to understand and use.

CDC continues to develop and release resources to support safer, more effective opioid prescribing and pain management. Some of these resources include:

- New modules in the Interactive Training Series for Healthcare Providers: Applying CDC’s Guideline for Prescribing Opioids, such as *Addressing the Opioid Overdose Epidemic in the Emergency Department; Treating Acute Pain Safely and Effectively; and Treatment of Post-Surgical Acute Pain*.
- Videos such as “Tapering Opioids for Chronic Pain,” “Risk Factors,” and “Recommendations for Treatment Acute Dental Pain”
- Clinician fact sheet such as “Identifying Risks When Prescribing Opioids”
- A *Handbook for Healthcare Executives* to provide examples and best practices to create a culture of safer opioid prescribing practices in healthcare organizations.
- An acute pain website for providers that includes materials, training, and resources for clinicians, covering topics on a variety of acute pain management conditions including dental pain.

Suicide Prevention

The agreement includes an increase to continue to utilize data and evaluations to inform ongoing programmatic efforts to prevent suicide, specifically in vulnerable populations and subgroups among which suicides are increasing. These data will be used to inform community-based suicide prevention efforts. CDC is encouraged to expand their emergency department syndromic surveillance project on suicidal behavior to provide near real-time data and to continue to explore data, methods, and research that advance our understanding of suicide and suicidal behavior. The agreement recognizes CDC’s work to establish a comprehensive suicide prevention program and directs CDC to continue the implementation and evaluation of these targeted, comprehensive, community based suicide prevention strategies to reduce risk for suicide, and to evaluate their impact, especially among high-risk populations. The agreement also directs CDC to enhance the completeness of data to capture mechanisms of death and support research and evaluation projects to understand the pathways and mechanisms that contribute to suicidal ideations and attempts. (Page 37-38, P.L.116-260 Division H JES)

Action taken or to be taken

CDC’s mission for suicide prevention is to use data, science, and partnerships to identify and implement effective suicide prevention strategies to foster healthy and resilient communities across the United States. CDC is expanding funding to support two additional approved but unfunded states in FY 2021, for a total of 11 recipients, for the *Comprehensive Suicide Prevention* program (CDC-RFA-CE20-2001) initiated in FY 2020. The goal is to reduce suicide rates in states and communities with attention to populations disproportionately impacted by suicide. Awardees will implement a comprehensive approach to suicide prevention through creation of multisectoral partnership plans, use of data to identify disproportionately impacted populations and to understand the contributors to suicide, creation of an inventory of suicide prevention programs in the jurisdiction, selections of strategies with the best available evidence from CDC’s *Preventing Suicide: A Technical Package of Policy, Programs, and Practices* to fill in prevention gaps, and development of robust communication and dissemination plans. This approach will be evaluated on an ongoing basis with attention to quality improvement. Additional activities include:

- In conjunction with the CDC Foundation, CDC is funding the Veteran Suicide Prevention Evaluation demonstration project, which builds capacity for veteran serving organizations by evaluating the effectiveness of their programs in helping to prevent suicide among veterans, and to pilot an evaluation toolkit with recipients.
- Through *Building Capacity for Tribal Suicide Prevention Through Program Implementation and Evaluation* (CDC-RFA-OT18-1803) CDC funds two tribes/tribal organizations to adapt, implement, and evaluate suicide prevention programs in two AI/AN tribal populations.
- To help enhance the completeness of nonfatal data, the *National Electronic Injury Surveillance System-All Injury Program (NEISS-AIP) Self-Harm Module* will be supported through an Inter-Agency Agreement with the U.S. Consumer Product Safety Commission to collect additional information on patient characteristics and event circumstances for all non-fatal self-directed violence cases captured in NEISS-AIP. This will set the stage for potential expansion to more hospitals in 2023.

- Related to nonfatal data, the three-year Emergency Department Surveillance of Nonfatal Suicide Related Outcomes (ED SNSRO) program is currently in its second year and funds 10 states to enhance local surveillance of nonfatal suicide related outcomes. CDC provides technical assistance to states to validate their syndrome definitions, and to host workgroups focused on data to action, syndrome definition validation, and innovative methods of surveillance. CDC is applying innovative data science methods to explore the use of novel datasets to provide a more complete and real-time understanding of both fatal suicide trends and nonfatal suicidal behavior.
- Related to fatality data, CDC is working in collaboration with DoD gain a more complete understanding of circumstances associated with active duty military suicide through data linkage between CDC's National Violent Death Reporting System (NVDRS) and DoD's Suicide Event Report (DoDSER). This information will be used to inform suicide prevention efforts for active duty military and veterans.

Tribal Use of Prescription Drug Monitoring Programs (PDMP)

CDC is directed to work with the Indian Health Service to ensure Federally-operated and tribally-operated healthcare facilities benefit from the CDC's PDMP efforts. (Page 38, P.L.116-260 Division H JES)

Action taken or to be taken

CDC is providing approximately \$10 million to 15 of the 25 eligible entities that were awarded under Strategy 1 of the Tribal Public Health Capacity-Building and Quality Improvement Umbrella Cooperative Agreement (CDC-RFA-OT18-1803) to better address opioid overdose in AI/AN people and communities. All recipient tribes and tribal organizations are required to provide strategic planning and to select at least one from three areas to support PDMPs:

1. Epidemiologic surveillance and public health data infrastructure to address issues of data quality and timeliness,
2. Implementation of evidence-based health systems interventions that are appropriate to tribal communities,
3. Innovative community-based strategies (such as public health-public safety collaborations) that build upon strengths inherent to tribal organizations.

CDC is also providing approximately \$2 million in supplemental funds to 11 Tribal Epidemiology Centers (TECs) from the Building Public Health Infrastructure in Tribal Communities to Accelerate Disease Prevention and Health Promotion in Indian Country program (CDC-RFA-DP17-1704). These TECs will receive additional support specifically to prevent opioid overdose. This collaboration will strengthen epidemiologic surveillance and public health data infrastructure such as PDMPs, with the aim of addressing issues of data quality, completeness, accuracy, and timeliness.

CDC has implemented 16 quality improvement opioid measures that align with the CDC Guideline for Prescribing Opioids for Chronic Pain. Of the 11 health systems supported since March 2018, two pilots took place at IHS clinics in Oregon and New Mexico; they have received regular engagement to provide implementation guidance, technical assistance, clinical expertise, shared learning experiences, and relevant resources. CDC and the Office of National Coordinator for Health Information Technology (ONC) have also completed an integration of the Utah Navajo Health System Electronic Health Records (EHRs) through RxCheck. The purpose of this CDC-ONC project is to advance and scale drug monitoring integration within health IT systems.

Children in Adversity

The agreement directs CDC to collaborate with the U.S. Agency for International Development (USAID), the President's Emergency Plan for AIDS Relief (PEPFAR), and the Department of Labor to ensure monitoring and

evaluation is aligned for all of the objectives of the U.S. Government Action Plan. (Page 41, P.L.116-260 Division H JES)

Action taken or to be taken

CDC appreciates the support of the Committee for the United States Government Action Plan on Children in Adversity. CDC supports this Action Plan, along with USAID, PEPFAR, and DOL, through the violence prevention programs Violence Against Children and Together for Girls. The annual Public Law 109–95 Report to Congress responding to this request has been [posted online](#).

Global Health Security

The agreement includes an increase of \$20,000,000 for CDC to lead global health security activities to prevent, detect, and respond to infectious disease threats and outbreaks around the globe. The agreement directs the CDC Director to update CDC's comprehensive health security strategy and report to the Committees within 180 days of enactment of this Act. In developing the strategy, CDC shall consult with the heads of other relevant Federal agencies who are responsible for complementary global health security activities. (Page 41, P.L.116-260 Division H JES)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Public Health Emergency Preparedness Cooperative Agreement

The agreement includes an increase and requests a state distribution table in the fiscal year 2022 Congressional Justification, which should also include how funding is being allocated to local health departments and how States are determining these allocations. (Page 42-43, P.L.116-260 Division H JES)

Action taken or to be taken

CDC plans to submit a Report to Congress.

Replacement of the Lake Lynn Experimental Mine and Laboratory

CDC recently purchased a replacement for the Lake Lynn mine research facility. The agreement requests CDC provide an update within 180 days of enactment of this Act with a timeline for the eventual opening of a new facility and any additional funding that may be needed to complete work on such facility. (Page 43, P.L.116-260 Division H JES)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Congressional Justification

The agreement directs CDC to include updates on the following research, projects, and programs in their fiscal year 2022 Congressional Justification: incidence, prevalence, epidemiology, and health outcomes of polycystic kidney disease; Mississippi Delta Health Collaborative; information to educate patients and providers on clinical practice guideline recommendations for patients with Von Willebrand Disease; and Zika surveillance. (Page 44, P.L.116-260 Division H JES)

Action taken or to be taken

Chronic Kidney Disease

CDC's Chronic Kidney Disease (CKD) Initiative provides comprehensive public health strategies for promoting kidney health. These strategies seek to prevent and control risk factors for CKD, to raise awareness, to promote early diagnosis and treatment, and to improve outcomes for people living with CKD. Current activities of the [CKD Initiative](#) include surveillance and epidemiology and health outcomes and economic studies in partnership with other government agencies, universities, and national organizations. In collaboration with the University of California at San Francisco and the University of Michigan, CDC implemented the [CKD Surveillance System](#). This interactive and comprehensive collection of CKD-related data in the United States is crucial for tracking national trends in the number of cases, risk factors, health consequences, and care practices that affect CKD prevention and management, and for monitoring progress and informing national Healthy People objectives.

Polycystic kidney disease (PKD) is a genetic disorder and a type of CKD that may lead to kidney failure. In 2018, PKD [was listed](#) as the primary cause in approximately three percent of new cases of kidney failure in the United States. CDC's CKD Surveillance System references limited data on PKD as a special population. However, CDC is currently not able to conduct ongoing surveillance of PKD because of small sample sizes in national health surveys and administrative/claims data sources. The bulk of the PKD research portfolio is at the National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Disease (NIH/NIDDK). CDC will discuss with our CKD surveillance grantees the availability and feasibility of any potential data sources for surveillance of PKD.

Mississippi Delta Health Collaborative

The Mississippi State Department of Health Delta Health Collaborative Program implements population-wide and priority population approaches to prevent and control high blood pressure and reduce health disparities associated with high blood pressure among adults in the 18-county Mississippi Delta Region. The Mississippi Delta Region is a high burden, underserved, rural area. With CDC funding, the state has partnered with community health workers, pharmacists, community organizations, local leaders and businesses, and faith-based groups to improve access to heart disease and stroke screening and care, identify and address medication challenges, and reduce the burden of hypertension and heart disease in rural and vulnerable populations.

By bringing health screenings to unconventional places, like churches and barbershops, The Collaborative reaches at-risk citizens who might not have access to regular medical care. Peer-to-peer screenings and outreach have led to increased medical referrals and intervention.

The Mississippi Delta Health Collaborative, like other public health programs, is facing tremendous challenges due to COVID-19. These challenges mean programs like the MS Delta Health Collaborative are unlikely to achieve their typical strong results during FY 2021.

Von Willebrand Disease

People with von Willebrand disease (VWD) can experience excessive and longer-than-usual bleeding, known as bleeding episodes, because their blood lacks the proteins needed for bleeding to stop. Although VWD is the most common bleeding disorder in women and girls, men and women of all races and ethnicities can be born with VWD.

In FY 2020, the Better You Know (BYK) campaign, developed in partnership with the National Hemophilia Foundation, launched a suite of tools to raise awareness of bleeding disorders among women and girls who may experience symptoms but have not yet been diagnosed. Resources have been developed in English and Spanish to help increase knowledge and awareness of bleeding disorders in women and girls and to provide information for healthcare providers. Women can take a free web-based risk assessment, learn about their risk, and use

tools to take steps towards seeking care, receiving testing, accurate diagnosis, and treatment plan from their healthcare provider.

Obstetricians, gynecologists, and general healthcare providers may be the first to recognize signs of a bleeding disorder in women and girls. [The BYK campaign provides brochures](#) on methods used to assess bleeding symptoms, determine risk for a bleeding disorder, and, for patients at risk, how to coordinate care with a doctor who specializes in blood disorders for diagnostic testing. There are also free accredited webinar trainings for providers to increase their knowledge about bleeding disorders.

ZIKA Surveillance

In 2020, CDC continued to work with state and local health departments to provide Zika testing validation panels to ensure testing capacity in state health department laboratories and provide confirmatory testing at CDC. Through this testing, CDC was able to test and rule out Zika virus infections in 80 pregnant woman who were considered probable cases by states. These negative results were able to reassure pregnant woman, their clinicians, and local public health officials and ensure proper clinical care. Throughout the year, [ArboNET data](#) were used to track reported Zika virus disease cases or asymptomatic infections in blood donors or pregnant women and was shared with stakeholders bi-weekly. No confirmed local Zika virus disease cases reported in United States during 2020.

In 2021, CDC will continue to distribute validation panels to ensure that arboviral disease testing, including Zika virus disease testing, can be performed in state public health laboratories, if they have the capacity to do so while responding to the COVID-19 pandemic. CDC will also continue to offer enhanced diagnostic testing and assistance with surveillance to ensure that timely testing and surveillance are available to detect and control vector-borne diseases throughout the United States.

In addition, in FY 2020 and FY 2021, CDC continued implementation of the [Surveillance for Emerging Threats to Mothers and Babies Network \(SET-NET\) program](#) which builds on the achievements of the U.S. Zika Pregnancy and Infant Registry. CDC is supporting the real-time, evidence-based, collection and assessment of linked pregnancy and infant outcomes data to determine the impact of serious threats from exposures in pregnancy, including Zika virus, syphilis, and hepatitis C. Tracking the occurrence of birth defects, other infant problems, and developmental disabilities as children age, will help CDC address critical threats, develop appropriate prevention strategies, and inform clinical guidance and optimal care to meet the needs of children and families.

CDC continues to deepen the understanding of and address the effects of Zika virus infection during pregnancy by:

- **Tracking Zika’s impact on babies in the United States:** Found [an increase](#) in the number of babies born with birth defects in areas with widespread local Zika virus transmission.
- **Informing pediatric health care services:** [Identified](#) that nearly 1 in 7 babies born to pregnant women with Zika virus infection during pregnancy had health problems, including problems not apparent at birth.
- **Updating health care provider guidance:** [Revised guidance](#) on the evaluation and care of infants from pregnancies with lab evidence of possible Zika virus infection. as well as [updating guidance](#) for preconception counseling and prevention of sexual transmission of Zika virus for men with possible Zika virus exposure.
- **Supporting underserved populations impacted by Zika:** After the 2017 Hurricanes Irma and Maria, CDC worked with the U.S. Virgin Islands Department of Health and other partners to organize a [health brigade](#) to bring needed pediatric specialty care and screenings to an underserved population impacted by Zika. This [health brigade model](#) could be replicated to ensure clinical recommendations are met in populations that may have unmet medical needs due to the complexity of the conditions and/or rural location.

- Working with international partners:** Scientists from Colombia's Instituto Nacional de Salud and CDC reviewed data on pregnant women in Colombia who had Zika infection during the widespread Zika virus outbreak in 2015-2016. Birth defects were common during this outbreak and among women with Zika infection in their first trimester. These [findings](#) highlight the importance of monitoring both Zika virus exposure and birth defects, which help us see the full impact of Zika virus infection during pregnancy. In a separate [collaborative analysis](#) of birth defects surveillance data from Colombia's enhanced surveillance system between 2015-2017, nearly 60% of the cases of microcephaly and/or central nervous system defects were potentially attributable to Zika virus infection.

Tribal Advisory Committee

The agreement directs the Director, in consultation with the TAC, to develop written guidelines for each CDC center, institute, and office on best practices around delivery of Tribal technical assistance and consideration of unique Tribal public health needs. The goal of such guidelines should be the integration of Tribal communities and population needs into CDC programs. The Director shall report on the status of development of these written guidelines in the fiscal year 2022 Congressional Justification. (Page 44, P.L.116-260 Division H JES)

Action taken or to be taken

CDC and the Agency for Toxic Substances and Disease Registry are committed to working with federally recognized tribal nations on a government-to-government basis. CDC and ATSDR strongly support and respect tribal sovereignty and self-governance for tribal nations in the United States. CDC recognizes the importance of integrating Tribal communities and population needs into CDC programs. Working with tribal partners including the CDC/ATSDR Tribal Advisory Committee (TAC), CDC's Center for State, Tribal, Local, and Territorial Support is coordinating development of the guidelines. CDC and the TAC discussed the activity during the February 3, 2021 TAC meeting, and the TAC voted to create a subcommittee of some TAC members to work regularly with CDC on the guideline activity. CDC and the TAC subcommittee met on March 31, 2021 to discuss next steps on process and approach, which will include obtaining input from a broad range of tribal representatives.

SIGNIFICANT ITEMS IN FY 2021 APPROPRIATIONS REPORT - HOUSE

Significant items for inclusion in the FY 2022 Centers for Disease Control and Prevention Congressional Justification from House Report 116-450.

Cost Estimates

The Committee looks forward to reviewing the fiscal year 2022 report on estimated funding needs of the Section 317 Immunization Program and urges that the report be updated and submitted not later than February 1, 2021. The updated report should include an estimate of optimum State and local operations funding, as well as a discussion of the role of the 317 Program, as coverage for vaccination under public and private resources continues to evolve. The fiscal year 2022 report should include specific information on the estimated cost to fully address evidence-based public health strategies that could be funded through CDC to improve coverage for human papillomavirus and influenza. (Page 62, House Report 116-450)

Action taken or to be taken

CDC has submitted a Report to Congress as requested.

Section 317 Immunization Program

The Committee views the 317 Immunization Program, including the Vaccines for Children Program, as a pivotal part of the U.S. public health infrastructure. The Committee is aware that public health experts expect SARS-CoV-2, the novel coronavirus that causes COVID-19, to continue to circulate in the U.S. during the fall 2020 and winter 2020-2021. While the timing of availability of a vaccine to prevent COVID-19 remains unclear, one strategy to decrease stress on the healthcare system is to increase vaccination coverage with seasonal influenza vaccine beginning in early fall 2020. Although the impact of increased coverage varies season-to-season, higher influenza vaccine coverage would be expected to result in decreases in doctor visits and hospitalizations during the influenza season, making more capacity available for persons with COVID-19. In order to reduce health care utilization for influenza and protect populations vulnerable to severe COVID-19 outcomes, CDC should launch an enhanced influenza campaign in time for the 2020-21 season, including messages targeting those at higher risk for COVID-19. In addition, in order to prepare for a national SARS-CoV-2 vaccination program, the Committee urges CDC to initiate planning and expansion of vaccination infrastructure in coordination with State, local, territorial, and tribal public health authorities. (Page 63, House Report 116-450)

Action taken or to be taken

CDC works each year to increase the number of people who receive a flu vaccine and eliminate barriers to vaccination, as well as working with manufacturers to maximize flu vaccine availability. As part of these efforts, CDC worked with influenza vaccine manufacturers to maximize influenza vaccine supply. As of January 26, 2021, 193.8 million doses of flu vaccine had been distributed, the highest number of doses distributed in the U.S. in a single flu season. CDC also purchased an additional 2 million pediatric doses and 9.3 million doses of adult influenza vaccine and optimized the use of federally procured vaccine through promotion of influenza vaccination within the Vaccine for Children (VFC) program, and expanding partnerships to increase vaccine utilization by Community Health Centers.

To support state and local immunization programs to increase flu vaccination, CDC provided \$140 million in FY 2020 to immunization awardees to support expanded influenza outreach activities. CDC also developed and provided resources for immunization programs and partners, including disseminating guidance for safe immunization services, encouraging vaccination where it is most convenient to maximize vaccine uptake, and developing and disseminating guidance for planning vaccination clinics held at satellite, temporary or off-site locations

To address disparities, CDC collaborated with the Million Hearts Campaign to address sociodemographic disparities in influenza vaccines among U.S. adults with atherosclerotic cardiovascular disease. This year's flu communication campaign included an Ad Council campaign supported by CDC and the American Medical Association and tailored messages to African American and Hispanic audiences.

Community-Based Organizations

The Committee recognizes that community-based organizations play a crucial role because of their capacity to reach communities highly impacted by HIV. The Committee directs CDC to ensure that Ending the HIV Epidemic advisory groups or committees reflect their local epidemic by including community-based organizations and people living with HIV. The Committee further requests CDC's progress of engaging such communities be included in the fiscal year 2022 Congressional Budget Justification. (Page 64, House Report 116-450)

Action taken or to be taken

In FY 2019, CDC [funded](#) 32 state and local health departments representing 57 jurisdictions to develop EHE jurisdictional plans that included community engagement and working with CBOs as part of the planning process (as noted in the [PS19-1906 Component B](#) community engagement guidance). These health departments were required to document engagement, including who they engaged. When draft jurisdictional plans were submitted in December 2019, all of the 32 state and local health departments, either had engaged or were planning to engage CBOs in their planning process. In FY 2020, CDC funded these health departments to begin implementing EHE jurisdictional plans. All awardees must allocate at least 25% of their total funds to local EHE jurisdiction(s) to support planning and implementation of EHE activities by community organizations. Health departments are encouraged to establish new funding relationships with community organizations that have traditionally not received funding and that have experience working with communities most affected by HIV, including experience addressing the social determinants that influence these communities.

Emphasis on Comprehensive Service

In recent fiscal years, the Committee has provided historic resources to combat the opioid epidemic, with a particular focus on expanding access to treatment, and treating and preventing comorbidities that can be associated with injection drug use. At the Committee's urging, the Department has rightfully prioritized efforts that increase access to treatment and recovery services. For all programs not focused exclusively on prevention of substance abuse, the Committee directs the Department to continue its emphasis on evidence-based medical interventions, and to ensure that all such interventions, including programs that focus on harm reduction, provide referral to treatment and recovery services. (Page 65, House Report 116-450)

Action taken or to be taken

CDC works to prevent infectious diseases associated with injection drug use. CDC continues to promote evidence-based medical interventions while ensuring referral to treatment and recovery services is available. Syringe services programs present unique opportunities to reach people who inject drugs, an often marginalized and highly stigmatized population, often without a usual source of care. In FY 2020, CDC developed and disseminated a technical package on syringe services programs. The technical package provides information on how to most effectively plan, design, implement, and sustain syringe services programs. It also includes a broad framework for new and existing syringe services programs to ensure needs-based service delivery and linkage to services for participants to support their health and wellness. CDC will continue to work to ensure that syringe services programs can act as a bridge to ensure that people with substance use disorder are provided referral to treatment, recovery services and traditional healthcare.

HIV Initiative

The Committee includes an increase of \$10,000,000. This investment builds on an increase of \$140,000,000 included in fiscal year 2020, bringing the two-year investment in CDC's role in the Eliminating HIV/AIDS Initiative to a total of \$290,000,000. CDC will focus on areas of the country that constitute the majority of new HIV infections annually to diagnose people with HIV as early as possible after infection, link people to effective treatment and prevention strategies, and respond rapidly to clusters and outbreaks of new HIV infections. By working with State and local health departments, along with community-based organizations, there will be intensive testing and rapid referral to care and treatment. The initiative will develop and deploy innovative data management solutions, increase access to Pre-Exposure Prophylaxis (PrEP), and improve detection and response to HIV clusters. The Committee recognizes that sexually transmitted diseases are associated with increased risk of HIV acquisition. The Committee urges CDC to include an expansion of sexually transmitted infections programs and initiatives designed to increase HIV testing; PrEP and condom availability at STD clinics; increase the number of Disease Intervention Specialists to prevent the spread of STIs and HIV; and implement HIV and STI education and prevention programs in schools. (Page 65, House Report 116-450)

Action taken or to be taken

In FY 2020, through its *Integrated HIV Programs for Health Departments to Support Ending the HIV Epidemic in the United States Notice of Funding Opportunity (PS20-2010)*, CDC awarded funding to seven EHE-eligible state and local health departments to implement strategies and activities focused on scaling up HIV prevention services in STD clinics. These funded local health departments and their STD specialty clinics are: increasing the number and percentage of patients diagnosed with an acute STD and may need an HIV test; increasing uptake of PrEP/nPEP for patients with acute STDs who are more susceptible to acquiring HIV; establishing cost effective models for delivering PrEP/nPEP services; and optimizing linkage to, retention in, and re-engagement in HIV medical care and prevention services for patients with HIV, including patients who are not currently receiving care. CDC provides funding, expert guidance, and technical assistance to education agencies for the implementation of HIV and other STI prevention programs in schools.

Viral Hepatitis and Opioids

The Committee is concerned that as a result of the opioid crisis, infections of viral hepatitis have spiked at alarming rates in many parts of the nation. The Committee urges CDC to develop a plan for a national chronic hepatitis B (HBV) and hepatitis C (HCV) surveillance infrastructure and increase grant funding to States for viral hepatitis surveillance, testing, linkage to care, and hepatitis A (HAV) and HBV vaccination among all populations at risk for infection. The Committee also urges CDC to incorporate infectious disease prevention, testing, and linkage to care into the agency's response to the opioid crisis. Given that HBV and HCV are the most common drivers of liver cancer in the U.S., the incidence and mortality of which are increasing more rapidly than any other cancers, the Committee urges that CDC raise awareness of and encourage awardees to address this link. The Committee requests that CDC submit a status report of the above efforts in the fiscal year 2022 Congressional Justification.

Action taken or to be taken

CDC remains committed to mitigating the infectious disease impacts involving injection drug use and increasing testing and linkage to care for persons who inject drugs. In FY 2021, CDC launched an integrated viral hepatitis surveillance and prevention program that supports core viral hepatitis outbreak response, surveillance, and prevention activities nationwide. Approximately 10 of the jurisdictions funded through this program will conduct special projects to prevent, diagnose, and treat infectious complications of high-risk drug use through the development and implementation of a "service bundle" in settings serving people who inject drugs. CDC's national testing campaign will also continue to implement targeted messages to people who inject drugs and healthcare providers that serve people with risk factors for hepatitis C, including injection drug use.

Beginning in FY 2019, leveraging funds from the Infectious Diseases and Opioid Epidemic program, CDC extended support to nine jurisdictions (California, Louisiana, Michigan, Oregon, Rhode Island, South Carolina, West Virginia, New York City, and Washington, D.C.) to promote hepatitis B and C testing and linkage to care in settings serving people who inject drugs. Through this program, more than 17,251 people were tested for HCV infection between September 2019 and August 2020, and, of the 3,842 testing HCV-antibody positive, 52% were confirmed with hepatitis C infection. Additionally, more than 179 people were tested for HBV infection between September 2019 through March 2020 and 92% of those confirmed with HBV infection were linked to care and treatment.

Viral Hepatitis Vaccination

The Committee is concerned that despite the availability of an effective hepatitis B (HBV) vaccine, less than 25 percent of adults age 19 and older are vaccinated. According to CDC's most recent survey of Vaccination Coverage Among Adults, this poor vaccination rate remains flat and has not improved in several years. The Committee recognizes that CDC is evaluating new universal HBV vaccination recommendations including a comprehensive plan to increase adult HBV vaccinations. CDC is further urged to promote awareness about the importance of HBV vaccination among medical and health professionals, communities at high risk, and the general public and to improve collaboration and coordination across CDC to achieve this goal. Furthermore, the Committee recognizes that viral hepatitis can cause serious health consequences for people living with HIV and that 25 percent of people living with HIV are also living with hepatitis C virus (HCV), and about 10 percent of people living with HIV are also living with hepatitis B virus (HBV). The Committee directs CDC to submit a report on the plan to increase the rate of HBV adult vaccination to the levels necessary to eliminate new infections of HBV in the U.S. in the fiscal year 2022 Congressional Justification. (Page 66-67, House Report 116-450)

Action taken or to be taken

By working with health care providers, hepatitis B partners, and the Advisory Committee on Immunization practices (ACIP), CDC plans to accelerate progress in increasing viral hepatitis vaccination coverage among adults, particularly high-risk adults, across the United States. CDC has worked to enhance health care provider education and encourage recommendation of needed vaccines. HHS, CDC, and the National Adult and Influenza Immunization Summit have worked closely in promoting the National Vaccine Advisory Committee's Standards for Adult Immunization Practice to health care providers, including pharmacists and physicians. CDC's Adult Immunization program also provided multi-year funding to three medical professional societies to educate providers on adult immunization and expand adult vaccination coverage for recommended vaccines, including the hepatitis B vaccine.

The two-dose hepatitis B vaccine (HEPLISAV B) was added as an available option for hepatitis B vaccination on the CDC Adult Immunization Schedule following ACIP's review of the evidence supporting the safety and efficacy of this vaccine. Recently, an ACIP work group has been established to examine the evidence base for a universal approach to vaccination of adults against hepatitis B.

CDC provides data and analyses to jurisdictions to develop or improve existing hepatitis B vaccination delivery plans. CDC is also increasing awareness among health care providers and the public of the importance of hepatitis B vaccination to ensure vaccines are provided to the populations at greatest risk for infection. Under CDC's new integrated viral hepatitis surveillance and prevention program, CDC will require funded jurisdictions to provide CDC with clear plans for coordinating and collaborating with immunization programs to meet jurisdictional hepatitis A and hepatitis B adult vaccination goals. Furthermore, this new program encourages the establishment of hepatitis B vaccine delivery teams within state and local jurisdictions to aid in vaccine delivery; development of written hepatitis A and B vaccination protocols; training; and compiling, summarizing, and disseminating evaluation data.

Antibiotic Resistance

The Committee includes an increase of \$5,000,000. The Committee recognizes the importance of effectively combatting antibiotic resistant bacteria as part of CDC’s broader efforts to mitigate the clinical and public health impacts of the COVID–19 outbreak. Furthermore, the Committee recognizes the importance of the addressing the problem of antibiotic-resistant bacteria through a “One Health” approach and by tracking resistance through local, regional, national, and global surveillance. The Committee encourages CDC to competitively award research activities that address aspects of antibiotic resistance related to “One Health,” including global surveillance and research and development for new tools to counter antibiotic resistance among entities, including public academic medical centers, veterinary schools with agriculture extension services, and public health departments whose proposals are in line with CDC’s strategy for addressing antibiotic resistant bacteria. (Page 68, House Report 116-450)

Action taken or to be taken

In October 2020, CDC joined with other U.S. government agencies to release a new National Action Plan for Combating Antibiotic-resistant Bacteria (CARB), 2020 – 2025. The plan presents coordinated, strategic actions that the U.S. government will take across One Health to improve the health and well-being of all Americans by combatting antibiotic resistance. This Plan is based on the U.S. government’s 2014 National Strategy for Combating Antibiotic-resistant Bacteria and builds on the first National Action Plan (2016 – 2020) released in 2015, by expanding successful activities that are stopping the spread of antibiotic resistance, such as improving the use of antibiotics and increasing infection prevention and control. Over the next 5 years, CDC will continue to accelerate efforts to stop the spread of antibiotic-resistant pathogens and to address key gaps to addressing AR that were identified in CDC’s 2019 AR Threats Report. CDC has and will continue leading the public health response to antibiotic resistance across the One Health spectrum—healthcare, the community, and the environment—through innovation and expanding on proven success. Through the new National Action Plan for Combating Antibiotic-Resistant Bacteria, 2020-2025, CDC seeks to:

- Decrease healthcare-associated antibiotic-resistant infections 20% and community-acquired antibiotic-resistant infections 10% by 2025.
- Expand CDC’s AR Lab Network internationally and work with global partners and low-and-middle-income countries to prevent human and animal infections.
- Double CDC’s investments in state and local health departments and support infection prevention and control of AR infections.
- Collect antibiotic use data from 100% of U.S. acute care and 50% of critical access hospitals to help improve antibiotic use and drive action to reduce outpatient antibiotic prescribing.
- Build a vaccine data platform to accelerate getting new vaccines to market and to evaluate their efficacy post-licensure.
- Clarify pathways for new pharmaceutical preventatives by defining appropriate clinical trial designs, including end points.
- Coordinate with Federal partners to establish new capacities for collecting AR data from the environment, including water and soil.
- Develop a Center of Excellence for Whole Genome Sequencing related to healthcare-associated pathogens and other AR threats.

Myalgic Encephalomyelitis / Chronic Fatigue Syndrome

The Committee commends CDC for its recent progress in myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS) medical education and in the Multisite Clinical Assessment of ME/CFS (MCAM) study, including the expansion of this study into pediatric research. The Committee is concerned that there is a lack of information about ME/CFS onset and requests an update in the fiscal year 2022 Congressional Justification. (Page 69, House Report 116-450)

Action taken or to be taken

CDC's ME/CFS program conducts and supports innovative research to integrate the clinical presentation and management of patients. The program provides technical support for educational initiatives that help healthcare providers diagnose and treat the illness. CDC leverages its expertise in health statistics to track the prevalence of ME/CFS through large national systems such as the Behavioral Risk Factor Surveillance System and the National Health Interview Survey. CDC also capitalizes on its collaborations on syndromic surveillance to gather data on risk factors, description of patients with new onset of ME/CFS, and management strategies that favor improvement through the CDC Emerging Infections Program.

In FY 2022, in order to provide more information about EM/CFS, CDC will continue to conduct surveillance and clinical studies to better understand the prevalence, onset, and course of ME/CFS. As part of the COVID response, CDC is also examining the relationship of fatiguing illnesses following COVID ("Long COVID") to ME/CFS. Studies are planned with the Emerging Infections Program and academic partners to gather prospective data on patients as they present with new onset ME/CFS-like illness. CDC will also continue to work with public health and medical organizations to improve clinical care of persons living with ME/CFS and to address critical shortage of healthcare providers. In coordination with federal partners in the Interagency ME/CFS Working Group, CDC will work to align each agency's initiatives to improve access to care and to coordinate research on the causes of and treatments for ME/CFS.

Mycotic Diseases

The Committee is concerned about invasive mycological or fungal infections. These infections are a major cause of morbidity and mortality worldwide, leading to approximately 500,000 deaths annually. The overall disease burden is over 100 million people worldwide, and in the US, approximately one million new infections occur annually in a variety of immunocompetent and immunocompromised individuals. The Committee provides an additional \$200,000 in Emerging Infectious Diseases for mycotic diseases, including, but not limited to, surveillance and prevention, building capacity in the State and local health departments, cooperative agreements, education of the public and healthcare providers, and laboratory support. The Committee requests an update in the fiscal year 2022 Congressional Justification on how this funding is being utilized. (Page 69, House Report 116-450)

Action taken or to be taken

With the \$2 million increase for mycotic diseases, CDC plans to support state and local health departments, the Mycoses Study Group, and other relevant institutions to address the threat of invasive fungal infections. Activities will include building laboratory capacity for species identification, susceptibility testing, and diagnostics evaluation; establishing surveillance to understand emerging trends, risk factors, and geographic spread; and promoting awareness/educational campaigns so patients can receive appropriate diagnosis and treatment faster to save lives.

National One Health Framework

As the coronavirus pandemic has proven, zoonotic diseases pose a significant threat and the Committee recognizes the need to improve the nation's response capacity. The Committee directs CDC to develop a national one health framework to combat the threat of zoonotic diseases and advance emergency

preparedness. The Committee directs the Secretary of Health and Human Services and the Secretary of Agriculture in coordination with the Environmental Protection Agency, the Department of Homeland Security, the Department of the Interior, the Department of Defense, the Department of Commerce, and other departments and agencies as appropriate, to develop, publish, and shall report to the Committee no later than 180 days after enactment of this Act on a national One Health Framework for coordinated Federal Activities. (Page 69, House Report 116-450)

Action taken or to be taken

CDC, the U.S. Department of Agriculture (USDA), and the U.S. Department of the Interior (DOI) organized a One Health Zoonotic Disease Prioritization (OHZDP) workshop to further joint efforts to address zoonotic disease challenges in the United States. The workshop was held December 5-7, 2017. One of the next steps recommended by the workshop participants was to develop a national One Health framework to guide U.S. Government One Health collaborations.

In response to that recommendation, the CDC One Health Office coordinated a core group of representatives from CDC, USDA, and DOI to begin drafting a national One Health framework that describes a common vision and goals, and defines the roles and responsibilities of federal partners in the One Health space to prevent, detect, and respond to shared health threats at the human-animal-environment interface during both the steady state and emergency response. This framework will reference established priorities and activities as well as address any identified gaps in collaboration. The draft framework will be shared with key federal partners actively working in the human, animal, and environmental health sectors for feedback. The One Health coordination committee mechanism will serve as a platform for the coordination of the draft document, leadership engagement, and publication.

One Health Federal Interagency Coordination Committee

The Committee directs CDC to work with the Department of Agriculture and Department of Interior to develop a One Health coordination mechanism at the federal level. This mechanism will be used to strengthen One Health collaboration related to prevention, detection, control, and response for the prioritized zoonotic diseases and related One Health work across the federal government. HHS shall report to the Committee no later than 180 days after enactment of this Act on the National One Health Framework and the One Health Coordination Mechanism regarding the steps being taken to implement the recommendations detailed in the U.S. One Health Zoonotic Disease Prioritization Workshop summary, entitled Prioritizing Zoonotic Diseases for Multisectoral, One Health Collaboration in the U.S. (Page 69-70, House Report 116-450)

Action taken or to be taken

CDC works closely with the Department of the Interior (DOI) and the U.S. Department of Agriculture (USDA) and other federal partners on domestic One Health issues. Since 2017, CDC, USDA and DOI have been working together to develop a common vision and common goals to implement a One Health approach for addressing shared health threats at the human-animal-environment interface. We plan to socialize the jointly developed goals and objectives with partners in 2021. As part of these goals and objectives, these federal partners developed a concept for a formal One Health coordination mechanism.

CDC convened and chaired the One Health Federal Interagency Network (OH-FIN), which brings together representatives from federal agencies and departments on a regular basis to share updates on implementing a One Health approach and identifying opportunities for collaboration in the US and globally. Building on this initial work and as a step towards implementation rather than simply information sharing, in 2020 CDC created and leads the One Health Federal Interagency COVID-19 Coordination Group (OH-FICC) which brings together over 100 representatives from 20 key federal Agencies representing multiple Departments (HHS, USDA, DOI, DOD, DHS, DOC, and others) to exchange information, updates, and to collaborate to address One Health

aspects of COVID-19 relevant to human health, animal health, and the environment. The OH-FICC includes 5 subgroups with cross-agency representation to address COVID-19 and the connection of people with companion animals, production animals like mink, zoo animals and wildlife, animal testing and diagnostics, and environmental health. CDC will build on lessons learned from the OH-FIN and the OH-FICC when working with interagency partners to develop a broader coordination mechanism for Federal One Health coordination.

Sepsis

The Committee is concerned that sepsis continues to be a leading public health threat that is responsible for the death of approximately 270,000 adults and 7,000 children annually in U.S. The Committee encourages CDC to increase coordination within the Department of Health and Human Services, with the Department of Education, and with the Department of Labor to increase the dissemination of and the utilization of sepsis educational materials, including the Get Ahead of Sepsis Campaign. Coordination should focus on increasing utilization of the campaign by school nurses, company nurses and health care providers. The Committee also encourages enhanced outreach to health departments, academic partners, healthcare providers and systems, professional and quality improvement organizations, and patient representatives to increase utilization of sepsis educational materials, including the Get Ahead of Sepsis Campaign. In addition, the Committee encourages CDC to enhance outreach to national, state, and local hospital associations to increase usage of the Get Ahead of Sepsis Campaign and the CDC Sepsis Prevention Toolkit by medical staff. The Committee directs CDC to report to the House and Senate Committees on Appropriations on coordination efforts, utilization rates, and the results of enhanced outreach efforts 180 days after the enactment of this Act. (Page 70, House Report 116-450)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Arthritis

The Committee recognizes the serious issue of arthritis in communities across the country, which affects one in four Americans and is the number one cause of disability in the U.S. The Committee commends the ongoing work of the CDC Arthritis Program to provide existing investments in data and intervention and prevention research. The Committee urges CDC to support robust investment to expand the number of state-based arthritis programs, provide access to proven arthritis self-management and physical activity programs, and improve data collection and surveillance. The Committee requests a report on the resources necessary to fully scale the Arthritis Program and identify gaps in arthritis public health research and data collection in the fiscal year 2022 Congressional Justification. (Page 72, House Report 116-450)

Action taken or to be taken

CDC's Arthritis Program outlines key research needs and gaps for osteoarthritis in [A National Public Health Agenda for Osteoarthritis, 2020](#). The program is also engaged in addressing the effectiveness of programs originally developed for in-person, group-based delivery to alternative, remote delivery formats that adhere with COVID physical distancing recommendations. Additionally, the program has a Special Interest Project (SIP) being competed and a CSTLTS project currently underway addressing issues related to gaps in arthritis public health research and data collection.

Chronic Obstructive Pulmonary Disease

The Committee urges CDC to do more to address Chronic Obstructive Pulmonary Disease (COPD), the nation's fourth leading cause of death, including fully engaging with the timely implementation of the COPD National Action Plan, developed by the National Heart, Lung, Blood Institute in coordination with CDC, such as fully integrating COPD surveillance, research, prevention, and management strategies into existing chronic disease efforts. The Committee requests a written report on the updates to the COPD Action Plan no later than 180 days after enactment of this Act. (Page 72-73, House Report 116-450)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Chronic Pain

The Committee previously encouraged CDC to analyze data collected from the chronic pain questions included in the 2017 National Health Interview Survey and to clarify the incidence and prevalence of various pain syndromes differentiated by patient age, comorbidities, socioeconomic status, race and gender. The Committee also encouraged CDC to collect data on direct and indirect costs of pain treatment and the effectiveness of evidence based treatment approaches (S. Rept. 115–150—Departments of Labor, Health and Human Services, and Education, and Related Agencies Appropriation Bill, 2018). In light of the issuance of the HHS Pain Management Best Practices Task Force report identifying gaps in access to care, and the importance of utilizing interventional procedures such as nerve blocks, injections, and surgical devices; behavioral health approaches such as cognitive behavioral therapy; and complementary and integrative health therapies such as massage therapy and acupuncture to address pain, the Committee again encourages CDC to collect this needed data and publish it annually. Furthermore, the Committee directs CDC to provide an update on pain statistics in the fiscal year 2022 Congressional Justification. (Page 73, House Report 116-450)

Action taken or to be taken

CDC is examining chronic pain and high impact chronic pain prevalence with questions included in the National Health Interview Survey (NHIS)^a—age, comorbidities, and sociodemographic information are addressed. CDC has published limited data from NHIS on chronic pain by race/ethnicity, age, gender and urbanicity and found that in 2019, 20.4% of adults had chronic pain and 7.4% of adults had chronic pain that frequently limited life or work activities (referred to as high impact chronic pain) in the past 3 months. Chronic pain and high-impact chronic pain both increased with age and were highest among adults aged 65 and over. Non-Hispanic white adults (23.6%) were more likely to have chronic pain compared with non-Hispanic black (19.3%), Hispanic (13.0%), and non-Hispanic Asian (6.8%) adults. And finally, the percentage of adults with chronic pain and high-impact chronic pain increased as place of residence became more rural. Collection of additional data elements would require adding relevant questions on national and other surveys and is not contemplated at this time.

E-Cigarette or Vaping Product Use – Associated Lung Injury

The Committee remains concerned about the impacts of utilizing e-cigarettes or vaping products that lead to hospitalizations and deaths across the country. The Committee requests an update of CDC’s findings relating to this topic in the fiscal year 2022 Congressional Justification. (Page 73, House Report 116-450)

Action taken or to be taken

Beginning in summer 2019, CDC, FDA, and state health authorities began investigating a national outbreak of e-cigarette, or vaping, product use-associated lung injury (EVALI), and CDC activated its Emergency Operations Center (EOC) from September 2019 – January 2020. Vitamin E acetate, an additive in some THC-containing e-cigarette, or vaping, products, was subsequently found to be strongly linked to the EVALI outbreak. However, evidence is not sufficient to rule out the contribution of other chemicals of concern. Due to the considerable decline in newly reported EVALI cases and deaths, as well as the identification of the primary cause of EVALI, CDC transitioned its coordination of activities related to the EVALI outbreak from a centralized EOC back to individual CDC programs, primarily the Office of Smoking and Health (OSH). As part of those activities, CDC continues to work alongside federal and state partners to prevent a reoccurrence of EVALI. For example, CDC continues to monitor EVALI cases and conduct case-finding activities, integrating this surveillance work into its National Syndromic Surveillance System, which rapidly collects EVALI-related symptom data from emergency department visits throughout the U.S. CDC also continues to respond to inquiries from health care providers, state health departments, and the general public about EVALI. The latest information is available at the [CDC EVALI webpage](#).

Interstitial Cystitis

The Committee requests an update on education, outreach, and public awareness activities in the fiscal year 2022 Congressional Justification. (Page 74, House Report 116-450)

Action taken or to be taken

During the current funding period ending in 2021, the current interstitial cystitis (IC) grantee continues to generate important information regarding IC for supporting the evidence base for improving patient and provider outreach, education, and awareness. The grantee works with a national IC organization to increase awareness of IC through paid social media, websites, newsletters, and awareness walks. A new 3-year funding opportunity announcement in FY 2021 continues the work of previous funding periods to further determine demographic of and health care experiences and outcomes of people with IC in order to expand evidence-based activities around outreach, education and awareness. The new funding announcement also requires the successful grantee to continue to work with national partners to extend outreach, education, and awareness.

Safe Motherhood and Infant Health

The Committee includes an increase of \$10,000,000 and recognizes CDC's ongoing efforts to address the pressing public health issue of rising maternal mortality rate in the U.S. Black, American Indian and Alaska Native women are two to three times more likely to die from pregnancy related causes than white women, and this disparity increases with age. The Committee encourages CDC to work with States to establish and continue Maternal Mortality Review Committees, and to provide assistance for all Committees to collect, analyze, and report data collected through the Maternal Mortality Review Information Application (MMRIA) System. CDC is encouraged to analyze the MMRIA data from all States, to the extent possible, issue a report of findings, and provide follow up technical assistance to support States to develop and implement strategies to improve data collection and analysis and to reduce maternal mortality. The Committee requests a report in the fiscal year 2022 Congressional Justification, analyzing the necessary costs and resources needed to enable State or regional databases to institute a policy nation-wide of monitoring death records 365 days after a birth record is issued for an individual's newborn. Furthermore, the Committee commends CDC for funding State based Perinatal Quality Collaboratives (PQCs) that focus on improving maternal and neonatal outcomes using known prevention strategies such as reducing early elective deliveries. CDC is encouraged to continue support for PQCs particularly due to the rise in maternal mortality rates and neonatal abstinence syndrome (NAS) as a result of the opioid crisis. To maintain the notable work of the PREEMIE CDC-funded state-based PQCs around the country, the Committee urges CDC to expand their work in States disproportionately affected by the opioid crisis and focus efforts in the top five States affected by opioid misuse. (Page 76, House Report 116-450)

Action taken or to be taken

CDC plans to submit a report as requested.

Social Determinants of Health Pilot Program

The Committee recognizes the role of public health in working across sectors on social determinants of health. The Committee includes \$10,000,000 for CDC to establish a Social Determinants of Health pilot program to award competitive grants to State, local, Territorial, or Tribal jurisdictions to support the development of Social Determinants of Health Accelerator Plans. Such plans should include a description of the health and social outcome objectives of the Social Determinants Accelerator Plan; identify target populations that would benefit from implementation of the plan; and identify non-governmental public health organizations and community organizations that would participate in the development of the plan. Grantees may use a portion of grant funding to convene government entities and stakeholders and to engage qualified research experts in developing Social Determinants Accelerator Plans. The Committee directs CDC to submit a report within 120 days of enactment of this Act on how such grants will be administered. (Page 76-77, House Report 116-450)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Tobacco and COVID-19

The Committee is aware that smoking and use of e-cigarettes harm the lungs, and that researchers and public health officials are increasingly concerned that users of such products may be at increased risk for poorer health outcomes related to COVID-19. The Committee urges CDC to improve the collection of data on whether individuals who have tested positive for the novel coronavirus are current smokers, former smokers, or e-cigarette users, and to assess whether smokers and e-cigarette users are at higher risk for developing severe illness and death from COVID-19 than non-users. The Committee urges CDC to begin tracking this information within 90 days of enactment and to make such data and assessments publicly available. (Page 77, House Report 116-450)

Action taken or to be taken

The available scientific evidence shows that adults who are current or former cigarette smokers are at increased risk of severe illness from COVID-19. However, it is presently unknown whether cigarette smoking is associated with the risk of SARS-CoV-2 infection. E-cigarette use can expose the lungs to toxic chemicals, but whether those exposures increase the risk of COVID-19 or the severity of COVID-19 outcomes is also not known.

As part of CDC's Emergency Operation Center (EOC) Response to COVID-19, data on tobacco product use among persons with COVID-19 is collected through two primary mechanisms: COVID-19 Case Report Forms and COVID-NET. The [COVID-19 Case Report Form](#) asks whether a patient is a current or former smoker, but does not ask about other tobacco product use, including e-cigarettes. The COVID-19-Associated Hospitalization Surveillance Network (COVID-NET), which conducts population-based surveillance for laboratory-confirmed COVID-19-associated hospitalizations among persons of all ages in 99 counties in 14 states, can include information on both cigarette smoking and e-cigarette use. However, COVID-NET data come from electronic health records (EHR), and the data in COVID-NET is only as robust as the information entered into EHRs. CDC continues to analyze data from the Case Report Forms and COVID-NET; however, these analyses have been limited by small sample size and missing data. CDC is committed to continue including and reporting the data available from EHRs.

Outside of the CDC's EOC, the Office on Smoking and Health (OSH) plans to conduct rapid response surveillance, including through web-panels and retail sales data, to monitor tobacco product use during the COVID-19 pandemic.

Infant and Maternal Health Surveillance

The Committee directs, within 90 days of enactment of this Act, an update on adaptations that have been made to the Surveillance for Emerging Threats to Mothers and Babies Program, Pregnancy Risk Assessment Monitoring System, and other infant and maternal health surveillance efforts to evaluate the risks for and effects of COVID-19 on infants and pregnant and lactating individuals. (Page 79, House Report 116-450)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Pregnancy-Status COVID-19 Data Collection and Reporting

The Committee directs, within 90 days of enactment of this Act, a report be submitted describing the specific steps taken to ensure that pregnancy status be included in COVID-19 data collection, documentation, and reporting from health care providers to public health agencies, particularly at the time of the initial or first report. (Page 79, House Report 116-450)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Sickle Cell Disease

The Committee urges the Division of Blood Disorders plan to establish a population-based surveillance system to collect and analyze longitudinal data on people living in the U.S. with sickle cell disease and established a separate budget account for sickle cell disease. (Page 79, House Report 116-450)

Action taken or to be taken

CDC's Division of Blood Disorders began work to establish a population-based surveillance system, the Sickle Cell Data Collection (SCDC) program, in California and Georgia upon receiving pharmaceutical and philanthropic gifts through CDC Foundation to collect and analyze longitudinal data on people living with SCD. Since 2015, California and Georgia have been actively collecting data and conducting SCDC activities, covering about 13% of the estimated SCD population in the US.

In 2019, with funding from CDC and HHS, nine states were funded to build capacity and prepare to conduct surveillance activities. That 1-year capacity building project supported by donor and discretionary funds laid the foundation for CDC to subsequently expand the SCDC program from two states to nine states in FY 2020, representing about 32% of the US sickle cell population. In FY 2021, CDC received \$2,000,000 for SCD data collection work. The appropriated funds will support the nine existing SCDC states.

SCDC provides comprehensive, longitudinal, and dynamic population-based surveillance for SCD, linking multiple data sources to provide a more complete picture of SCD in the US and inform policy and healthcare changes affecting the SCD population. SCDC's architecture makes it possible to add new data sources, further enabling the collection and analysis of data on the impact of new treatments, therapies, and cures. [Funded states](#) have already begun benefiting from findings such as patient demographics, population maps, emergency department and hospital admissions, and insurance information.

With newly appropriated funds, SCDC can expand and develop, thereby increasing CDC's knowledge and ability to implement a nationally representative state-based program that aligns with Public Law 115—327 enabling people with SCD to receive adequate care and treatment. CDC also aims to monitor, study, and publish long-term trends in diagnosis of SCD, related complications, treatment, and healthcare access. CDC recognizes the life-long, debilitating, and costly impact of SCD and is committed to protecting people with SCD by preventing and reducing complications of SCD through public health surveillance, research, education, and awareness.

Childhood Lead Poisoning

The Committee includes an increase of \$2,000,000 to strengthen blood lead surveillance by supporting state and local program to improve blood lead screening test rates, identify high-risk populations, and ensure effective follow-up for children with elevated blood lead levels. The Committee encourages CDC to require that States receiving funding for lead prevention report all blood tests in a standardized format through the Nationally Notifiable Noninfectious Diseases and Conditions reporting system. The Committee directs the Lead Exposure and Prevention Advisory Committee to produce a report about the prevalence and impact of leaded paint manufacturing plants. The report should identify the leaded paint manufacturers, public health hazards posed by the plants (including but not limited to the environmental hazards), and how the leaded paint is being circulated. The report shall be included in the fiscal year 2022 Congressional Justification (Page 82, House Report 116-450)

Action taken or to be taken

The increase in funds for the Childhood Lead Poisoning Prevention Program (CLPPP) will be used to supplement cooperative agreements with an estimated 55 total state and local programs implementing primary and secondary prevention strategies for childhood lead poisoning, including:

- Ensuring blood lead testing and reporting, and enhancing blood lead surveillance;
- Improving linkages to recommended services for children exposed to lead; and
- Developing strategies for targeted, population-based interventions.

CDC will continue to support and disseminate the Healthy Housing and Lead Poisoning Surveillance System (HHLPSS) software, which currently supports importation of standardized laboratory data, and will continue to build on its previous work to develop guidance for reporting requirements and specifications. The Childhood Lead Poisoning Prevention Program is also working to improve rapid analysis and dissemination of information. These efforts will improve prompt identification of areas with high lead levels.

CDC will work with the Lead Exposure and Prevention Advisory Committee to produce a report about the prevalence and impact of leaded paint manufacturing plants.

Adverse Childhood Experiences

The Committee encourages CDC to prioritize the collection and reporting of data on adverse childhood experiences (ACEs), including exposure to violence, neglect, and living in a home with mental health or substance use problems, and to use these data to support the implementation of comprehensive ACEs prevention strategies at the State, territorial, tribal and local levels. The Committee also encourages CDC to report on the prevalence of adverse childhood experiences across geography, race and ethnicity, disability, and socioeconomic status. (Page 83, House Report 116-450)

Action taken or to be taken

CDC is supporting several initiatives to build state and tribal surveillance infrastructure and enhance ACEs prevention. These initiatives will also allow CDC to enhance reporting on the prevalence of ACEs across geography, race and ethnicity, disability, and socioeconomic status. In FY 2020, CDC released a new Notice of Funding Opportunity, Preventing ACEs Data to Action (PACE:D2A), to build state-level surveillance infrastructures to collect ACEs data and implement prevention strategies based on the best available evidence. In FY 2020, CDC funded 4 states to implement PACE:D2A and will fund an additional 2 states in FY 2021. CDC is supporting non-governmental organizations to provide technical assistance to these recipients to ensure their success in this endeavor. Also, in FY 2020, CDC provided funds for up to 3 years to tribal organizations to build their capacity for ACEs surveillance and prevention and will continue this funding in FY 2021. CDC also provided funds to states, local school districts, and a tribe to collect state-level and tribal ACEs data from youth through their local administration of CDC’s Youth Risk Behavior Survey (YRBS).

In addition to these surveillance and programmatic activities, in FY 2021, CDC will conduct applied research to expand understanding of the type and nature of ACEs, resiliency, and positive childhood experiences to inform ACEs prevention and mitigate harmful effects.

Opioid Abuse and Overdose Prevention

The Committee commends CDC for its leadership on combating opioid drug overdoses. The Committee encourages the Director to continue to implement these activities based on population-adjusted burden of disease criteria, including mortality data (age adjusted rate), as significant criteria when distributing funds for overdose prevention activities. The Committee recognizes that the substance misuse epidemic is shifting, with an increase in overdoses resulting from stimulants and other substances. The Committee urges for CDC to

monitor, prevent, and reduce harms associated with drug use, misuse, and overdose, including opioids, stimulants, cannabis, and other emerging risks. The Committee appreciates efforts by CDC to ensure that funding for opioid abuse and overdose prevention reaches local communities to advance local understanding of the opioid overdose epidemic and to scale-up prevention and response activities as intended by Congress. (Page 84-85, House Report 116-450)

Action taken or to be taken

Please refer to the Conference significant item on *Opioid Overdose Prevention and Surveillance*.

Public Health Approach to Violence

The Committee recognizes all forms of violence as a health crisis that is in desperate need of increased data collection and funding to support effective prevention and intervention efforts grounded in public health approaches. There is increasing evidence of the profound negative effects of violence and the exposure to violence on child development, the long-term mental and physical health of affected populations, and the economic development of communities, especially communities of color. In order to support calls for greater investment in these approaches, the Committee directs CDC within 180 days of enactment of this Act to submit a comprehensive report detailing the scope and intersection of all forms of violence in the U.S., the cost of violence, and identify areas where more data and intervention are needed. (Page 85, House Report 116-450)

Action taken or to be taken

CDC plans to submit a Report to Congress as requested.

Total Worker Health

The Committee includes an increase of \$1,500,000 for the Total Worker Health (TWH) program, which supports centers of excellence that advance the overall safety, health, and well-being of U.S. workers. The Committee notes that millions of American workers and businesses are confronting the mental health effects of the COVID-19 pandemic; these include isolation, economic insecurity, concerns about physical health and the challenges of working remotely and reintegrating back into the workplace. In addition, mental health conditions represent a leading cause of worker disability, rising medical costs and lost productivity. Therefore, the Committee directs NIOSH to use the additional funding to create a new TWH center of excellence for workplace mental health. This center will support companies across all sizes and industries in the study and implementation of best practices to improve workplace mental health and worker well-being nationwide. NIOSH should award the center to an academic research institution in partnership with a national nonprofit organization. Priority should be given to applicants with expertise in mental illness from the worker/workplace perspective, a strong track record of data collection and analysis, experience in sustaining a positive culture/climate in U.S. workplaces, and evaluating workplace policies and practices with employers of varying sizes. The center should also have the capacity to translate data and science into interventions, disseminate best practices across the country and collect national data on employers and the mental health and well-being of their workers. (Page 86, House Report 116-450)

Action taken or to be taken

NIOSH intends to award a Total Worker Health® Center of Excellence for Workplace Mental Health in FY 2021 using a closely related funding opportunity announcement (FOA) for TWH Centers of Excellence.

Public Health Preparedness Cooperative Agreements

The Committee includes an increase of \$25,000,000 to enhance support to State and local health departments in developing and maintaining capable, flexible, and adaptable public health systems to rapidly respond in an emergency. The Committee encourages CDC to apply a risk-based approach using population or other risks when allocating funds to PHEP in order to reflect the potential magnitude of illness and death that may be anticipated. The Committee recognizes the challenges of ensuring adequate response in remote geographical

areas, such as the Pacific territories, during potential outbreaks and encourages CDC improve laboratory capacity in such areas. Furthermore, the Committee directs the incorporation of Limited English Proficient (LEP) Individuals in emergency planning. The Committee requests a report on the steps taken to ensure that recipients are conducting outreach to LEP communities in the fiscal year 2022 Congressional Justification. (Page 90, House Report 116-450)

Action taken or to be taken

CDC has taken several steps to ensure that PHEP recipients are incorporating Limited English Proficient (LEP) individuals in emergency planning and conducting outreach to LEP communities. The 2019-2024 PHEP notice of funding opportunity requires PHEP recipients to Identify populations at risk of being disproportionately impacted by incidents or events, coordinate with community-based organizations that have established relationships with diverse at-risk populations, and integrate preferred communication messages and strategies for LEP communities and others with access and functional needs into jurisdictional preparedness and response plans. PHEP recipients must document these activities, including LEP outreach, in their annual work plans. Recipients use the standards outlined in CDC’s [Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health](#) as a framework or structure for their emergency planning. Each capability standard identifies priority resource elements that are relevant to both routine public health activities and essential public health services. This helps support an “everyday use” model in which applying the capability standards to improve day-to-day effectiveness builds a stronger foundation from which a jurisdictional public health agency can surge when an emergency incident occurs.

In FY 2020, PHEP recipients incorporated LEP outreach into their planned activities and outputs, primarily in relation to Capability 1: Community Preparedness, Capability 2: Community Recovery, and Capability 4: Emergency Public Information and Warning. Following are specific examples of PHEP activities to incorporate LEP individuals in emergency planning.

- Recipients translated multiple preparedness and health communication products, such as “Preparedness Buddy” brochures, public service announcements (PSAs), and broadcasts, into multiple languages to ensure all residents can better prepare for emergencies. For instance, Hawaii translated PSAs and radio broadcasts in 11 different languages to disseminate preparedness information to non-English speaking residents during hurricane season.
- Multiple recipients also included LEP outreach for those who communicate through American Sign Language, those who are visually impaired, and those considered low literacy.
- In Los Angeles County, a 211-call center and web services were set up to reach special populations including, but not limited to, non-English speakers and those with access and functional needs.
- Several recipients regularly reviewed data regarding LEP populations to promote equity in preparedness and response. For example, Vermont reviewed cultural barriers of LEP groups to better support preparedness and response planning, and Tennessee used HHS emPOWER data to compile a social vulnerability index for all access and functional needs populations, including persons with limited English proficiency, to ensure health care coalitions and emergency response coordinators are planning adequately.
- Utah conducted a functional exercise to test its outreach to refugees and other LEP individuals and to help assess jurisdictional capability.