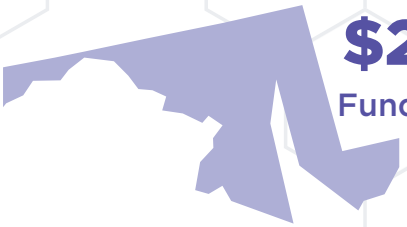
AR Solutions *In Action*

CDC's Investments to Combat Antimicrobial Resistance Threats

FISCAL YEAR 2022

MARYLAND



$24,337,548

Funding for AR Activities
Fiscal Year 2022

HIGHLIGHTS

- One local CDC-supported fellow
- Two CDC Prevention Epicenters
- Regional Lab for the AR Lab Network (Mid-Atlantic)
- One of ten sites for the Emerging Infections Program

FUNDING TO STATE HEALTH DEPARTMENTS

$2,455,102

AR LABORATORY NETWORK REGIONAL LAB: Regional labs boost state and local testing capacity and technology to detect, support response to, and prevent AR threats across the nation—and inform innovations to detect AR.
In 2022, Maryland maintained critical AR testing capacity and engaged with CDC and the AR Lab Network to implement new testing despite the ongoing burden of the COVID-19 pandemic and associated staffing challenges. Maryland continues to be a strong partner in the AR Lab Network ensuring rapid identification of and response to urgent AR threats.

$819,085

RAPID DETECTION & RESPONSE: State, territory, and local public health partners fight AR in health care, the community, and food.
CDC-funded HAI/AR Programs form a network of health departments that detect, prevent, respond to, and contain HAI/AR threats and promote appropriate use of antibiotics and antifungals. CDC's AR Lab Network provides nationwide lab capacity to rapidly detect AR and inform local prevention and response activities to stop the spread of resistant germs and protect people.

$131,257

FOOD SAFETY projects protect communities by rapidly identifying antimicrobial-resistant foodborne bacteria to stop and solve outbreaks and improve prevention.
Maryland uses whole genome sequencing to track and monitor local outbreaks of *Listeria*, *Salmonella*, *Campylobacter*, and *Escherichia coli* and uploads sequence data into PulseNet for nationwide monitoring of outbreaks and trends. In fiscal year 2022, Maryland continued monitoring these isolates for resistance genes. When outbreaks are detected, local CDC-supported epidemiologists investigate the cases to stop the spread.

$97,593

FUNGAL DISEASE projects improve our ability to track resistance to antifungals and stop it from spreading.
With funding for fungal disease surveillance, Maryland increased their ability to identify fungal diseases, monitor for new and emerging resistance, and implement strategies to prevent its spread in high-risk areas. Improving detection for fungal diseases, like *Candida auris*, means patients receive appropriate treatment while reducing unnecessary antibiotic use.

This data represents CDC's largest funding categories for AR. It shows extramural funding that supports AR activities from multiple funding lines. Some work received full or partial funding from COVID-19 supplemental appropriations, such as the American Rescue Plan Act or the CARES Act.

AR: antimicrobial resistance **COVID-19:** coronavirus disease 2019
HAI: healthcare-associated infection **IPC:** infection prevention and control
NHSN: National Healthcare Safety Network

CDC provides critical support in the U.S. and abroad to protect people from antimicrobial resistance.

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MARYLAND AR Investments (cont.)

$59,454

GONORRHEA RAPID DETECTION & RESPONSE works with state and local epidemiology and laboratory partners to test for and quickly respond to resistant gonorrhea to stop its spread in high-risk communities. Only one treatment option remains for gonorrhea and resistance continues to grow.

The Gonococcal Isolate Surveillance Project (GISP) informs national treatment guidelines for gonorrhea by monitoring how well antibiotics work on laboratory samples collected from sentinel sexually transmitted disease (STD) clinics, which often are the first to detect the threat. Select STD clinics also enhance surveillance by collecting additional gonococcal isolates from women and from extragenital sites. The STD Surveillance Network (SSuN) monitors adherence to national gonorrhea treatment guidelines for patients diagnosed and reported with gonorrhea from all provider settings across funded jurisdictions.

$1,129,789

EMERGING INFECTIONS PROGRAM (EIP) sites improve public health by translating population-based surveillance and research activities into informed policy and public health practice.

The Maryland EIP performs population-based surveillance for candidemia, *Clostridioides difficile*, invasive *Staphylococcus aureus*, and resistant gram-negative bacteria; conducts HAI and antimicrobial use prevalence surveys; and is completing a project on SARS-CoV-2 infections in healthcare personnel. As part of Maryland's EIP FoodNet activities, they collect case information associated with antimicrobial-resistant infections and work with laboratories to prioritize sequencing of cases with exposure and antimicrobial use information.
Learn more: www.cdc.gov/hai/eip

FUNDING TO UNIVERSITIES & HEALTHCARE PARTNERS

$599,976

JOHNS HOPKINS UNIVERSITY: CDC Prevention Epicenter

The Prevention Epicenters Program is a collaborative network of public health and experts in relevant fields of HAI and AR that responds to research priorities to protect patients. The network conducts research to support the translation of innovative IPC strategies for preventing HAIs, AR, and other adverse events in all healthcare settings.
Learn more: www.cdc.gov/hai/epicenters

$582,740

UNIVERSITY OF MARYLAND - BALTIMORE: CDC Prevention Epicenter

The Prevention Epicenters Program is a collaborative network of public health and experts in relevant fields of HAI and AR that responds to research priorities to protect patients. The network conducts research to support the translation of innovative IPC strategies for preventing HAIs, AR, and other adverse events in all healthcare settings.
Learn more: www.cdc.gov/hai/epicenters/index.html

$8,040,729

ABT ASSOCIATES, INC.: Discovering & Implementing What Works

Investigators are establishing a nursing home network with pre-positioned study staff and readily available lab capacity to perform data collection without impacting clinical care to rapidly characterize infectious diseases, particularly emerging pathogens and SARS-CoV-2 variants of concern, to inform IPC strategies in nursing homes. Funding will support network sites in Georgia, Maryland, Michigan, Ohio, Oregon, Pennsylvania, Rhode Island, and Wisconsin.
Learn more: www.cdc.gov/hai/research/safehealthcare.html

$7,000

JOHNS HOPKINS UNIVERSITY: Discovering & Implementing What Works

Investigators are applying modeling in public health by building applied modeling capacity and network development for public health institutions to increase a skilled mathematical modeling workforce. This includes assessing the impact of disparities and health equity on infectious diseases and incorporating these identified factors in infectious disease forecasts and transmission models. Learn more: www.cdc.gov/hai/research/safehealthcare.html

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MARYLAND AR Investments (cont.)

$89,587

UNIVERSITY OF MARYLAND: Innovative Prevention & Tracking

Investigators are conducting sentinel surveillance of organisms that can cause HAIs.
Learn more: www.cdc.gov/hai/research/safehealthcare.html

$725,717

UNIVERSITY OF MARYLAND: Discovering & Implementing What Works

Investigators are designing and implementing a scalable and sustainable multicenter study to evaluate the effectiveness of an electronic health record-based clinical decision support intervention to optimize antimicrobial use for adult patients with respiratory viral infections, including COVID-19.
Learn more: www.cdc.gov/hai/research/safehealthcare.html

$5,418,334

ASSOCIATION OF PUBLIC HEALTH LABORATORIES: Innovative Prevention & Tracking

The Association of Public Health Laboratories supports CDC and the AR Lab Network by helping to build a strong AR workforce in public health, developing and amplifying messaging about AR Lab Network resources to relevant clinical partners, and developing and maintaining information technology solutions for reporting of data from the AR Lab Network to submitting facilities, jurisdictional public health laboratories, prevention programs, and CDC. This funding supports activities not only in Maryland but across the U.S.

$243,179

PROMPT DIAGNOSTICS LLC: Discovering & Implementing What Works

Investigators are developing a simple, fast, and highly portable diagnostic test for *Candida auris*. This diagnostic test could be performed at the point of care, even in resource-limited settings and in settings where a laboratory is not available.

$600,000

ASSOCIATION OF PUBLIC HEALTH LABORATORIES: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts work across Australia, Bangladesh, China, Hong Kong, India, Japan, Malaysia, New Zealand, Philippines, Republic of Korea, Taiwan, Thailand, and Vietnam to increase enteric disease data and facilitate data sharing between countries. The information collected helps the scientific community understand the spread of enteric bacterial disease and AR in these countries. This work is part of CDC's Global AR Lab & Response Network efforts.

$1,400,000

ASSOCIATION OF PUBLIC HEALTH LABORATORIES: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts support CDC and global partners to develop information technology solutions for collection, tracking, and reporting of data within the Global AR Lab & Response Network, within the Global Action in Healthcare Network, and to CDC. This work is part of CDC's Global AR Lab & Response Network efforts.

$500,000

GLOBAL SCIENTIFIC SOLUTIONS FOR HEALTH: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts are reinforcing surveillance systems for antimicrobial-resistant *Neisseria meningitidis* in Burkina Faso and Togo and creating tailored work plans for each country. The data and findings from this project will guide public health decision making and planning for how to track and respond to the threat of meningitis outbreaks in partner countries and the broader region. This work is part of CDC's Global AR Lab & Response Network efforts.

$150,000

ASSOCIATION OF PUBLIC HEALTH LABORATORIES: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts enhance IPC best practices, implement quality improvement in IPC and AR prevention, expand national surveillance for HAIs and AR, and improve laboratory detection for AR in Vietnam.

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MARYLAND AR Investments (cont.)

$1,288,006

JHPIEGO: Global Expertise & Capacity Enhancements

CDC's global work to combat AR helps prevent the importation of AR threats into the United States. Experts describe SARS-CoV-2 infection in healthcare workers in Ethiopia after the COVID-19 vaccine rollout and enhance IPC policy, training, and capacity at provincial, district, and facility levels in Pakistan. Experts are evaluating the impact of the COVID-19 pandemic on antibiotic use and AR in Argentina, Brazil, and Chile, and evaluating immunochromatography for direct colonization screening in Brazil.

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