

2020 FORCES OF CHANGE

The COVID-19 Edition



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01 Introduction

Since 2008, the National Association of County and City Health Officials (NACCHO) periodically surveys local health departments (LHDs) to assess changes in their capacity driven by public health trends. Initially, this survey measured the impact of the Great Recession on LHD budgets, staffing, and programs. In 2014, NACCHO expanded the survey to address broader social, political, and economic impacts on local public health.

The Forces of Change survey helps to identify infrastructure challenges among LHDs and opportunities to strengthen local public health capacity.

The 2020 Forces of Change survey focused on the effects to LHD infrastructure caused by the global pandemic of coronavirus disease (COVID-19). LHDs played a critical role in protecting their communities' safety and well-being during COVID-19. They monitored outbreaks, coordinated resources with healthcare partners, and shared information with the public.

However, decades of chronic under-resourcing hinders the ability of LHDs to quickly mobilize in a time of crisis. LHDs shift priorities to ensure they are equipped to play a key role in pandemic response. Yet, LHDs are unable to prepare as robustly as is necessary, and essential services that protect the public's health become secondary to the more critical frontline response efforts.

The data presented in this report provide one of the only mid-pandemic pictures of the circumstances surrounding local public health response. The data highlight the capacity, preparedness, and activities of LHDs in the first year of the pandemic.

Methods

Study population

There are approximately 2,800 agencies or units that meet the definition of an LHD, for purposes of surveying. Some states have a public health system structure that includes both regional and local offices of the state health agency. In those states, the state health agency chooses to respond to the survey at either the regional or local level, but not at both levels.

NACCHO used a database of LHDs based on the 2019 National Profile of Local Health Departments (Profile) study to identify LHDs for inclusion in the study population. For the 2020 Forces of Change survey, a total of 2,392 LHDs were included in the study population. Rhode Island was excluded from the study because the state has no sub-state public health units; Florida was also excluded from the study.

Sampling

All LHDs in the study population received a common core set of questions from October 2020 to March 2021. In addition to the core questionnaire sent to the population of LHDs, a stratified random sample of 905 LHDs were invited to complete a module questionnaire with strata defined by the size of the population served and state.

A total of 583 LHDs completed the survey for a response rate of 24%. A total of 237 LHDs completed the module questionnaire for a response rate of 26%.

Survey Weight and National Estimates

Statistics were computed using post-stratification survey weights to adjust for oversampling and non-responses; separate weights were computed for core questions and the module questionnaire. National estimates were generated using these survey weights based on size of population served. Some detail may be lost in the figures due to rounding.

Limitations

All data are self-reported by LHD staff and are not independently verified. LHDs may have provided incomplete, imperfect, or inconsistent information for various reasons. In addition, non-response bias could impact the results presented in this report, and any comparisons presented are not tested for statistical significance.

A detailed description of survey methodology can be found on [NACCHO's Forces of Change webpage](#).

Subgroup Analysis

Throughout this report, data are presented based on different subgroup analyses.

Size of Population Served

Statistics are compared across the size of the population served by the LHDs. Small LHDs serve populations of less than 50,000 people. Medium LHDs serve populations of 50,000 to 499,999 people. Large LHDs serve populations of 500,000 people or more.

Type of Governance

Data are also presented by type of governance, which refers to the LHD's relationship to their state agency. Locally governed LHDs are agencies of local government. State-governed LHDs are local or regional units of the state health agency. LHDs that are governed by both state and local authorities are referred to as shared governance.

United States Census Region

A final subgroup by which data are presented is [US Census region](#). LHDs are designated as being in the Northeast, South, Midwest, or West, based on the state in which they are located, per the U.S. Census Bureau classifications.

02 Economic Surveillance

A robust workforce and steady funding are two critical infrastructure components that enable LHDs to fulfill their missions. Although local public health agencies were recently beginning to rebound from the Great Recession, LHDs experienced an overall decline in staffing and financial capacity over the past decade.

During the pandemic, inadequate funding and limited staffing capacity challenged LHDs' response capabilities. The local public health system's already limited capacity was further strained as priorities rapidly shifted and resources fluctuated.

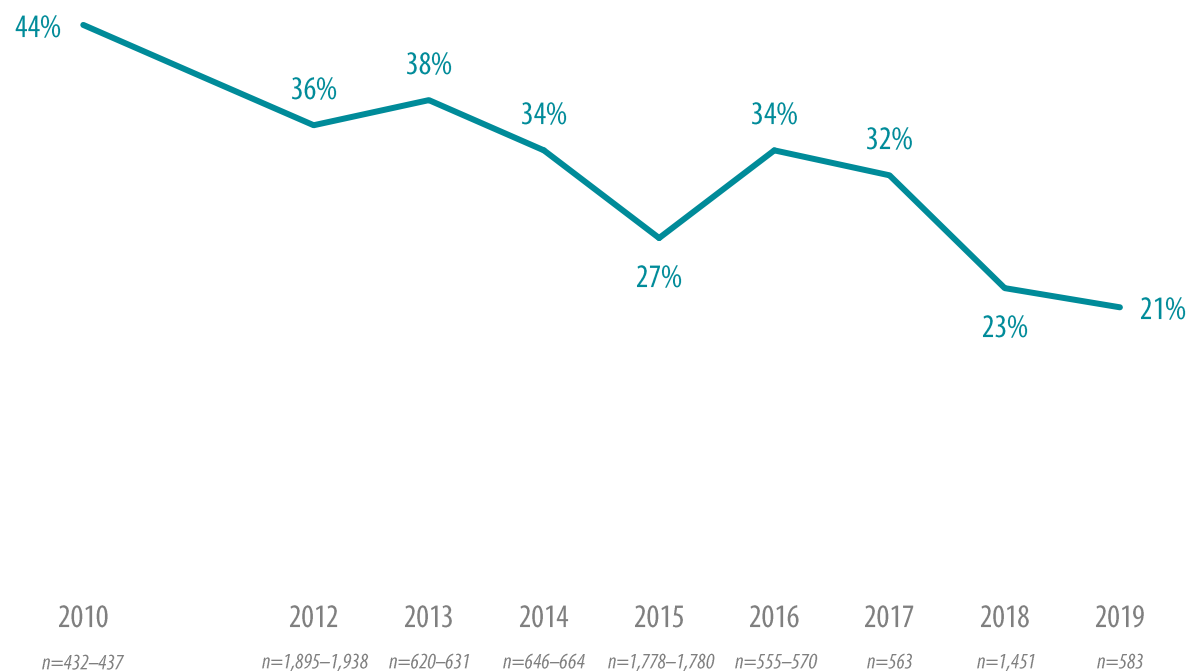
LHDs work diligently to protect the health of their communities from emerging threats. An infusion of sufficient resources that can be rapidly mobilized in the face of an emergency is vital to a timely response and community resilience.

What's in this section?

- Annual job losses and gains
- Changes in LHD budgets over time
- LHD employees hired during the pandemic
- Staff reassigned to address COVID-19
- LHD expenditures during the pandemic
- Supplemental or emergency funding

Job losses among LHDs due to layoffs and/or attrition, over time

Percent of LHDs reporting at least one job loss

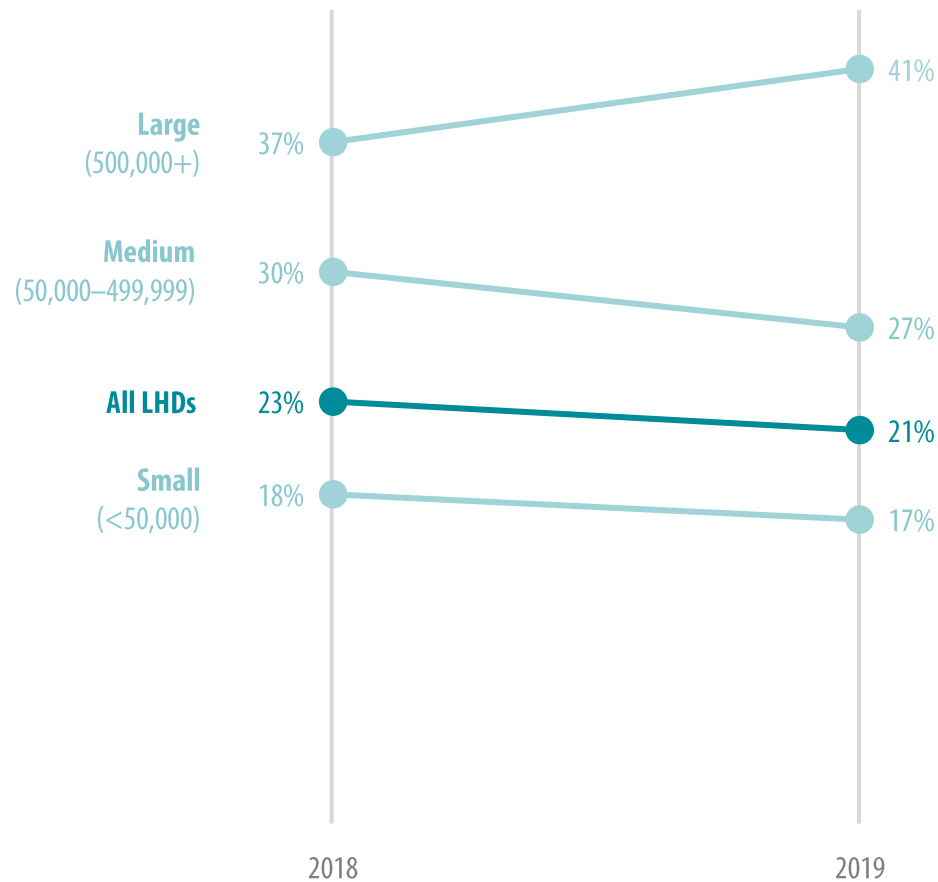


Overall, the percentage of LHDs reporting at least one job lost due to layoffs and/or attrition in the previous calendar year has decreased over the past decade. While nearly half of LHDs reported losing at least one job in 2010, only one-fifth reported job losses during the 2019 calendar year. However, this is relatively stable compared to the previous year when 23% of LHDs reported at least one job loss.

Note: Ns vary because questions regarding layoffs and attrition were asked in separate questions with different numbers of observations across survey years.

Job losses in the previous year due to layoffs and/or attrition, over time and by population size served

Percent of LHDs reporting at least one job lost

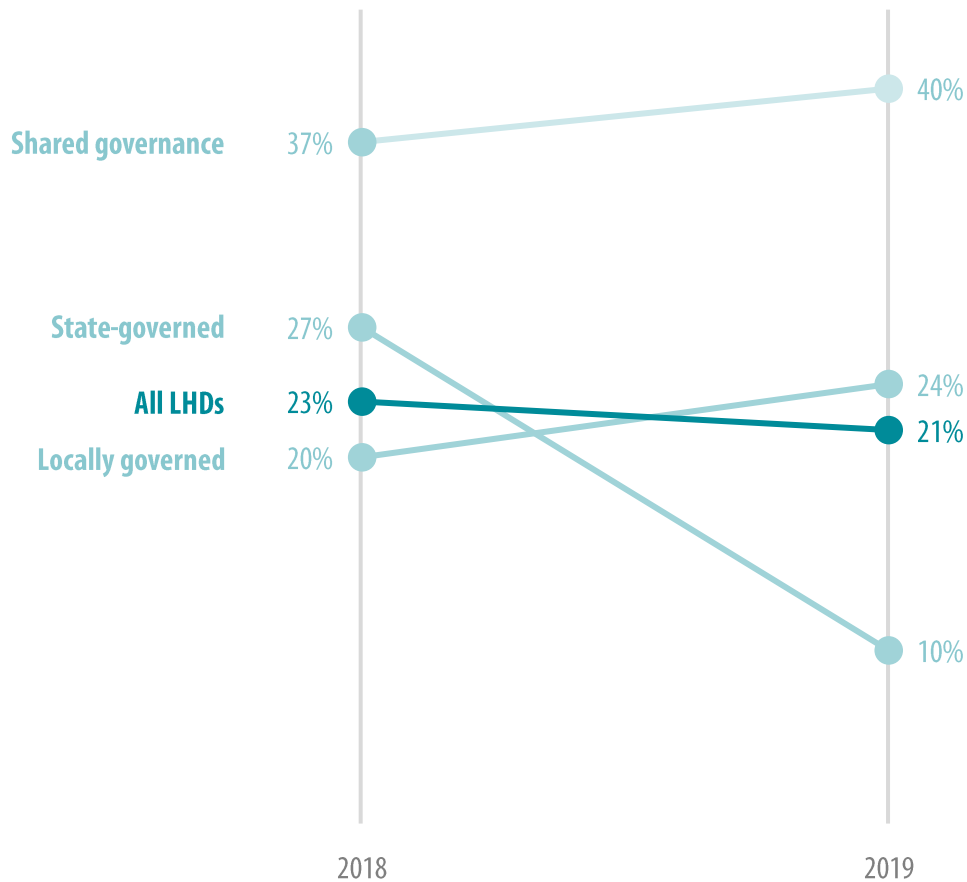


n(2018)=1,451
n(2019)=583

Approximately one in six small LHDs, one in four medium LHDs, and two in five large LHDs reported at least one job loss in the previous calendar year (2019). Because the population size served by an LHD is associated with the size of its workforce, it is expected that larger LHDs are more likely to experience job losses.

Job losses in the previous year due to layoffs and/or attrition, over time and by type of governance

Percent of LHDs reporting at least one job lost



n(2018)=1,451
n(2019)=583

LHDs with shared governance were more likely to report at least one job loss compared to state- or locally governed agencies.

Fewer state-governed LHDs experienced job losses over the past two years—with 10% reporting at least one job loss in calendar year 2019 and 27% in 2018.

Number of LHD jobs lost and added, over time and by population size served

	Number of positions eliminated	Number of positions added	Net change
All LHDs			
2011 (n=604; 617)	9,970	3,700	-6,270
2012 (n=1,775)	4,090	3,680	-410
2015 (n=1,261)	2,720	3,570	850
2017 (n=545)	730	900	170
2018 (n=1,424)	2,590	4,740	2,150
2019 (n=542)	1,520	5,870	4,350
Small (<50,000)			
2011 (n=333; 346)	2,200	600	-1,600
2012 (n=1,033)	820	620	-200
2015 (n=809)	620	720	100
2017 (n=283)	110	90	-20
2018 (n=???)	540	740	200
2019 (n=344)	540	1,000	460
Medium (50,000–499,999)			
2011 (n=220; 215)	4,500	1,350	-3,150
2012 (n=633)	2,030	1,650	-3,800
2015 (n=397)	1,460	1,640	180
2017 (n=203)	380	320	-60
2018 (n=???)	900	400	-500
2019 (n=179)	740	3,400	2,660
Large (500,000+)			
2011 (n=51; 56)	3,270	1,740	-1,530
2012 (n=109)	1,240	1,400	160
2015 (n=55)	640	1,210	570
2017 (n=59)	250	490	240
2018 (n=???)	1,150	2,140	990
2019 (n=19)	240	1,470	1,230

While job losses declined over time, the number of job additions within LHDs nationally have increased. This accounts for an overall growth of the workforce each year since 2015.

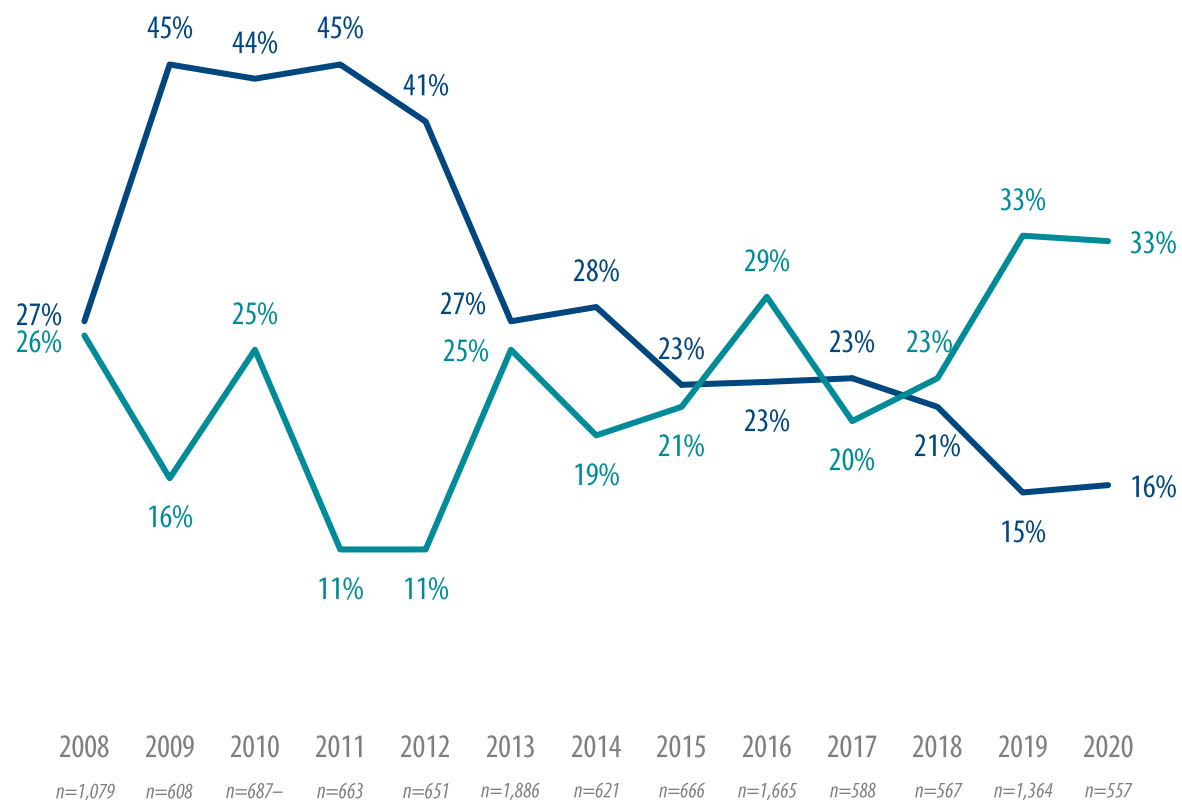
Among all LHDs, there was a net loss of 6,270 jobs in the 2011 calendar year. In 2019, the number of jobs added exceeded the number of jobs eliminated, for a net increase of 4,350 jobs across all LHDs.

Across all jurisdiction sizes, LHDs experienced a net increase in jobs.

Note: This figure summarizes data on numbers of LHD positions added and eliminated during six calendar years, with 2019 being the year assessed in 2020. The net change is the number of positions added minus the number of positions eliminated. NACCHO estimated 2011 statistics using data from two surveys in which LHDs reported jobs lost and added.

Changes in LHD budgets in current fiscal year compared to the previous fiscal year, over time

Percent of LHDs reporting a lower budget in the current fiscal year
 Percent of LHDs reporting a higher budget in the current fiscal year



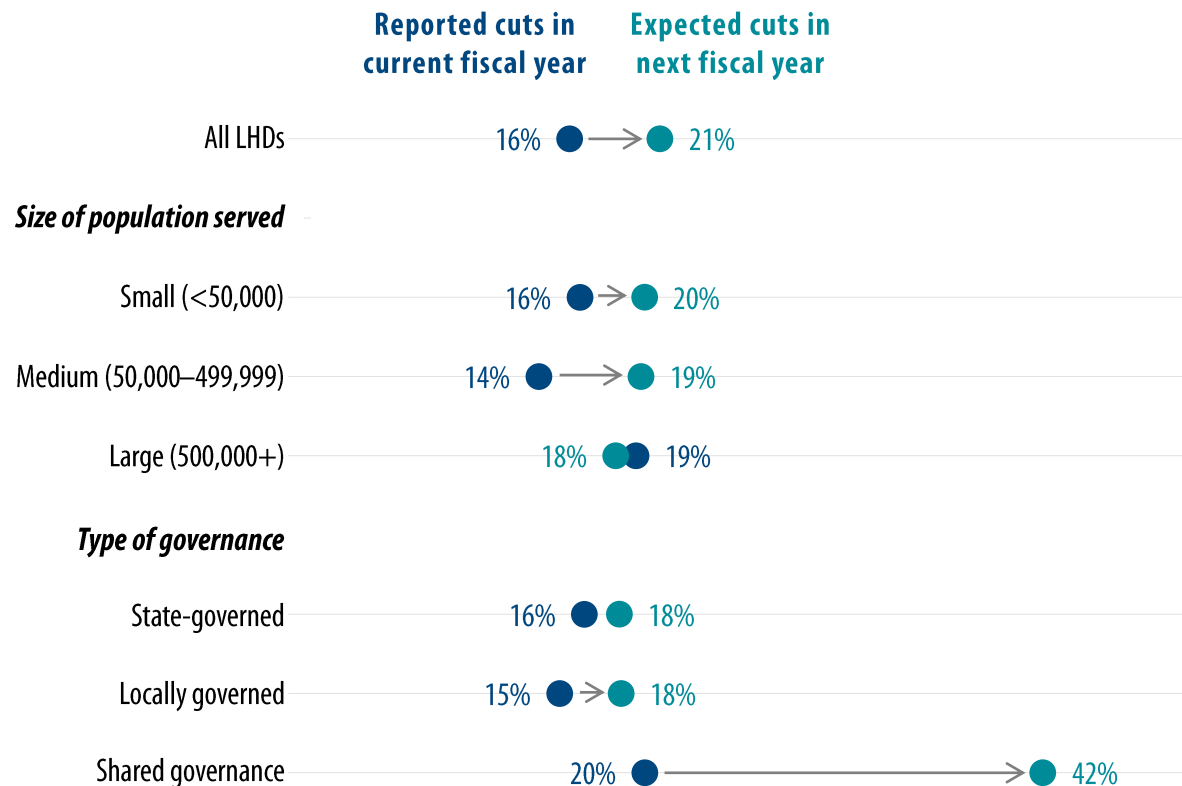
NACCHO has tracked changes in budgets at LHDs since 2008. From 2009 and 2012, between 41% and 45% of LHDs reported having a lower budget compared to the previous fiscal year. In recent years, fewer LHDs have reported budget cuts; 16% of LHDs reported having a lower budget in 2020.

On the other hand, the percent of LHDs reporting a higher budget compared to the previous fiscal year has slowly started to increase over time. While only 11% reported a higher budget in 2011 and 2012, 33% of LHDs reported a higher budget in 2019 and 2020.

Note: LHDs that reported do not know (<10%) were excluded. Also, NACCHO estimated 2010 statistics using data from two surveys in which LHDs reported budget changes.

Current and expected budget cuts, by population size served and type of governance

Percent of LHDs with...



n(reported)=557
n(expected)=537

One-fifth of all LHDs foresee budget cuts in their next fiscal year, while 16% reported budget cuts in their current fiscal year.

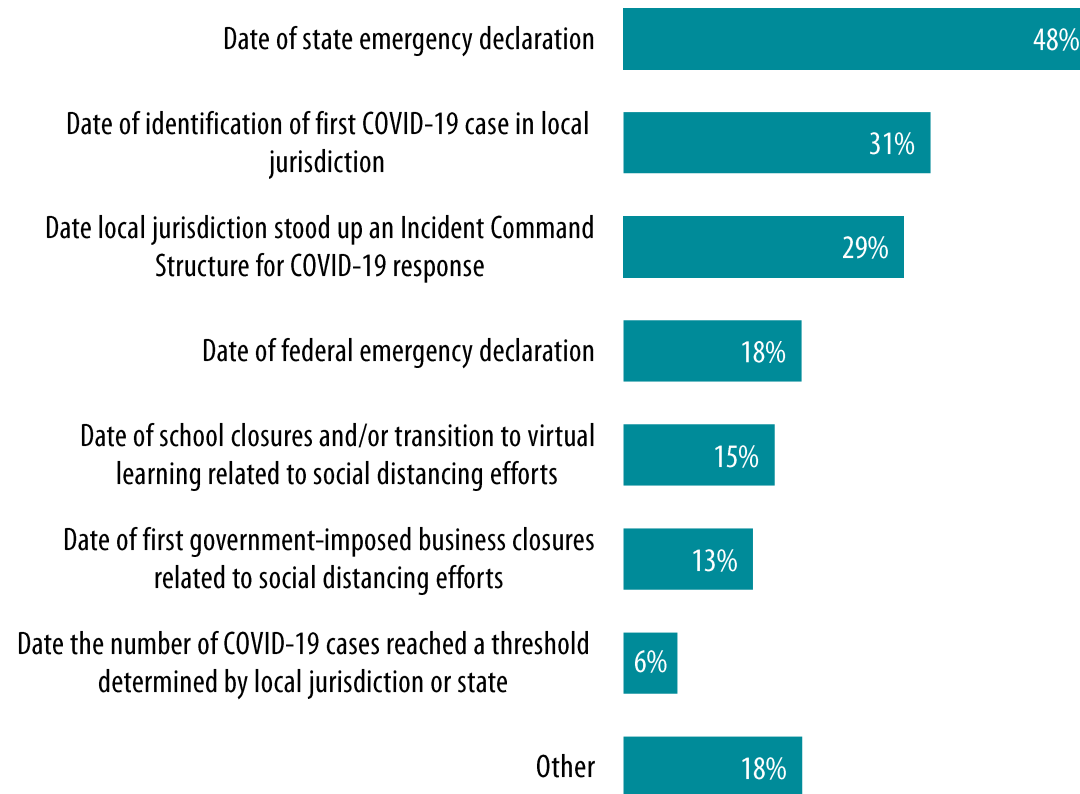
Among large LHDs, fewer anticipate future cuts than experienced cuts.

Despite type of governance, LHDs are likely to expect cuts in the next year. The proportion of LHDs with shared governance that are expecting decreased budgets is approximately twice those that reported budget cuts.

Note: LHDs that reported do not know (<10%) were excluded.

Events establishing the start of LHD COVID-19 response

Percent of LHDs



n=574

Overall, 90% of responding LHDs began their COVID-19 response before April 2020—with most (62%) beginning in March 2020 and another 18% in February 2020.

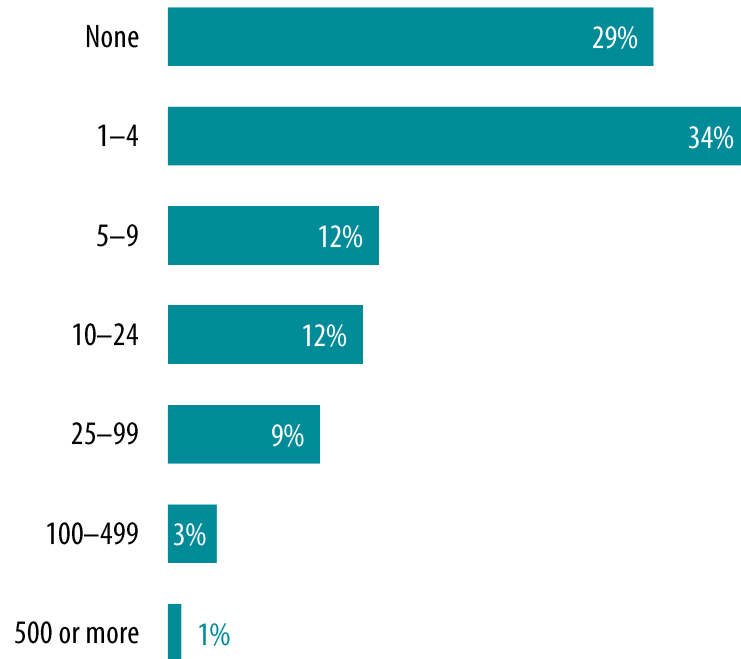
LHDs most commonly reported their state's emergency declaration as the beginning of their formal COVID-19 response. Other events included the identification of first case in local jurisdiction and the date their local jurisdiction stood up an Incident Command Structure (ICS). Notably, only 18% of LHDs reported the date of the federal emergency response as an establishing event.

Although not shown here, large LHDs were more likely to begin their response when ICS was stood up, while small LHDs were more likely to begin on the date of their state's emergency declaration. In addition, LHDs with state and shared governance were more likely to cite date of state emergency declaration than those under local governance.

Note: LHDs were able to select more than one option for this question.

Number of employees hired specifically to meet the needs of LHD's COVID-19 response

Percent of LHDs



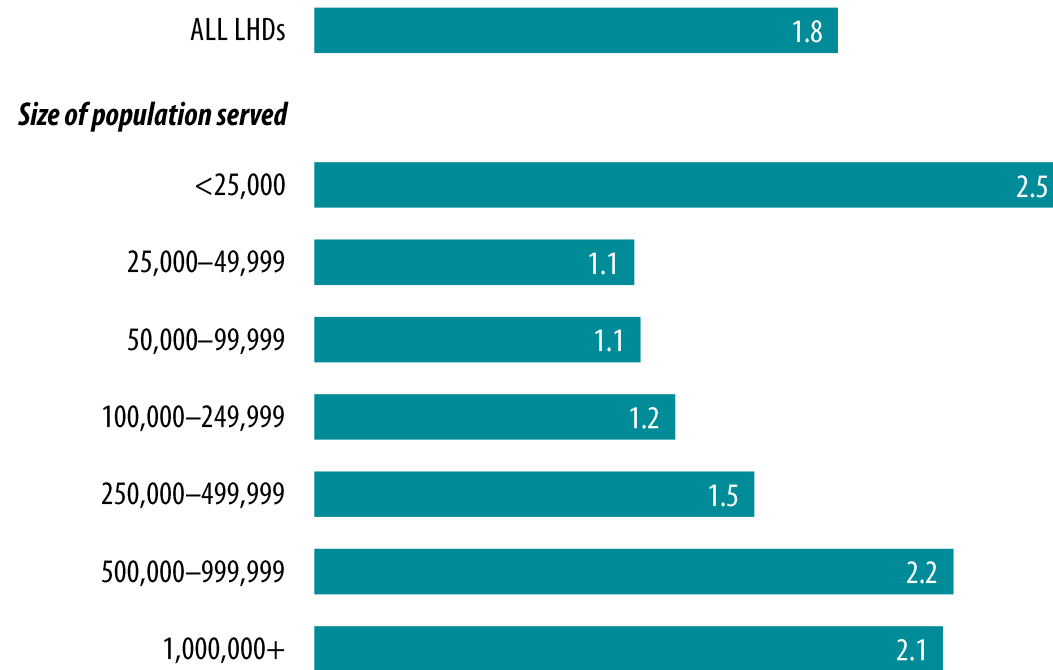
n=557

According to 2020 Forces of Change, LHDs nationwide hired a total of 53,600 employees to meet the needs of their response.

Most LHDs hired fewer than five individuals to specifically respond to the pandemic, with 29% not hiring any additional staff and 34% hiring between one and four new employees. Only 12% of LHDs hired more than 24 employees.

Mean number of employees hired per capita for LHD's COVID-19 response, by population size served

Mean number of employees hired per 10,000 people in jurisdiction



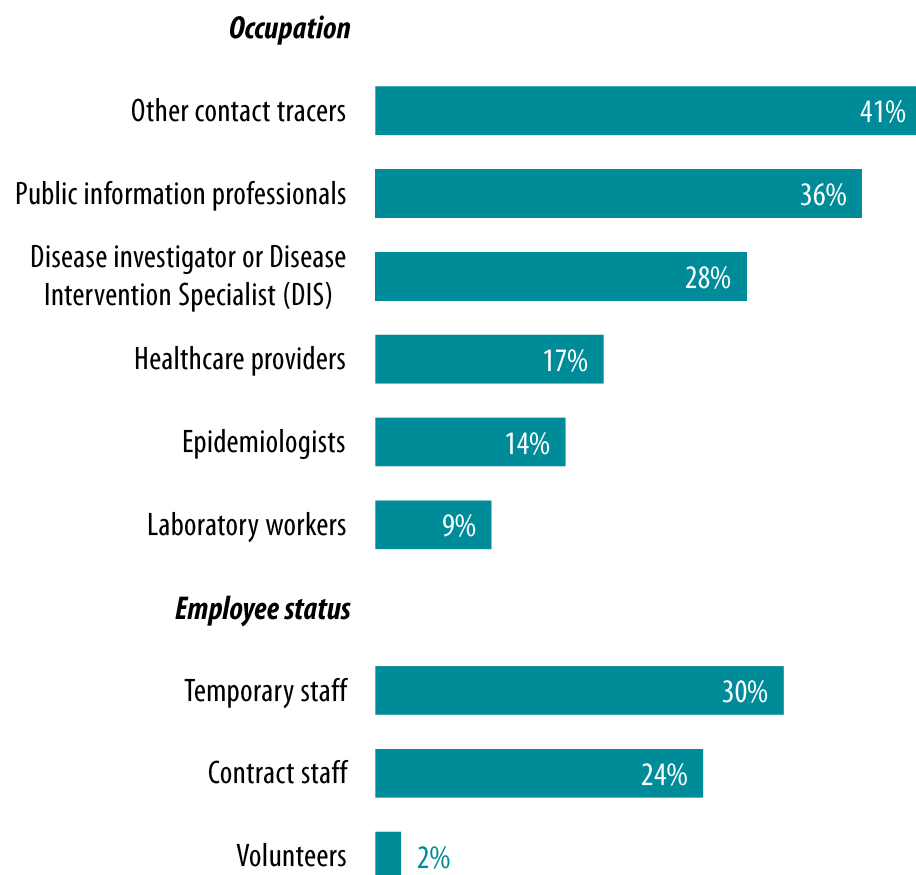
n=554

Nationally, LHDs added an average of 22 positions specifically to respond to COVID-19. This is 1.8 employees per 10,000 people in the U.S.

The number of employees hired to address the pandemic varied across jurisdiction size. Notably, LHDs serving populations of fewer than 25,000 people hired the most employees per capita.

Types of employees hired specifically to meet the needs of LHD's COVID-19 response

Percent of LHDs



n=400

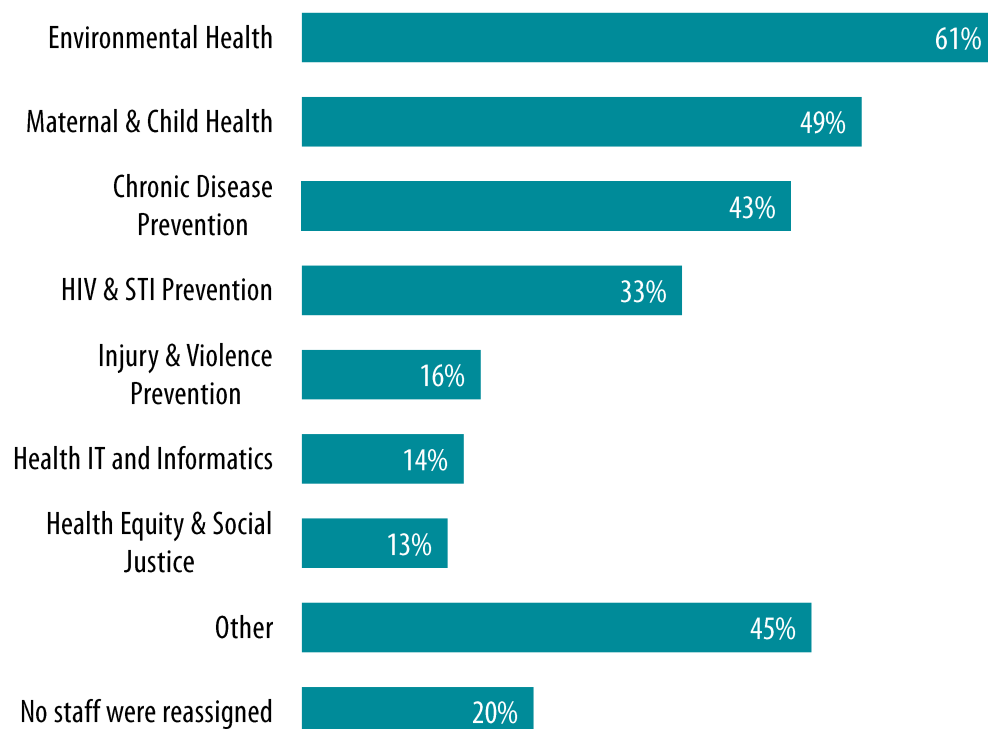
The most common occupations filled by employees hired to address COVID-19 were contact tracers and public information professionals.

In addition, one-third of LHDs hired temporary staff, while one in four hired contract staff.

Note: LHDs were able to select more than one occupation for employees hired specifically to meet the needs of LHDs' COVID-19 response.

Occupations of employees reassigned from regular duties to support COVID-19 response

Percent of LHDs



n=513

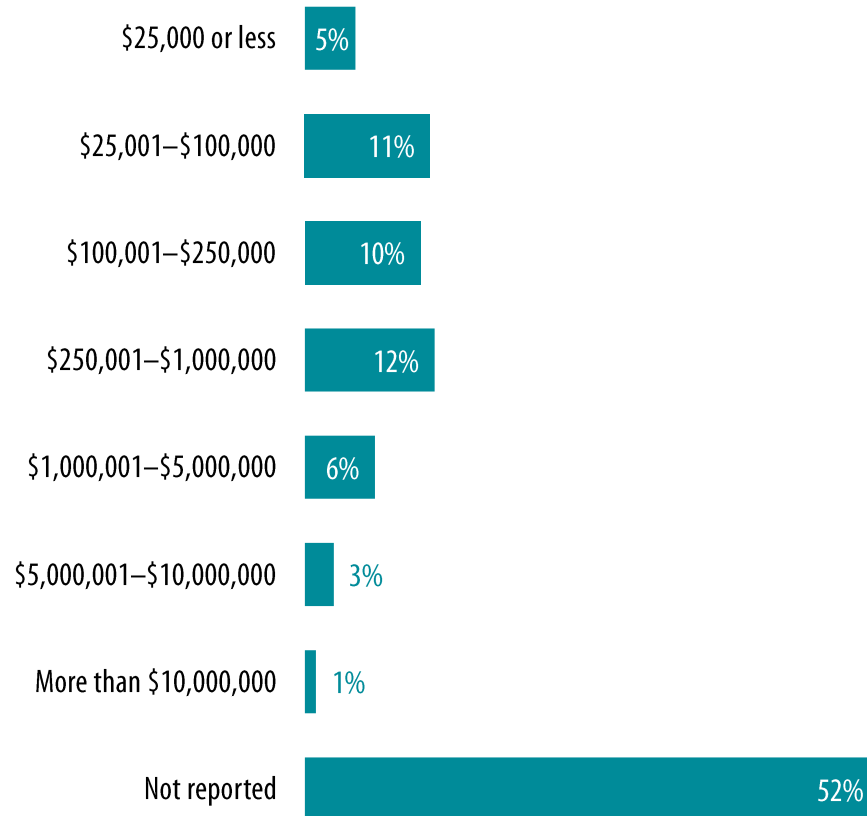
In place of or in addition to hiring new employees, 80% of LHDs reassigned staff from a variety of programs to support the agency's pandemic response activities. The most commonly affected program was environmental health, with two in three LHDs reassigning staff from this area.

Staff that were reassigned most often performed fewer of their regular duties. However, nearly half of LHDs reassigning staff asked employees to complete both their regular duties and those for COVID-19.

Note: LHDs were able to select more than one option for this question.

Total COVID-19 expenditures in 2020

Percent of LHDs



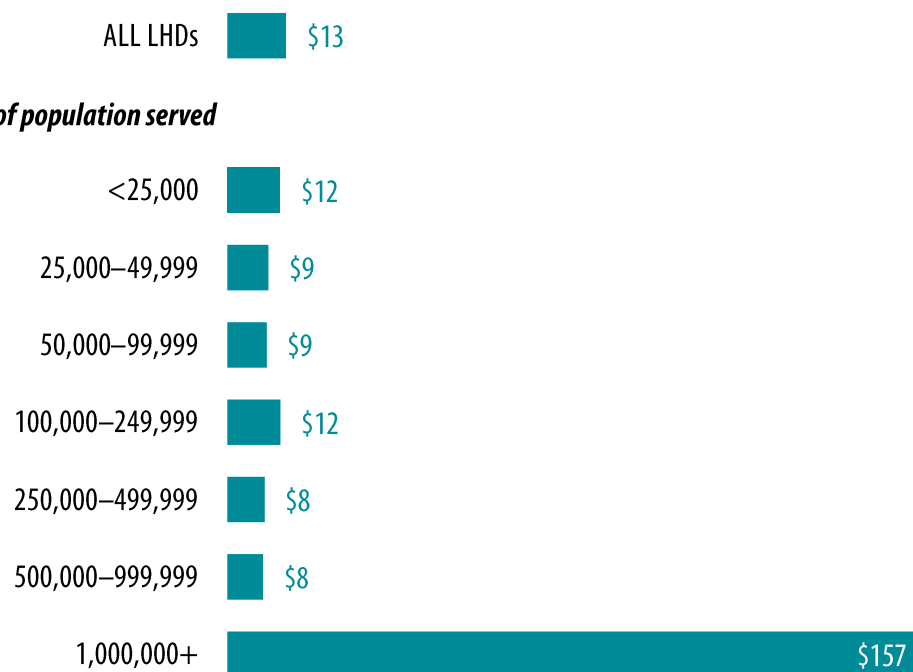
n=583

More than half of LHDs did not report the amount of money spent on the response. Some LHDs did not have the capacity to track expenditures, while others were concerned that information could be politicized.

Overall, LHDs spent a total of \$3.25 billion on response activities. Total spending ranged from \$1,000 to \$1.16 billion. Of those that reported COVID-19 expenditures, most LHDs spent more than \$100,000.

Mean COVID-19 expenditures per capita, by population size served

Mean expenditures per capita



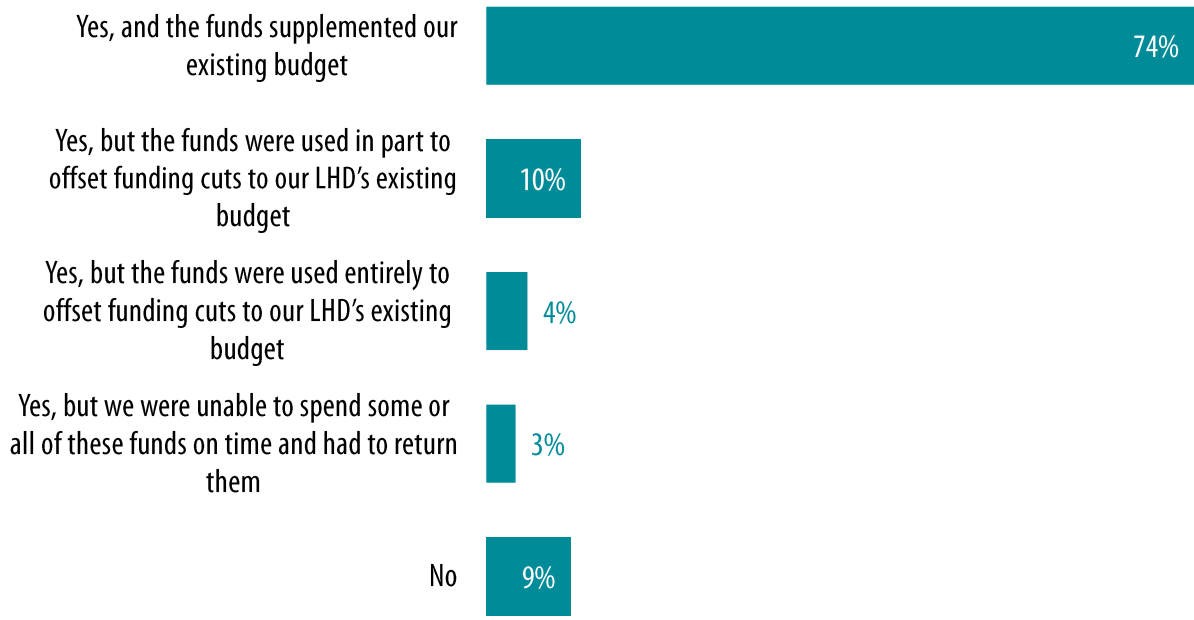
n=278

According to 2020 Forces of Change, LHDs nationwide spent an average of \$1.36 million to respond to COVID-19. This is \$13 per person in the U.S.

Notably, the amount of money spent per capita to address the pandemic did not vary much across most jurisdiction sizes. The largest LHDs—those serving populations of 1,000,000 people or more—had expenditures substantially larger than other agencies.

COVID-19 supplemental or emergency funding

Percent of LHDs



n=577

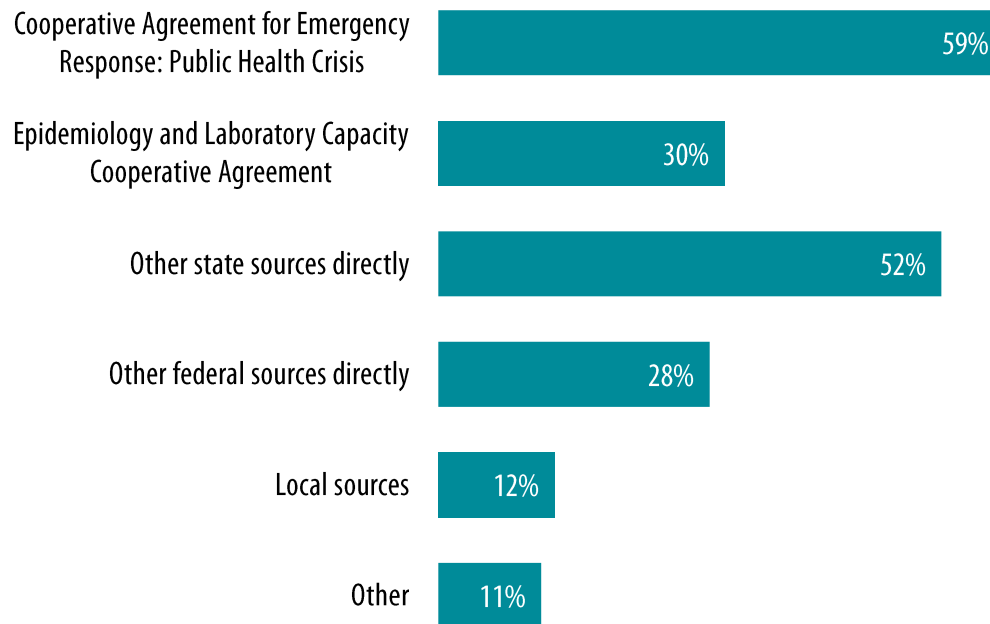
In the first year of the pandemic, a wide variety of emergency and supplemental funds were mobilized across the federal and state governments. The majority of LHDs received some form of additional emergency funding during the first year of the pandemic.

Most commonly, this funding supplemented the LHD's existing budget. Notably, 14% of LHDs reported that the funds offset cuts to their existing budget.

Only 9% of LHDs did not receive any supplemental or emergency funding. Some of these LHDs had requested funding but were either ineligible or were awaiting distribution at the time of the survey.

Sources of COVID-19 supplemental or emergency funding

Percent of LHDs that received funding



n=517

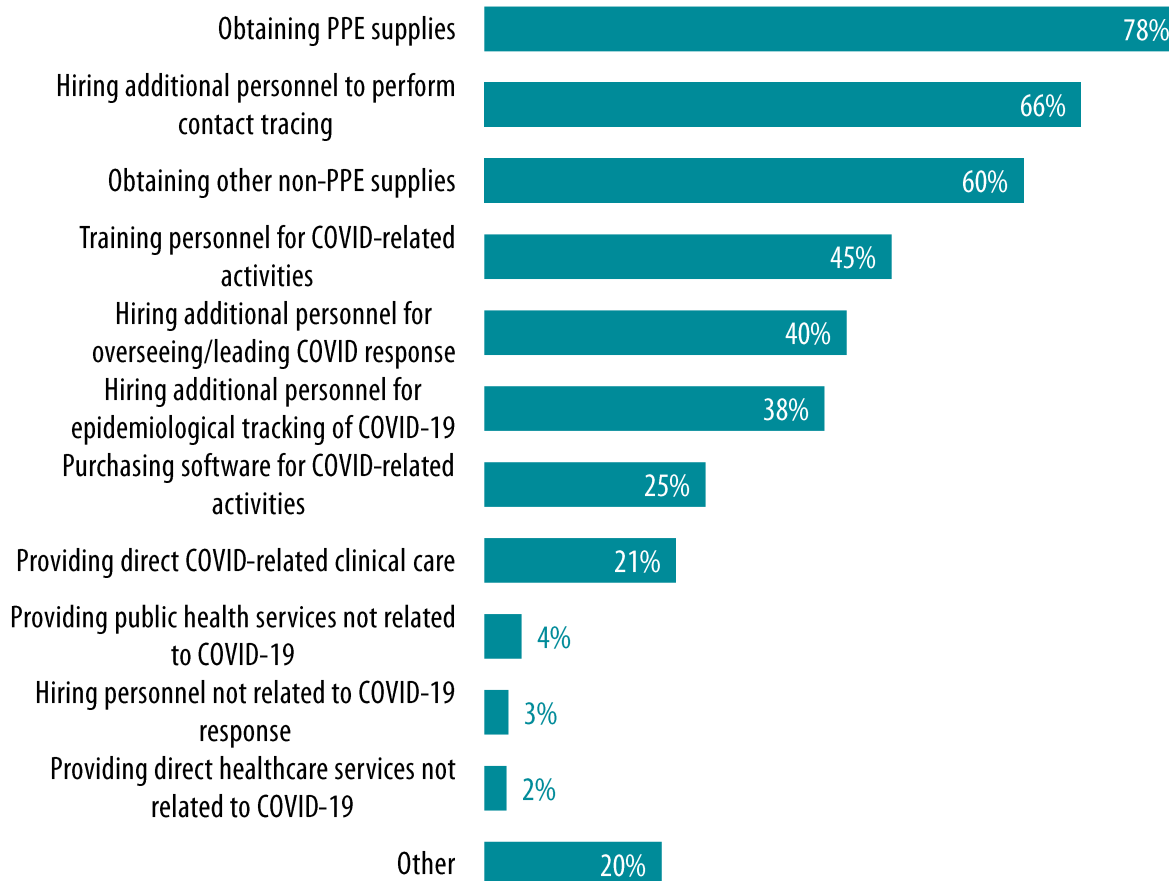
More than half of LHDs received supplemental or emergency funding from either the Public Health Crisis federal cooperative agreement or directly from state sources.

The most common funding source was the federal government, with 81% of LHDs receiving money via at least one federal mechanism.

Note: LHDs were able to select more than one option for this question.

Use of COVID-19 supplemental or emergency funding

Percent of LHDs that received funding

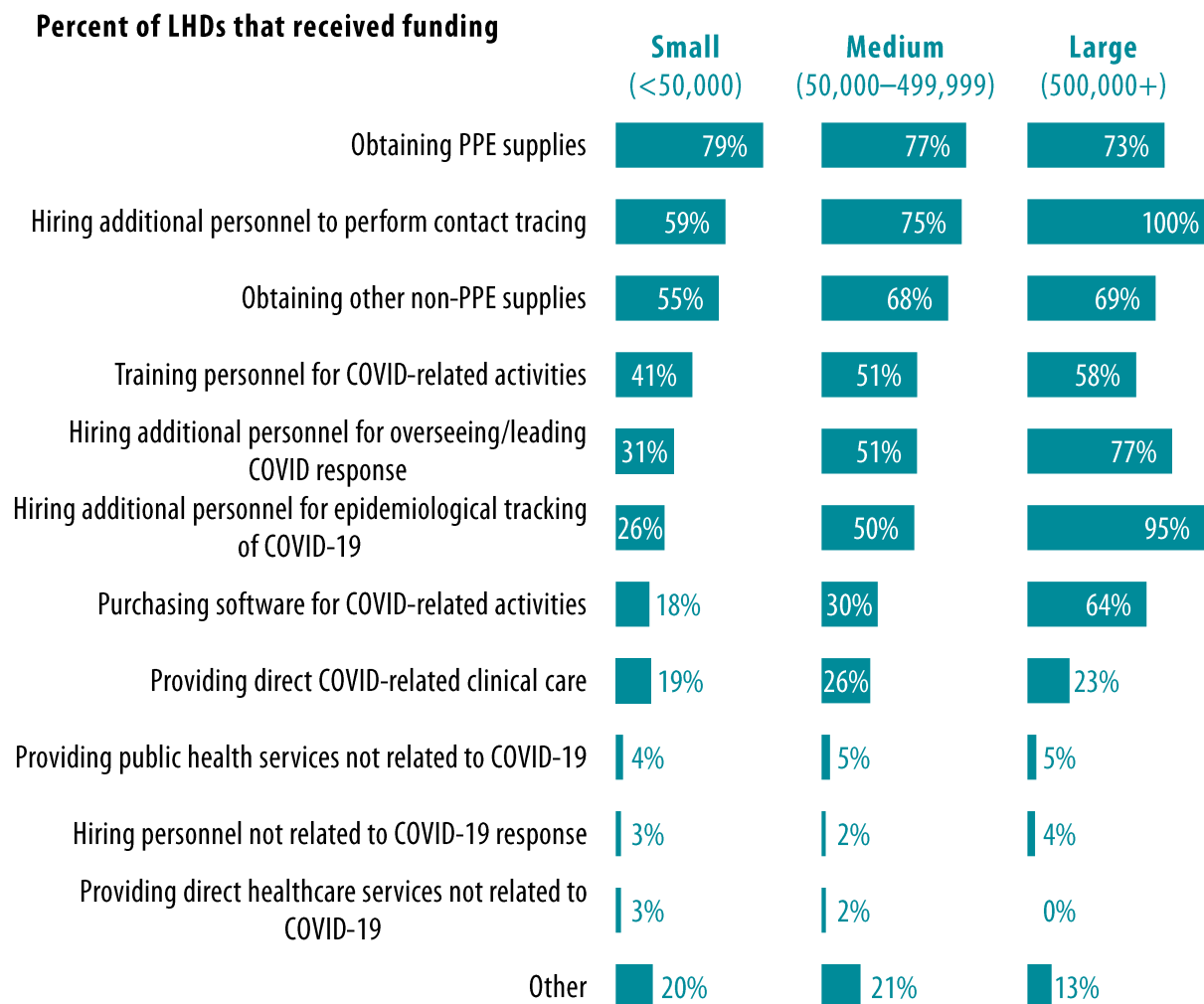


n=481

More than half of LHDs reported using emergency funds for Personal Protective Equipment (PPE), hiring additional personnel to perform contract tracing, and obtaining non-PPE supplies.

The least commonly reported uses of these funds were for activities unrelated to COVID-19. Less than 5% of LHDs reported spending supplemental or emergency funding on providing services or hiring personnel not related to the response.

Use of COVID-19 supplemental or emergency funding, by population size served

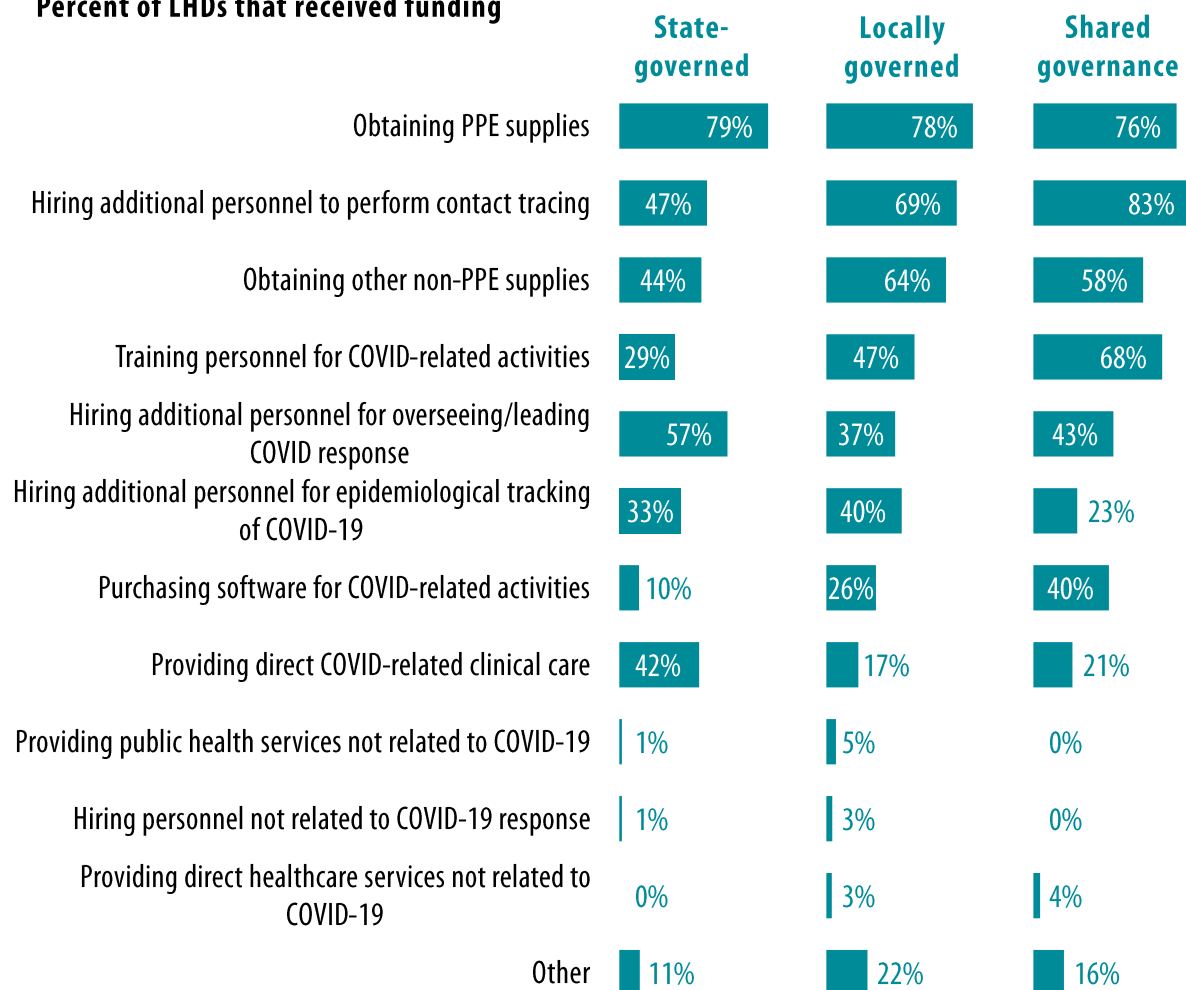


Use of emergency funding varied across jurisdiction sizes. In particular, large LHDs were far more likely to hire additional personnel to conduct COVID-19 response activities—including performing contact tracing, overseeing/leading the response, and epidemiological tracking—compared to small and medium LHDs. They were also more likely to use funds for purchasing software to support their response.

n=481

Use of COVID-19 supplemental or emergency funding, by type of governance

Percent of LHDs that received funding



n=481

When looking across type of governance, use of COVID-19 funding varied. State-governed LHDs were the most likely to hire additional personnel to oversee/lead the response and provide direct clinical care related to COVID-19.

On the other hand, LHDs with shared governance were the most likely to hire personnel to perform contact tracing, train personnel to respond to COVID-19, and purchase software to support the response.

03 Local Health Official & Staff Harassment

COVID-19 protection measures implemented by LHDs to mitigate the virus' spread—including mask mandates, social distancing, and school and business closures—resulted in the rampant politicization of pandemic response.

In particular, harassment of LHDs and public health practitioners was widespread. [One study using our data found at least 1,499 instances of harassment among LHDs in the first year of the pandemic.](#) In addition, agencies experiencing harassment were more likely to report staff resignations, reassignments, or firings due to political conflicts with the public.

As the pandemic transitions to an endemic, response actions are likely to be hyper-local and especially required in regions with high anti-vaccination or anti-regulation sentiment. This could result in increased threats targeted towards public health staff who [are already experiencing high stress, burnout, and structural change.](#)

The public health field must ensure that LHD leaders and staff feel empowered to prevent harassment, intervene in harassment, and support colleagues targeted by threats.

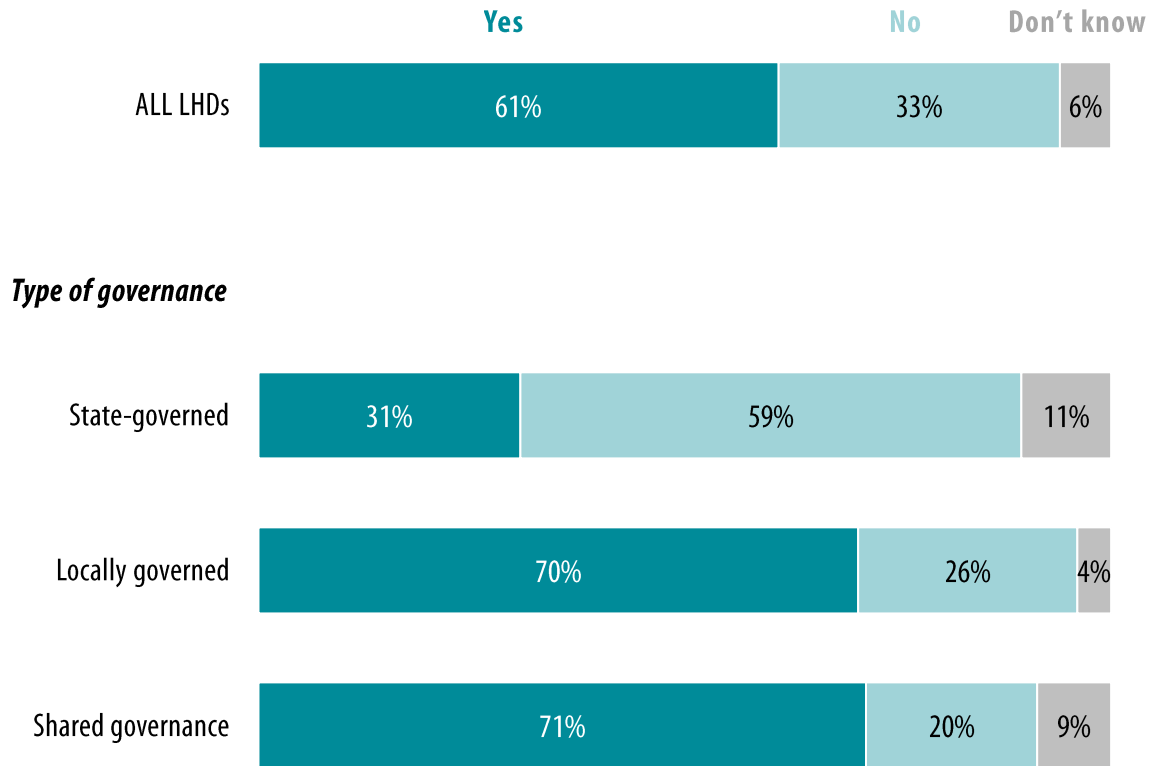
NACCHO would like to acknowledge the following contributors to this section of the survey from [Johns Hopkins Office of Public Health Practice and Training in the Bloomberg School of Public Health](#): Beth Resnick, DrPH, MPH, and Paulani Mui, MPH.

What's in this section?

- Harassment directed towards LHDs, local health officials, and/or other LHD personnel
- Protections against harassment
- LHD personnel reassignments or firings due to political conflict

Experiences of harassment among LHDs, agency leadership, or other agency personnel during COVID-19

Percent of LHDs



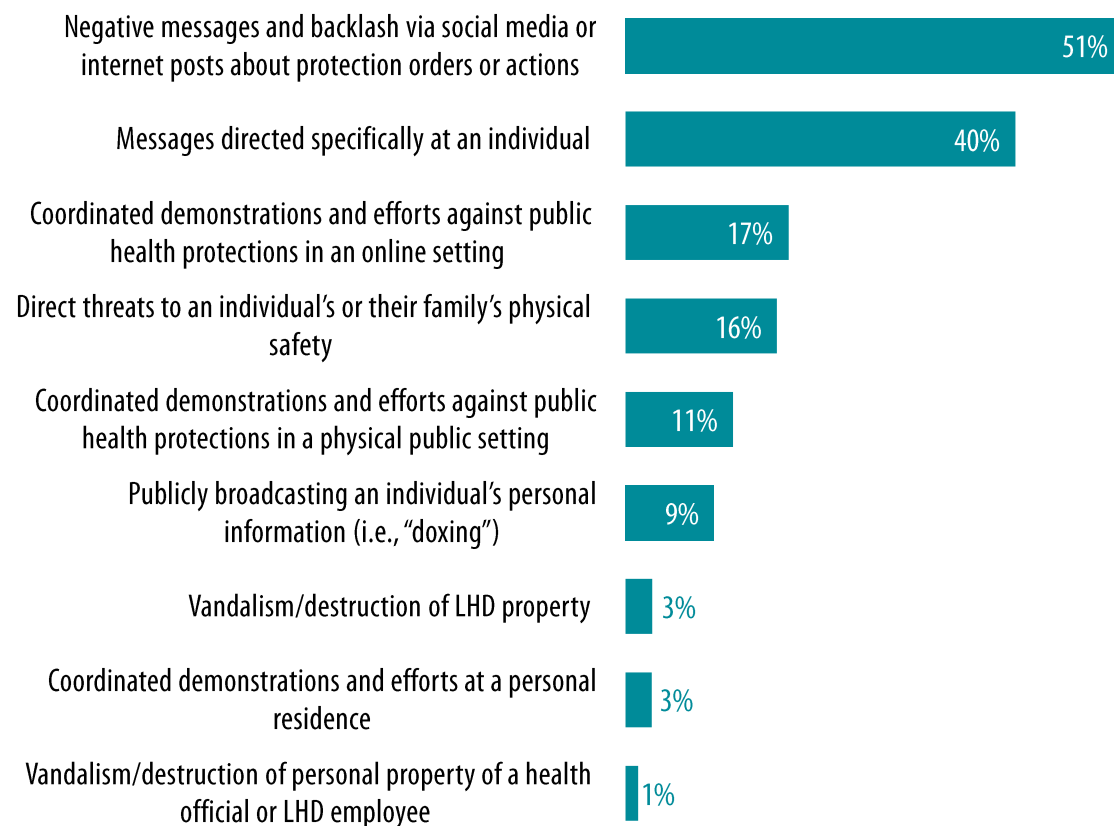
Nationally, more than half of LHDs reported that their agency, leadership, or personnel experienced harassment in 2020 because of COVID-19 response activities.

This varied by type of governance. Specifically, state-governed LHDs were less likely to experience harassment—with 31% reporting instances compared to approximately 70% of agencies with local or shared governance.

n=559

Types of harassment LHDs experienced during COVID-19

Percent of LHDs that experienced harassment



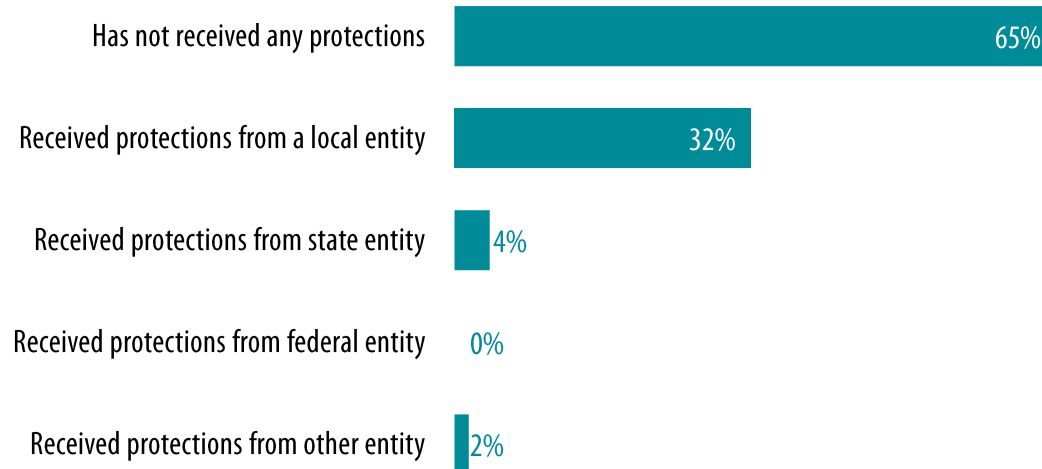
n=583

The most common form of harassment targeting agencies, leadership, or other personnel was negative messages and backlash via social media—with 51% of LHDs reporting one of these groups being targeted in this way.

Although not shown, large LHDs were most likely to experience direct messages and threats to an individual, as well as instances of public broadcasting of an individual's personal information.

Protections received by LHDs in response to harassment

Percent of LHDs experiencing harassment



n=327

Of LHDs reporting instances of harassment, 65% did not receive any protections. The most common source of protections was local entities.

Notably, no LHDs experiencing harassment reported receiving protections from a federal entity.

Reassignments and/or firings of personnel due to conflicts between public and political leaders

Percent of LHDs



n=558

Nine in 10 LHDs reported that agency leaders or other personnel did not leave and were not removed from the agency because of political pressure. However, 8% of LHDs did lose personnel due to conflicts between public and political leaders.

Of these LHDs with reassignments or firings, 60% experienced negative messages and backlash via social media, 32% received messages directed at an individual, and 26% had coordinated demonstrations against public health protections in an online setting.

04 Changes in Services & Programs

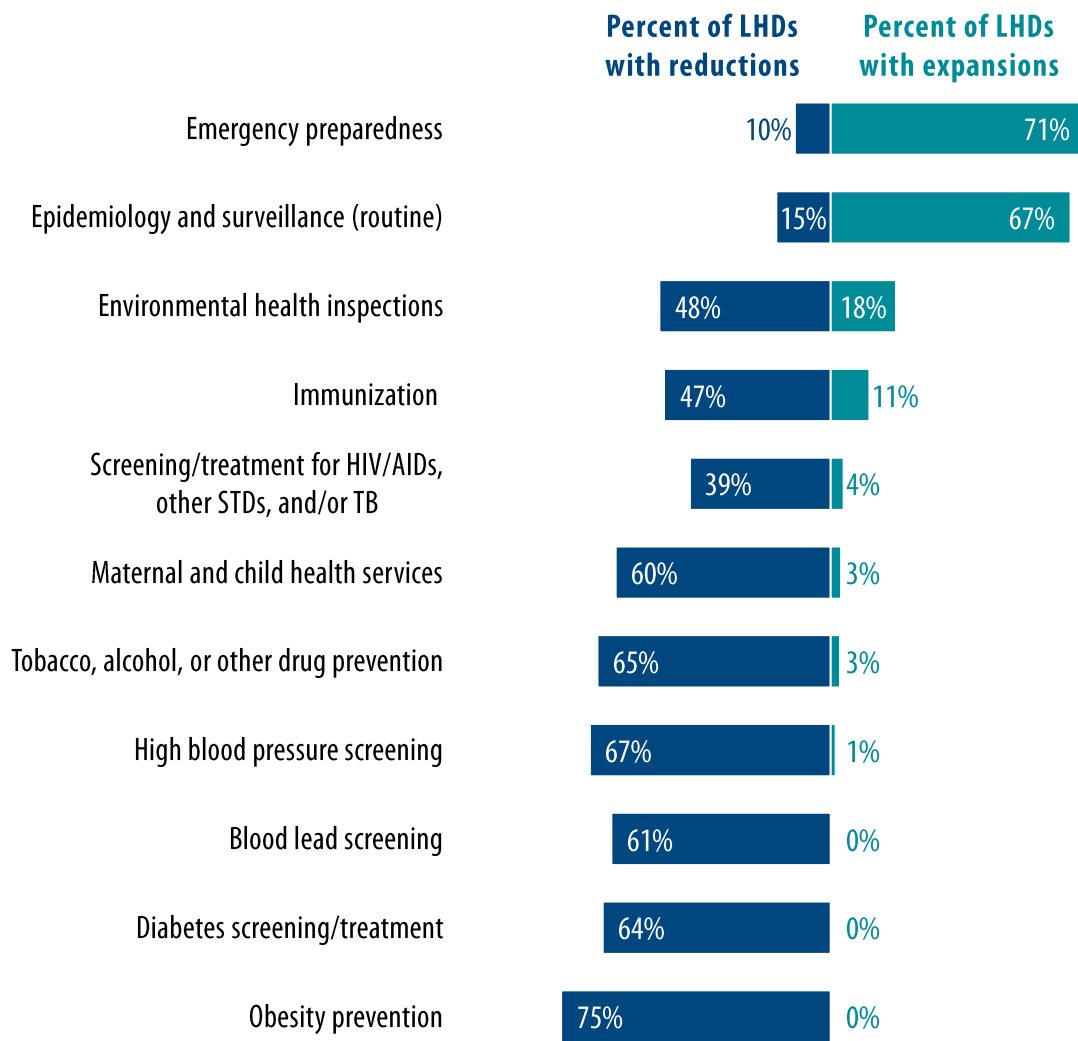
During the pandemic, many LHDs were forced to suspend or alter foundational public health services to reallocate staff to their response. These services are critical to addressing ongoing population health issues facing communities, including chronic disease and substance use disorder. As a result, epidemics like the drug overdose crisis quietly escalated during the pandemic.

Despite having to reassign staff at the cost of bolstering services, LHDs experienced an expansion of their authority and responsibilities. For example, some of these added roles were in predictable areas, including disease protection, surveillance, and testing.

What's in this section?

- Changes in level of LHD service provision in the past year
- Changes in authority, roles, and/or responsibilities to respond to COVID-19

Changes in provision of services during COVID-19, among LHDs that provide the service



n=65-224

A larger proportion of LHDs reduced, rather than expanded, the provision of their clinical and population-based services during the pandemic. Across all programs, reductions were more common than expansions, except for emergency preparedness and routine surveillance activities.

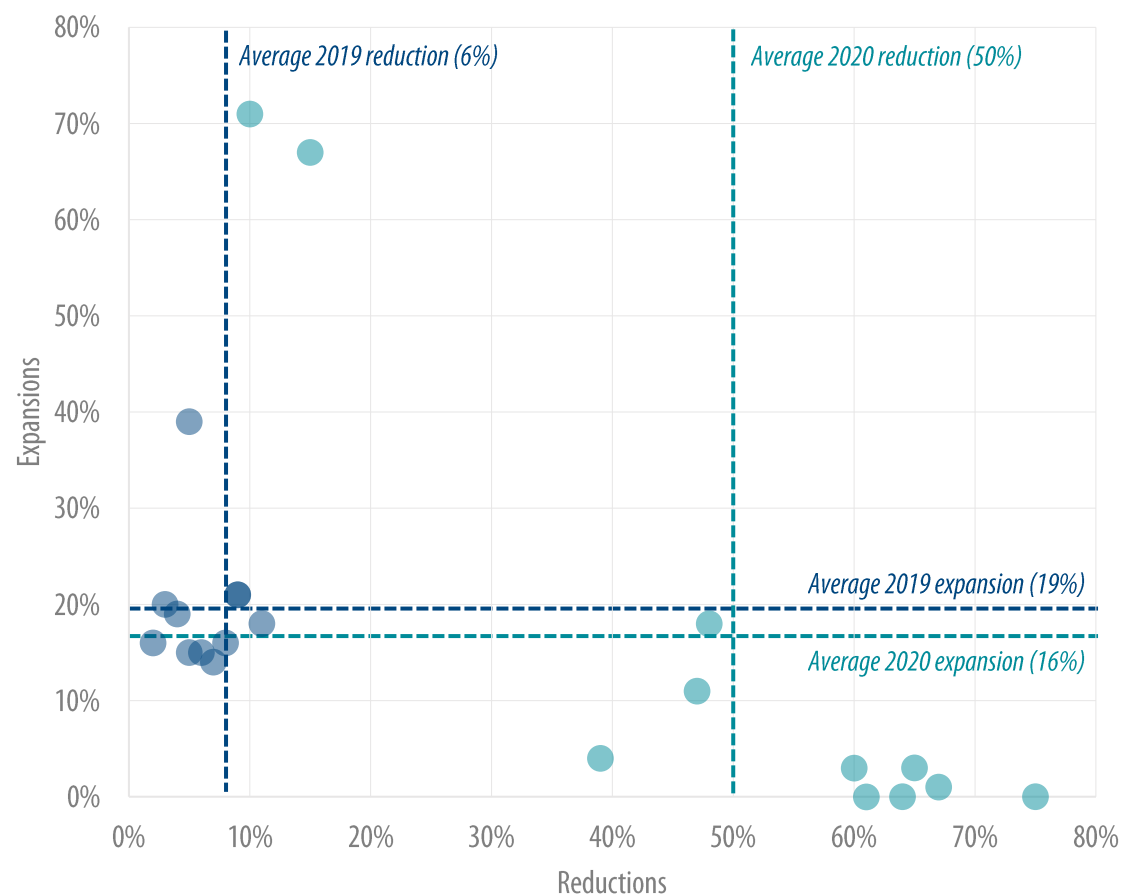
Notably, 75% of LHDs reduced obesity prevention programming, while no LHDs expanded these services.

Note: LHDs selecting "no change" are not presented here, and those that reported do not know (<10%) were excluded from the analysis.

Changes in LHD provision of services, among LHDs that provide the service, over time

Percent of LHDs

● Each dot represents a service category



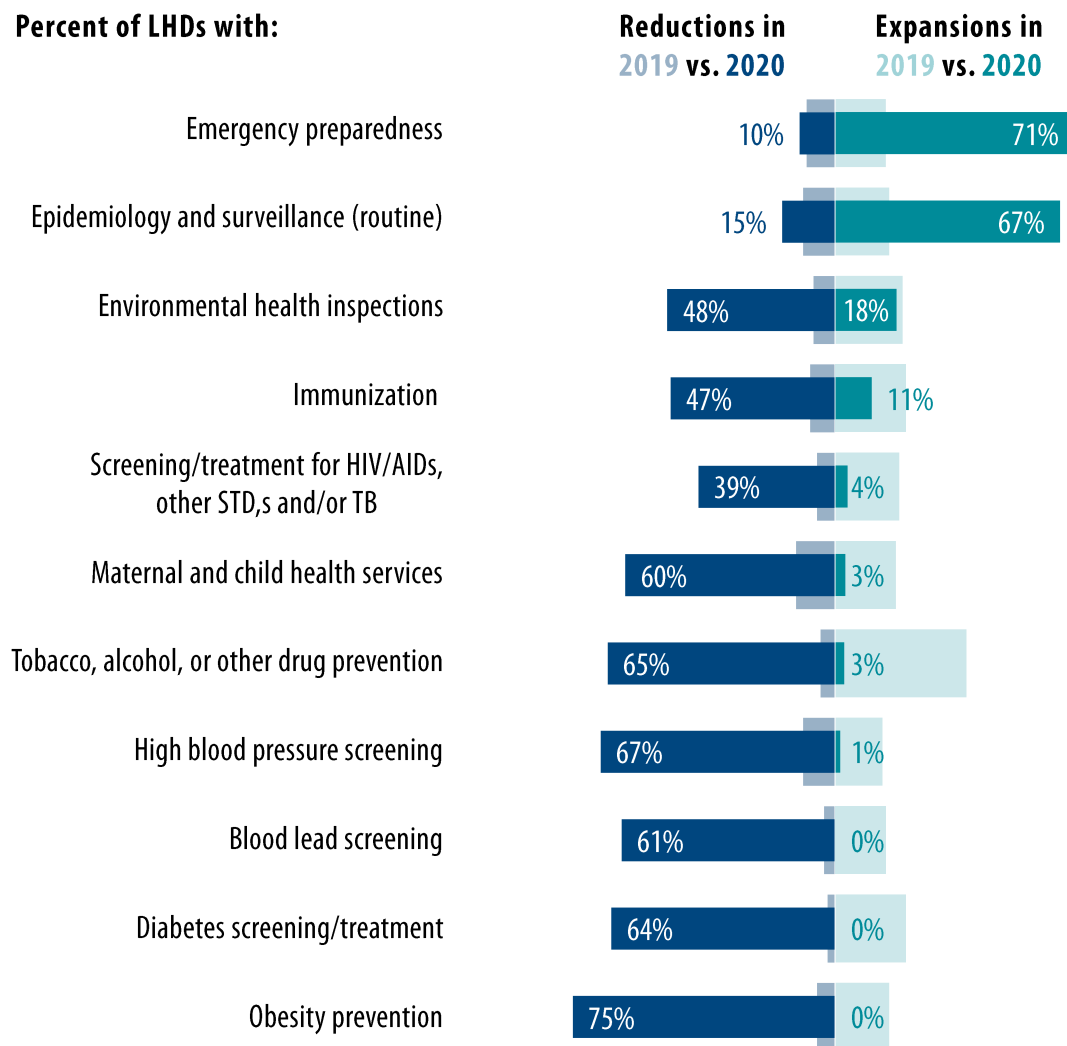
n(2019)=602–1,407
n(2020)=65–224

Compared to the [changes in service provision LHDs reported in 2019](#), reductions were substantially more common during the pandemic than in previous years—regardless of the type of service. Across services, an average of 6% of LHDs reduced their provision in 2019, compared to 50% in 2020.

Note: LHDs selecting “no change” are not presented here, and those that reported do not know (<10%) were excluded from the analysis.

Each dot represents a service category, and the same categories were assessed in both 2019 (shaded in blue) and 2020 (shaded in teal). The scatter plot portrays the percentage of LHDs reporting reductions in service provision (x-axis) and the percentage reporting expansions in service provision (y-axis).

Changes in LHD provision of services during COVID-19, compared to changes in 2019



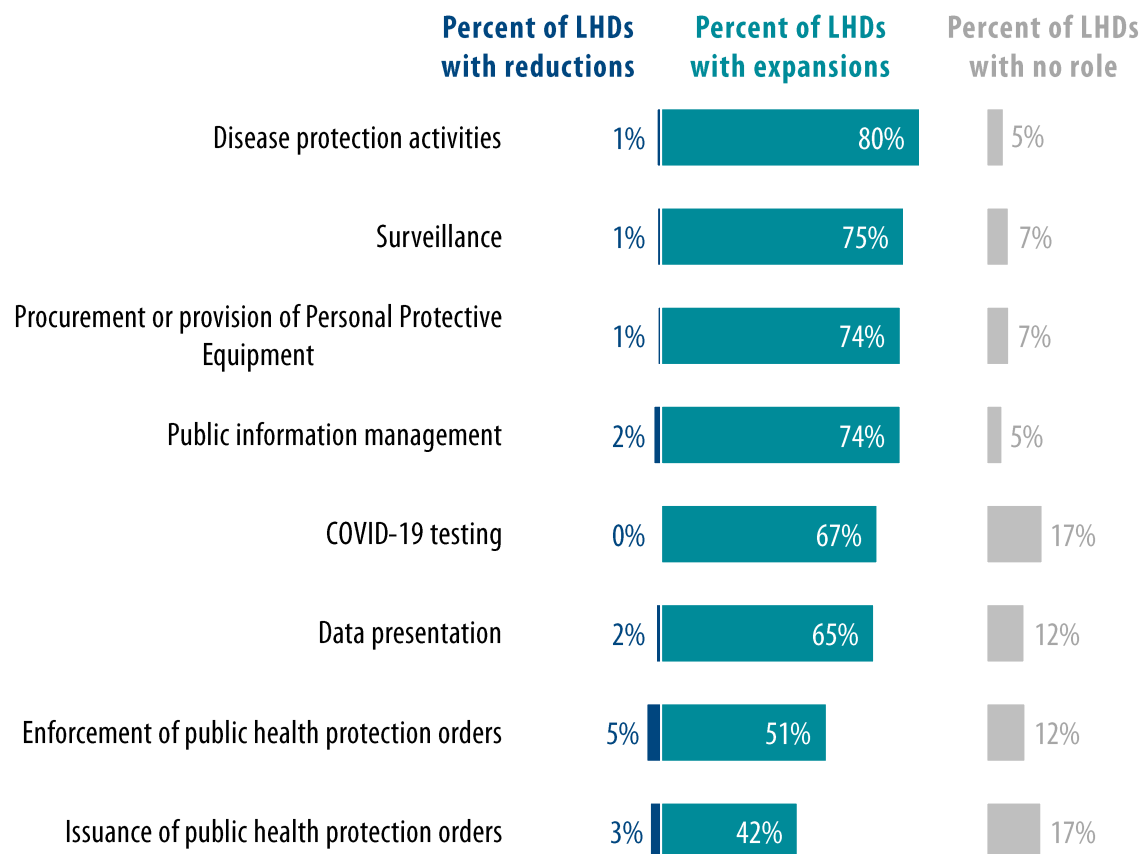
n(2019)=602–1,407
n(2020)=65–224

As expected, LHDs were much more likely to expand their provision of emergency preparedness and surveillance services during COVID-19 than in 2019.

Meanwhile, LHDs were much less likely to expand their provision of tobacco, alcohol, or other drug prevention services in 2020 compared to 2019.

Note: LHDs selecting “no change” are not presented here, and those that reported do not know (<10%) were excluded from the analysis.

Areas of expansions or reductions in authority, roles, and/or responsibilities to respond to COVID-19



In the first year of the pandemic, most LHDs reported expansions of their authority, roles, or responsibilities related to COVID-19 response.

Most commonly, LHD authority expanded in the areas of disease protection, surveillance, procurement or provision of PPE, public information management, and COVID-19 testing. Meanwhile, 2% or fewer of LHDs reported their authority was reduced in these areas.

Note: LHDs selecting "neither expansion nor reduction of authority" are not presented here.

n=533-549

Areas of expansions or reductions in COVID-19 authority/responsibilities, by population size served

Percent of LHDs

	Small (<50,000)		Medium (50,000–499,999)		Large (500,000+)	
	Reduction	Expansion	Reduction	Expansion	Reduction	Expansion
Disease protection activities	1%	79%	2%	81%	5%	80%
Surveillance	1%	73%	2%	77%	6%	79%
Procurement or provision of Personal Protective Equipment	2%	74%	1%	72%	0%	86%
Public information management	2%	75%	2%	72%	10%	75%
COVID-19 testing	0%	63%	1%	69%	0%	90%
Data presentation	1%	61%	2%	70%	5%	86%
Enforcement of public health protection orders	4%	51%	6%	53%	0%	39%
Issuance of public health protection orders	2%	42%	6%	40%	0%	57%

n=533–549

Expansions of COVID-19 authority and responsibilities varied slightly across jurisdiction sizes. In particular, large LHDs were much more likely to experience expansions related to COVID-19 testing and data presentation compared to small and medium LHDs.

On the other hand, small and medium LHDs were more likely to have expanded authority to enforce public health protection orders than large agencies.

Of the eight assessed areas, no more than 10% of LHDs (regardless of jurisdiction size) reported a reduction in the service area.

Note: LHDs selecting “neither expansion nor reduction of authority” are not presented here, as well as those that reported “N/A” because they had no role during or prior to COVID-19.

05 Pandemic Preparedness & Recovery Planning

Emergency preparedness and response is a foundational public health capability that no jurisdiction can be without. Therefore, many LHDs were prepared for a pandemic despite the unsuspected onset of COVID-19. Most have a response plan that was developed in the five years prior to the pandemic, and others have more general preparedness plans they adapted to respond to COVID-19.

Community resilience is a key component of LHDs' work to prepare and respond to public health emergencies. However, many jurisdictions did not have a public health community recovery plan in place by the end of 2020.

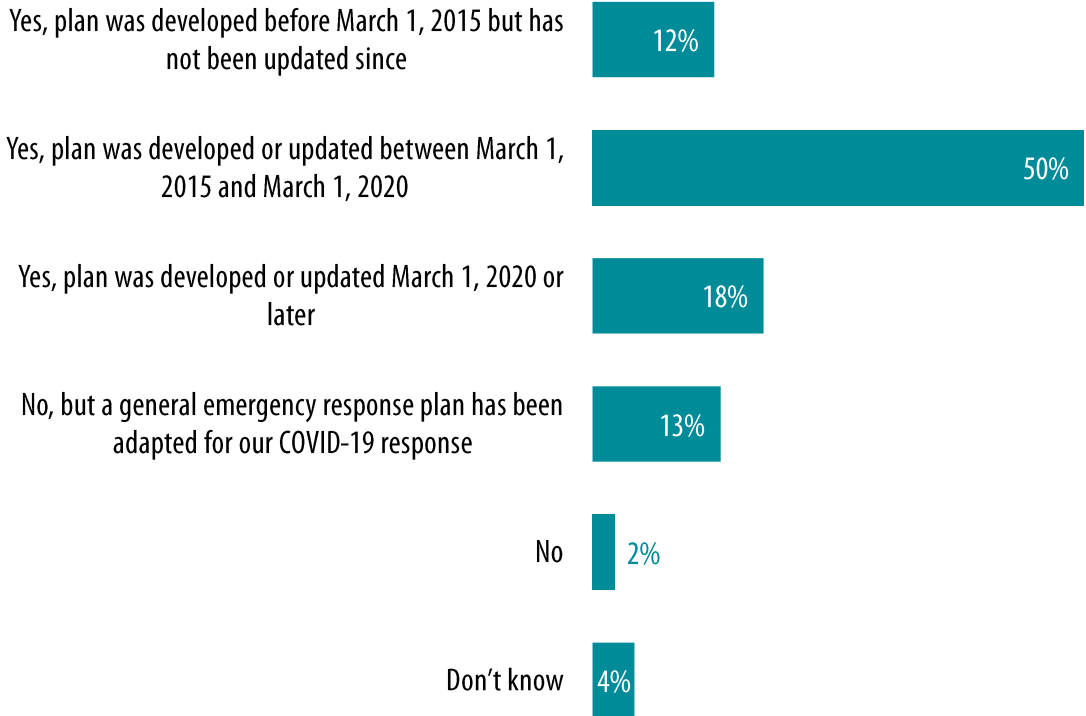
Despite the critical work LHDs do to improve their community's ability to withstand, adapt, and recover from an emergency, they reported a variety of barriers to a robust COVID-19 response. In particular, lack of adequate staffing was the most commonly reported barrier.

What's in this section?

- Jurisdictional pandemic response plans
- Jurisdictional community recovery plans
- Jurisdictional pandemic supply shortages
- Challenges to COVID-19 response faced by LHDs

Existence of jurisdictional pandemic response plan

Percent of LHDs



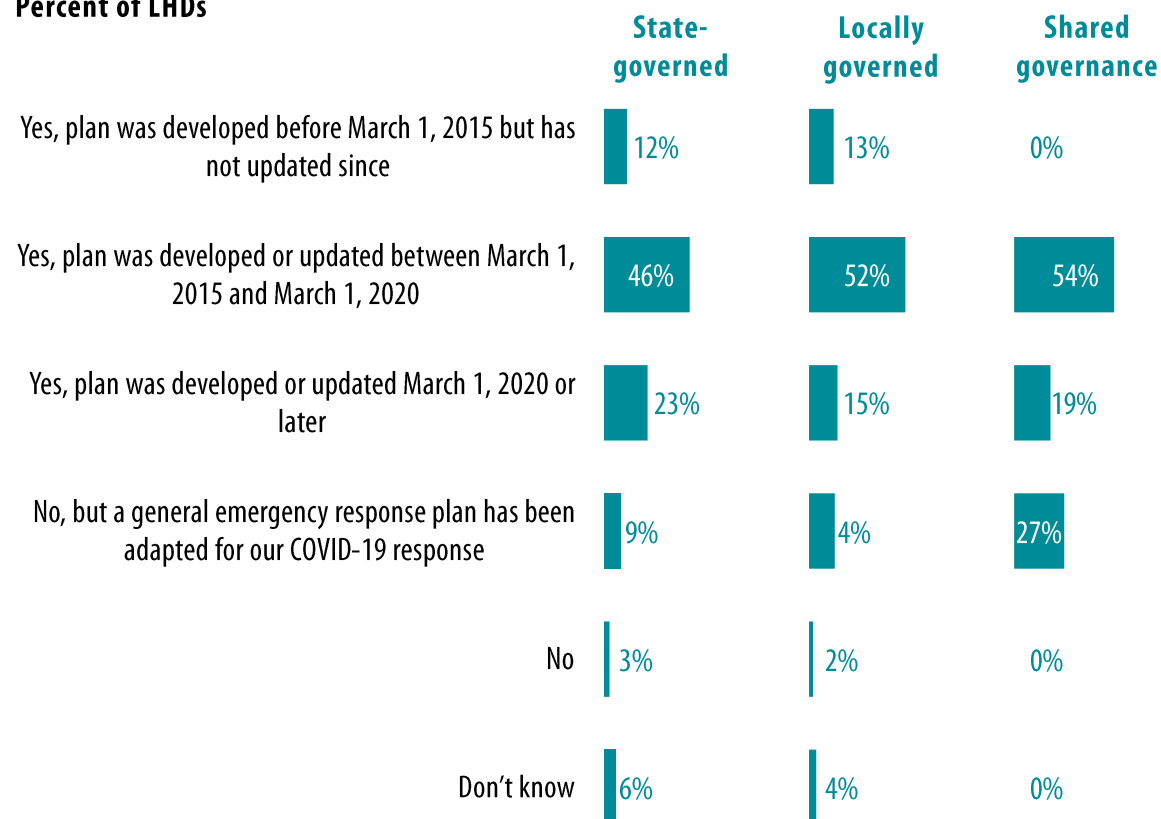
n=236

Most LHD jurisdictions have a pandemic response plan in place that was updated since 2015.

Notably, 13% of LHDs do not have a response plan specific to pandemics but adapted a more general plan for COVID-19.

Existence of jurisdictional pandemic response plan, by type of governance

Percent of LHDs



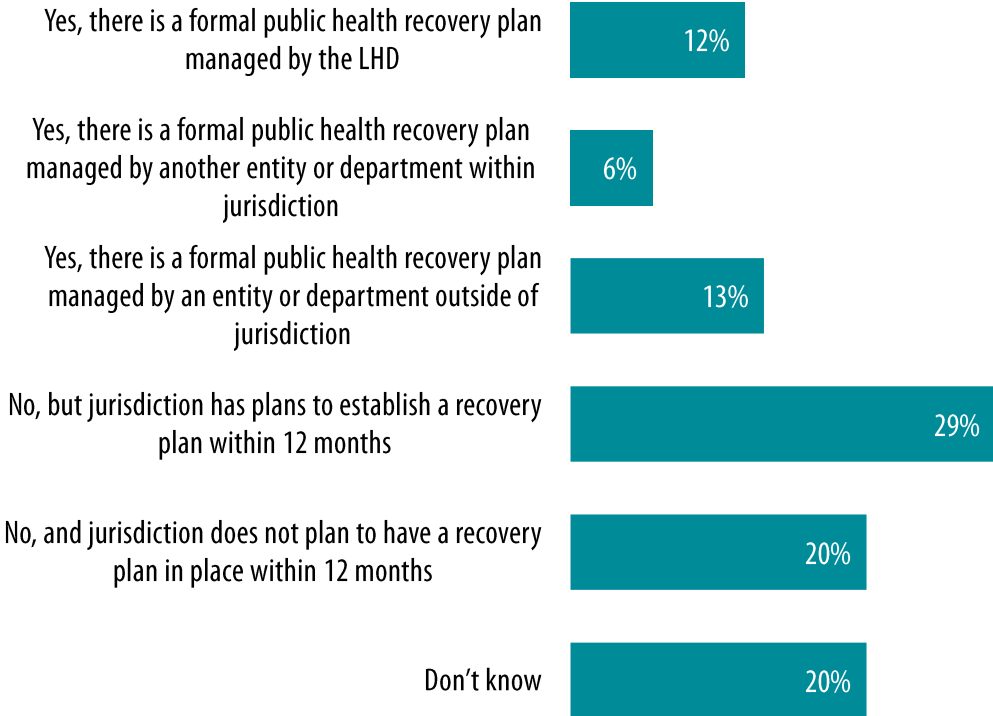
The existence of a pandemic response plan varies by type of governance. Specifically, state-governed LHDS are more likely to have an up-to-date plan compared to agencies with local or shared governance.

Meanwhile, LHDs with shared governance are most likely to have adapted a general response plan.

n=236

Existence of jurisdictional COVID-19 recovery plans

Percent of LHDs



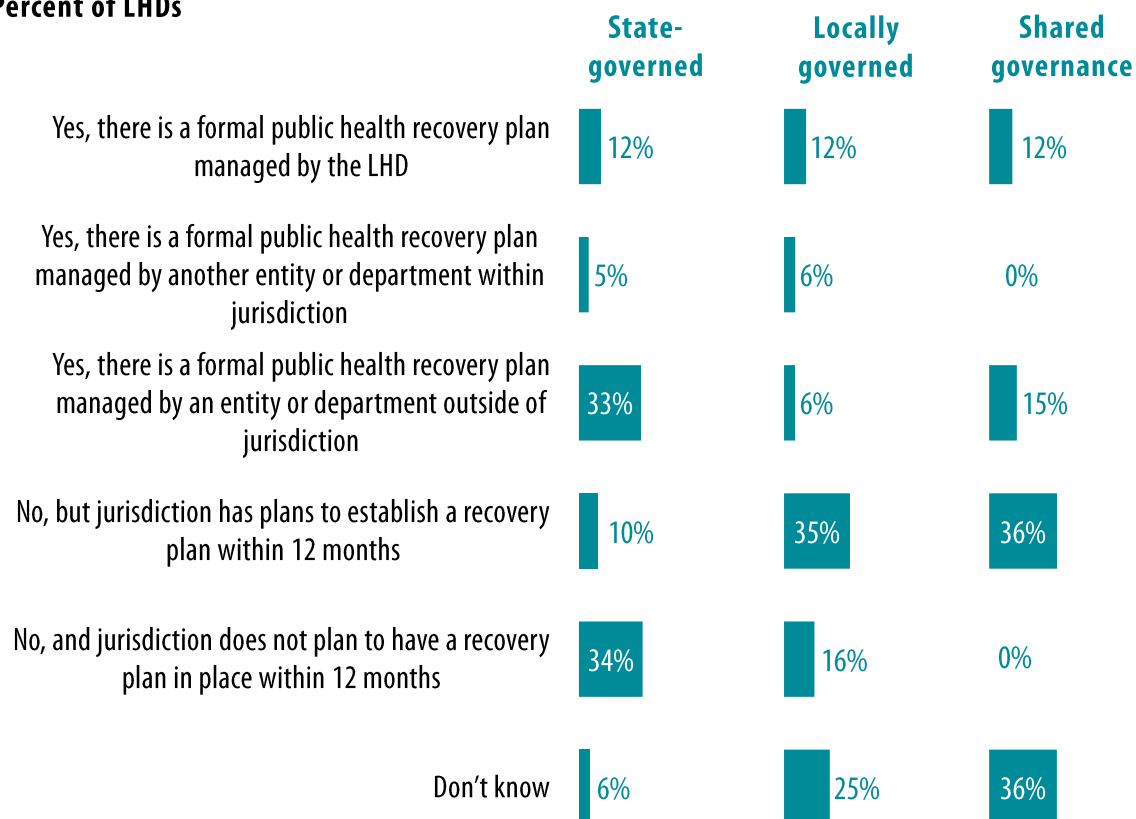
n=235

Most LHD jurisdictions did not have a public health community recovery plan in place by the end of 2020. However, 29% of LHDs were planning to establish one within the next year.

Among jurisdictions with a recovery plan in place, LHDs most commonly reported the plans included coordination between public health and other local and state governmental agencies, as well as an understanding of local public health's role in community recovery.

Existence of jurisdictional COVID-19 recovery plan, by type of governance

Percent of LHDs

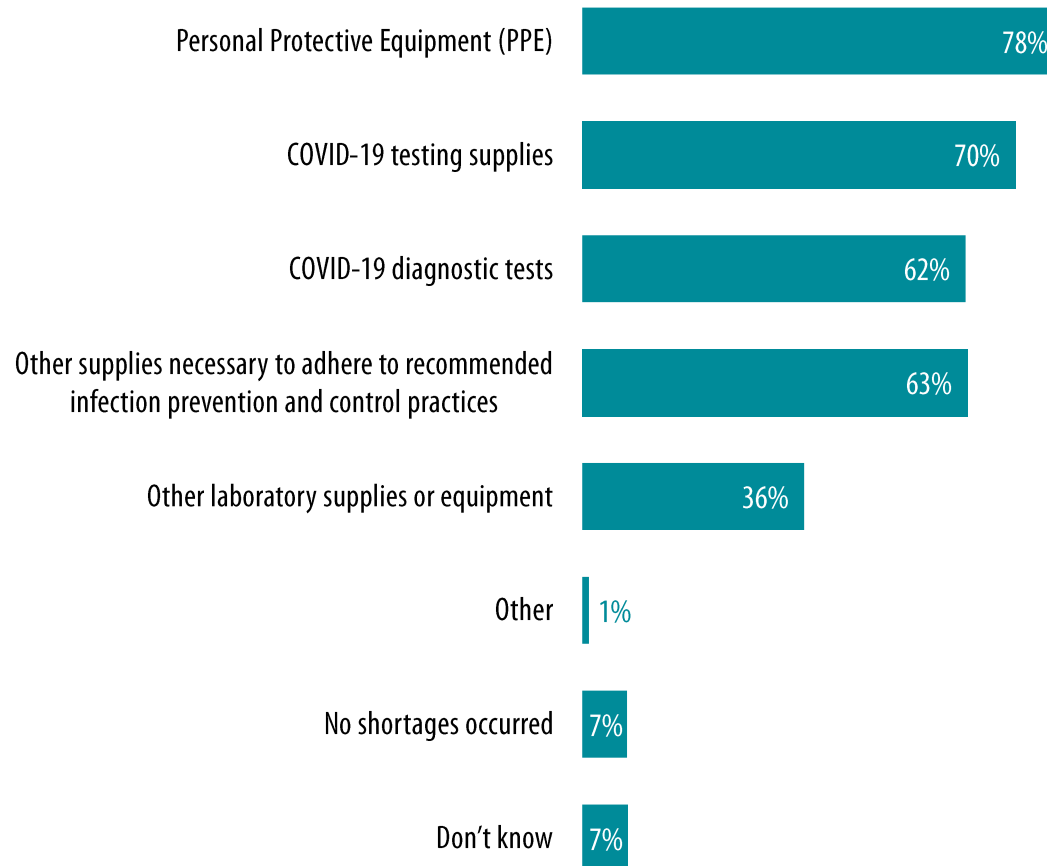


The existence of a public health community recovery plan varied by type of governance. In particular, LHDs with shared governance were much less likely to have a plan in place—with 60% of these agencies reporting no plan compared to less than half of state- and locally governed LHDs.

n=236

Supply shortages experienced by LHD, clinics, hospitals, retail outlets, and others in the jurisdiction

Percent of LHDs



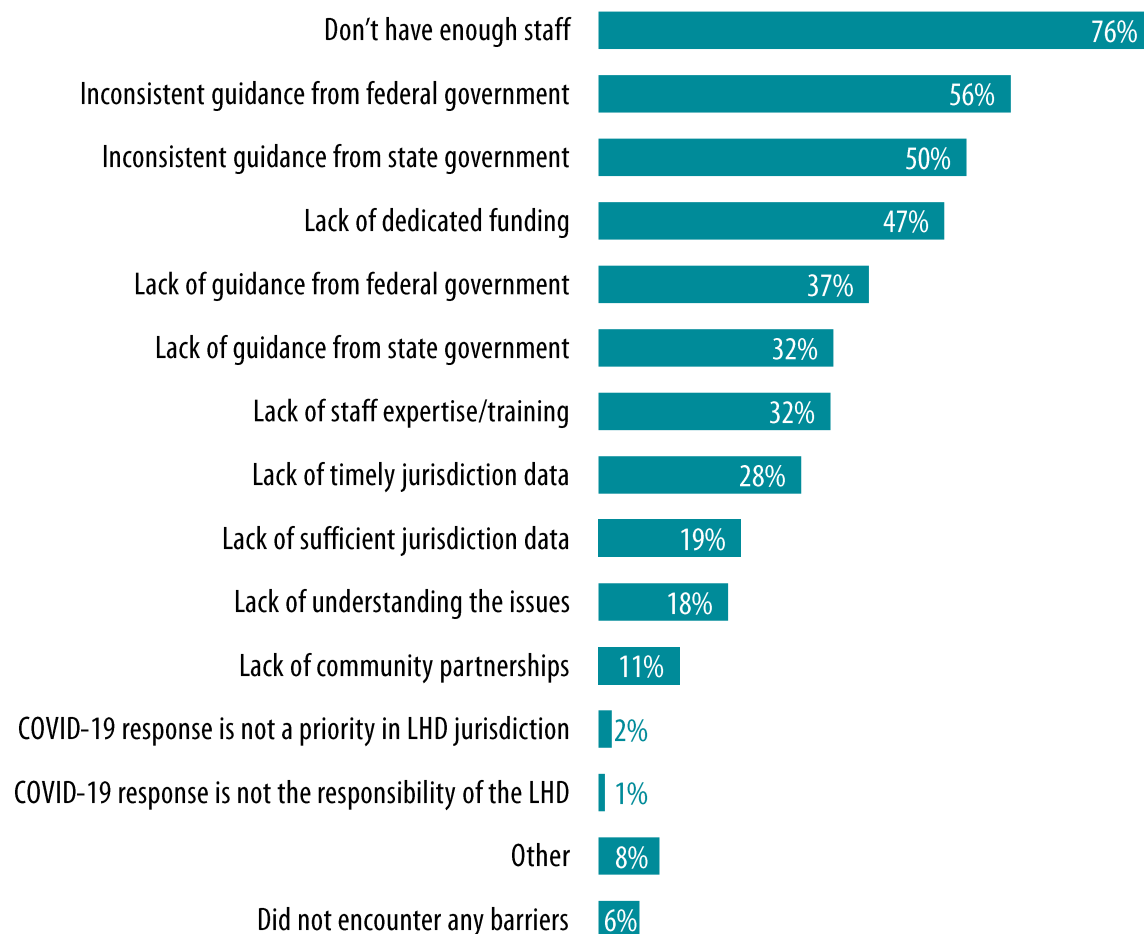
n=236

In 2020, more than 60% of LHDs experienced shortages of PPE and other supplies for infection prevention and control (e.g., disinfectants, hand sanitizer), as well as COVID-19 tests and testing supplies (e.g., nasal swabs).

Notably, only 7% of LHDs reported no shortages of supplies occurred.

Challenges hindering the effectiveness, scale or quality of LHD COVID-19 response

Percent of LHDs



n=236

The most commonly reported barrier to a robust response faced by LHDs was insufficient staffing capacity. Three in four LHDs reported not having enough staff to respond to COVID-19. In addition, more than half of LHDs reported inconsistent guidance from either the federal or state government was a challenge.

Notably, only 6% of LHDs responding to COVID-19 did not face any barriers.

06 Equity & Preparedness

Historically, LHDs play a key role in serving vulnerable populations and reducing health inequity, particularly during public health emergencies. Although COVID-19 is novel, the impact of emerging threats to vulnerable populations is not.

Throughout the pandemic, data has shown disparate health outcomes among certain vulnerable communities. [Older populations and those with chronic conditions were specifically at-risk for exposure to and impacts from COVID-19.](#) In addition, racial and ethnic minorities represented a greater proportion of COVID-19 diagnoses compared to non-Hispanic white individuals.

Although public health orders (e.g., stay-at-home orders, school closures) were necessary to mitigate community spread, they also had the potential to escalate certain public health issues. Amid fighting a pandemic and being taxed to their limits, LHDs were simultaneously combatting multiple epidemics related to mental health conditions, substance use, and chronic disease.

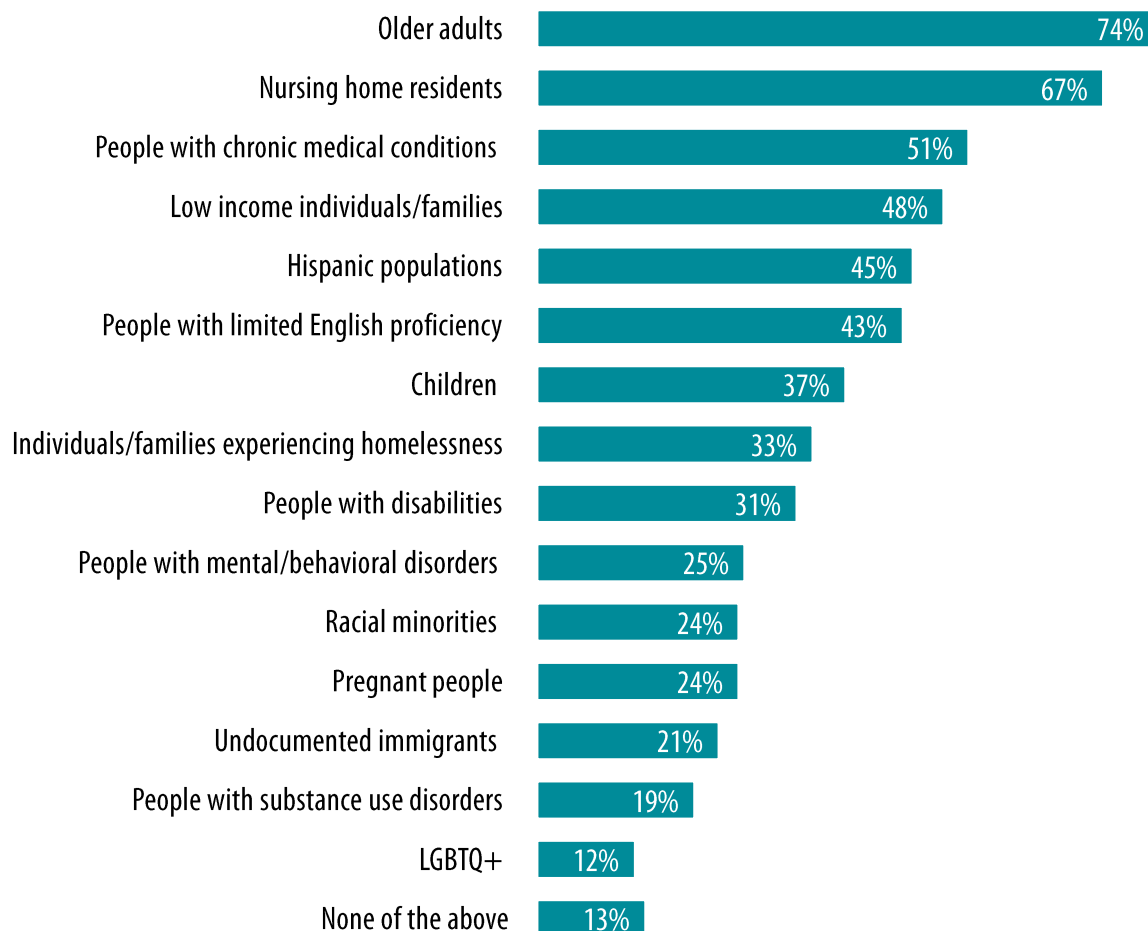
To address inequities, LHDs targeted messaging for high-risk populations, offered internal staff training specifically about protecting these populations from COVID-19, and developed targeted initiatives addressing issues exacerbated by the ongoing pandemic.

What's in this section?

- Populations addressed during public health emergencies
- Staff preparedness trainings to address populations
- Public health issues targeted during COVID-19

Populations prioritized for targeted, specific COVID-19 messaging

Percent of LHDs



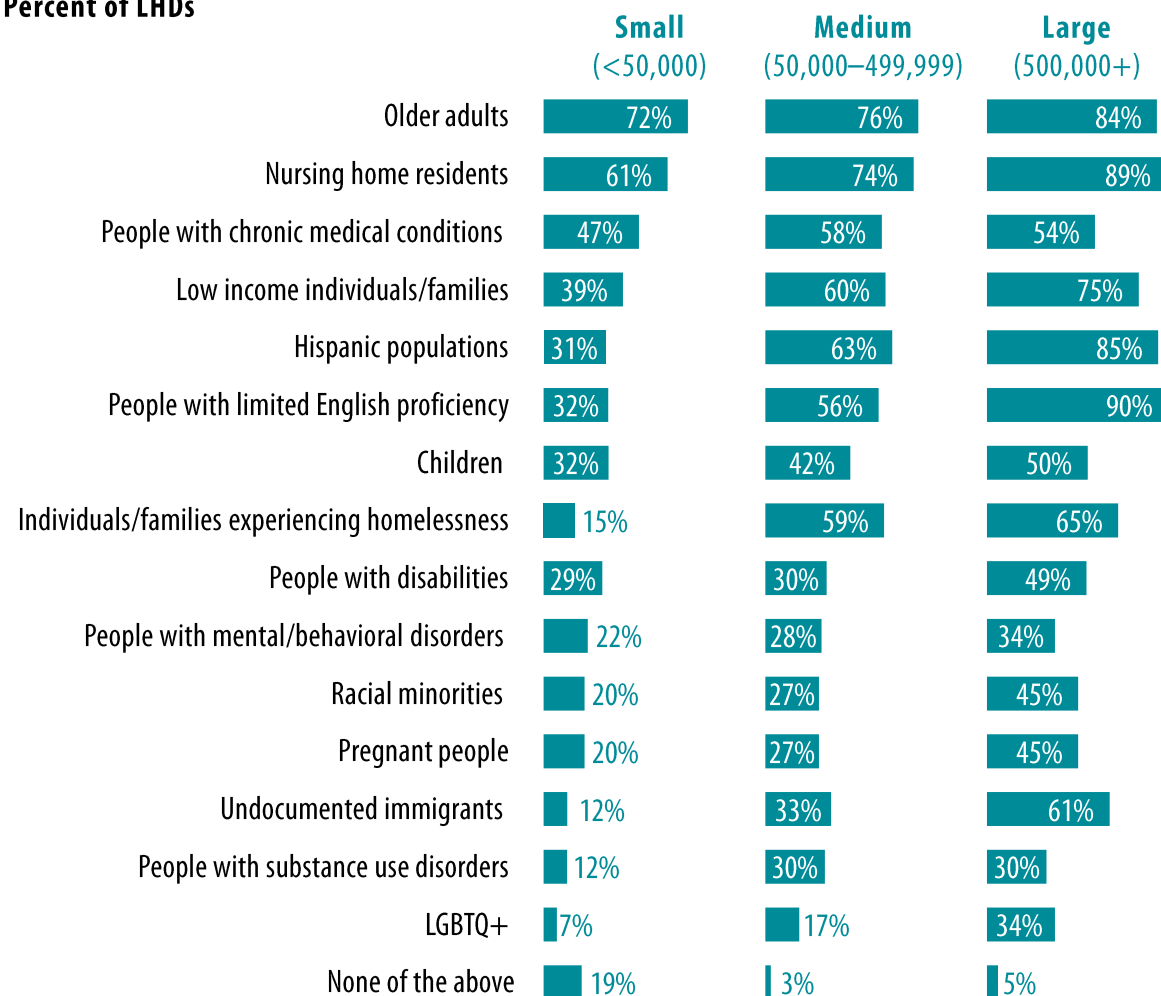
n=234

Nearly 90% of LHDs prioritized targeted, specific messaging for high-risk or vulnerable populations in COVID-19 response efforts. Most commonly, LHDs prioritized older adults, nursing home residents, and people with chronic medical conditions.

Fewer than one-fourth of LHDs prioritized COVID-19 messaging for racial minorities, pregnant people, undocumented immigrants, people with substance use disorders, and individuals identifying as LGBTQ+.

Populations prioritized for targeted, specific COVID-19 messaging, by population size served

Percent of LHDs



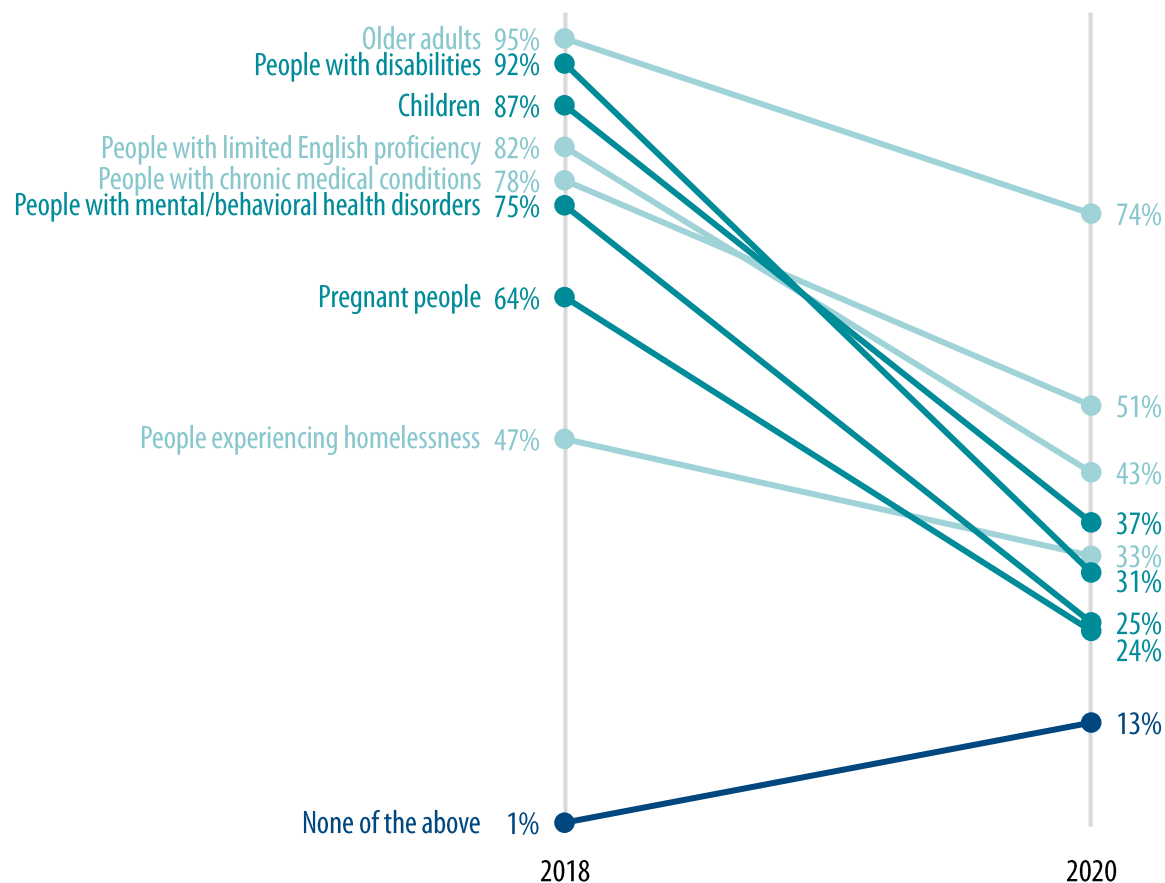
n=234

Populations prioritized by LHDs during COVID-19 response varied across jurisdiction sizes. In particular, large LHDs were more likely to target messaging to all population groups compared to small and medium LHDs—with the exception of people with chronic medical conditions.

Notably, nearly one-fifth of small LHDs did not prioritize targeted, specific messaging for high-risk or vulnerable populations in COVID-19 response efforts.

Populations addressed in public health emergency preparedness, over time

Percent of LHDs



n(2018)=378
n(2020)=234

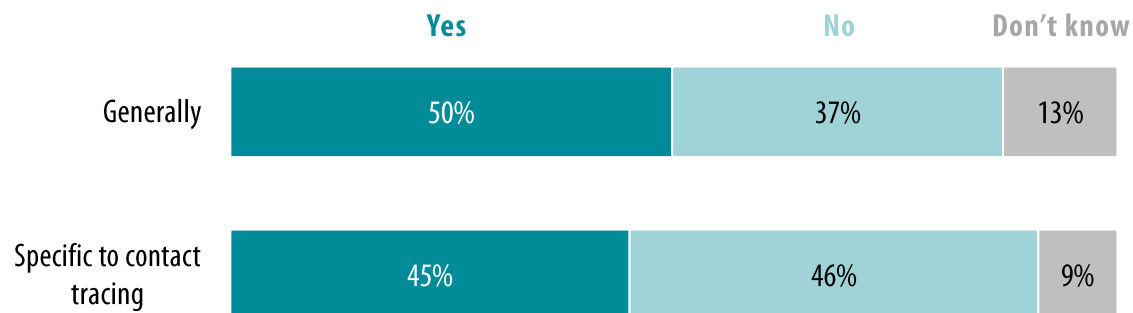
In the [2018 Preparedness Profile](#) survey, LHDs reported whether they addressed specific populations in preparedness planning efforts generally. Compared to 2018, LHDs were less likely to address priority populations during COVID-19. In particular, the largest decreases were seen for people with disabilities, children, people with mental/behavioral health disorders, and pregnant people.

The proportion of LHDs who did not specifically consider any high-risk or vulnerable populations in emergency preparedness activities increased 12 percentage points from 2018 to 2020.

Note: The sample for 2018 Preparedness Profile was different than for 2020 Forces of Change, which may have affected survey responses, as 2020 was specifically about COVID-19, and 2018 was more generally about "public health emergencies."

Staff training/education to protect high-risk populations from COVID-19

Percent of LHDs



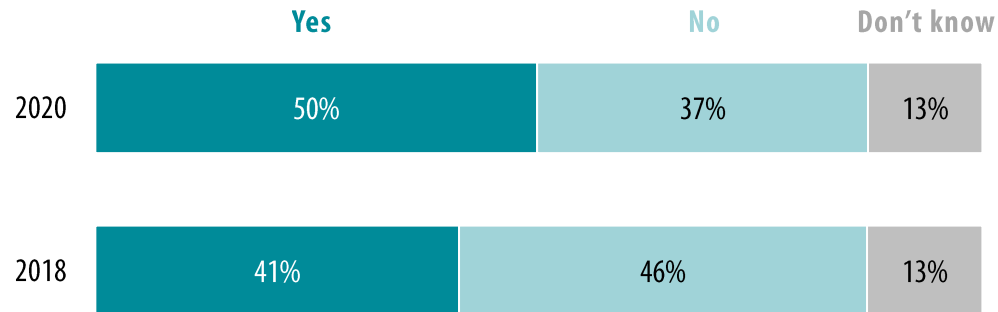
n(generally)=237
n(contact tracing)=235

Half of LHDs offered internal training or education to staff specific to protecting high-risk or vulnerable populations from COVID-19.

In addition, 45% offered training or education on working with these populations during contact tracing for COVID-19 surveillance. The most common barriers to addressing inequities during contact tracing that LHDs faced were low trust of staff among vulnerable populations and limited language competency among staff.

General staff training/education to protect high-risk populations during public health emergencies, over time

Percent of LHDs



n(2020)=237
n(2018)=376

The proportion of LHDs offering staff training to protect vulnerable populations during public health emergencies increased between 2018 and 2020. In the [2018 Preparedness Profile](#) survey, 41% of LHDs reported offering specific training and education compared to 50% reporting this specifically for the COVID-19 pandemic in 2020.

General staff training/education to protect high-risk populations from COVID-19, by population size served

Percent of LHDs



Size of population served

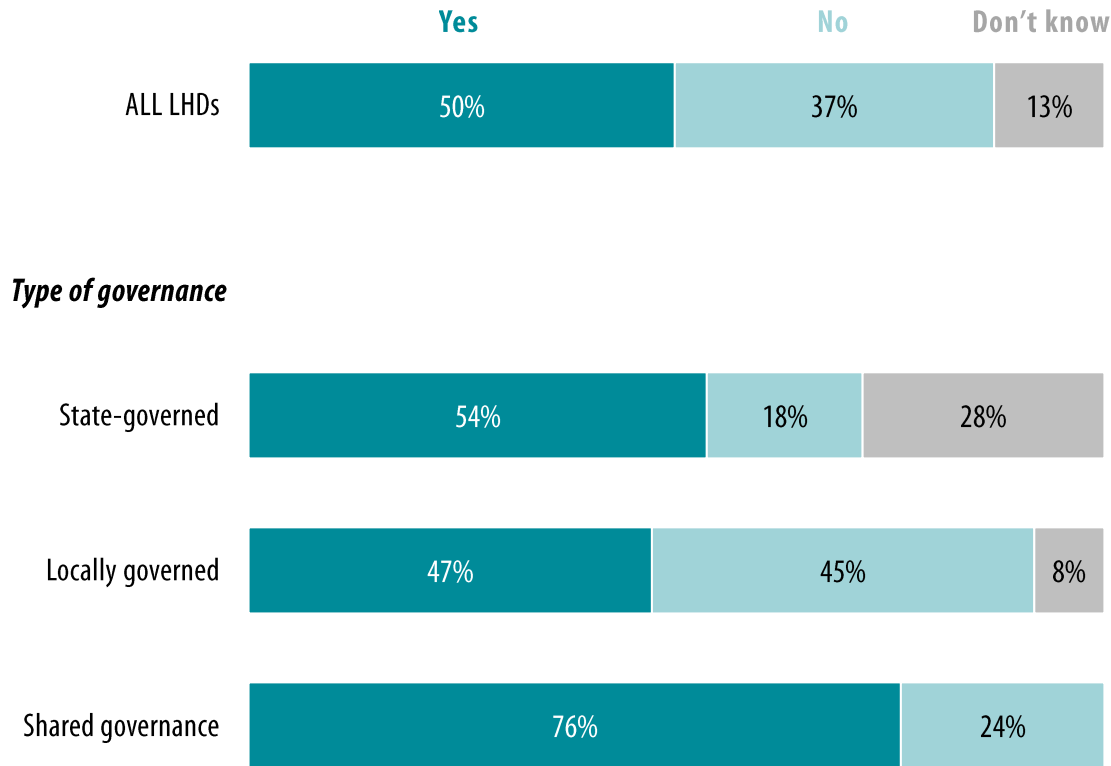


The provision of staff training specifically to address inequities among high-risk populations varied by size of population served. In particular, medium LHDs were more likely to offer this training compared to small and large LHDs.

n=237

General staff training/education to protect high-risk populations from COVID-19, by type of governance

Percent of LHDs

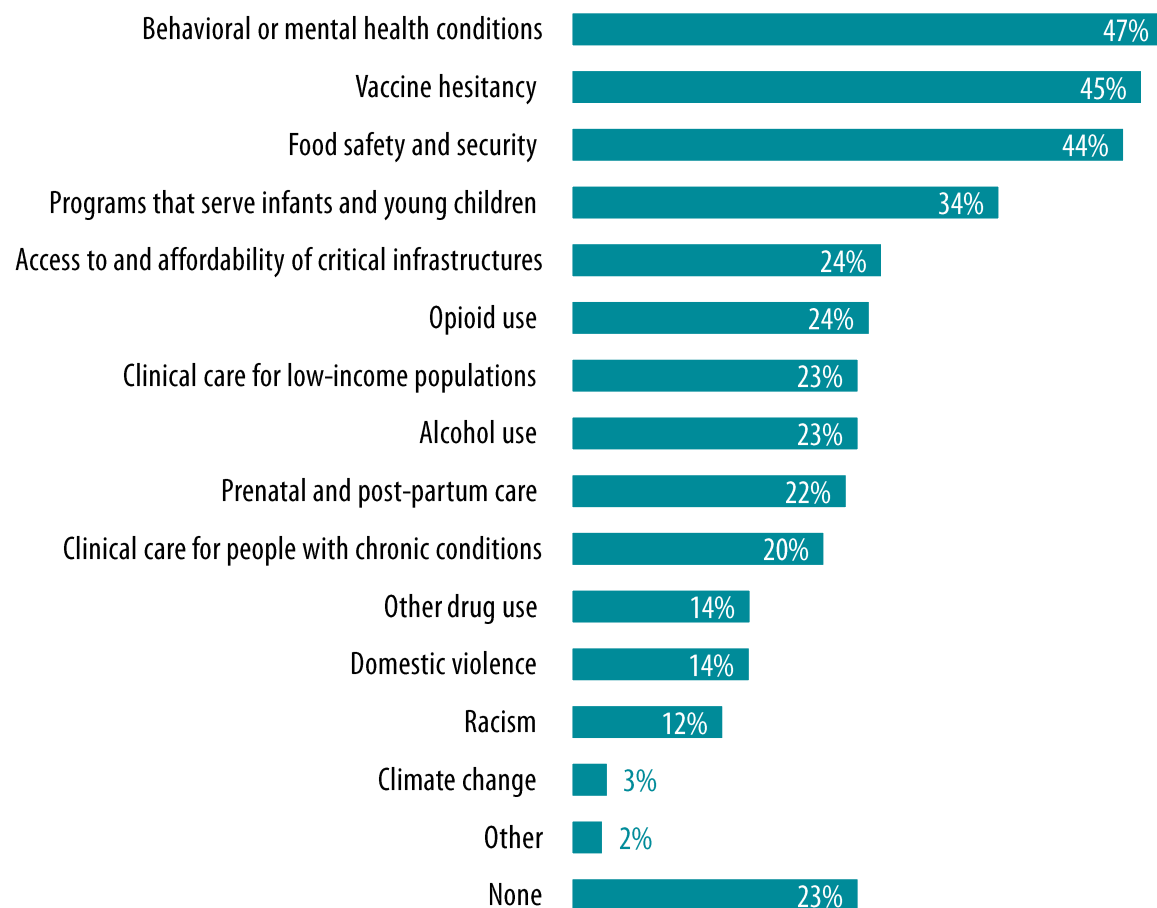


When comparing across type of governance, LHDs with shared governance were much more likely than others to offer staff training specifically to protecting high-risk or vulnerable populations from COVID-19.

n=237

Issues prioritized or addressed via targeted initiatives during COVID-19

Percent of LHDs

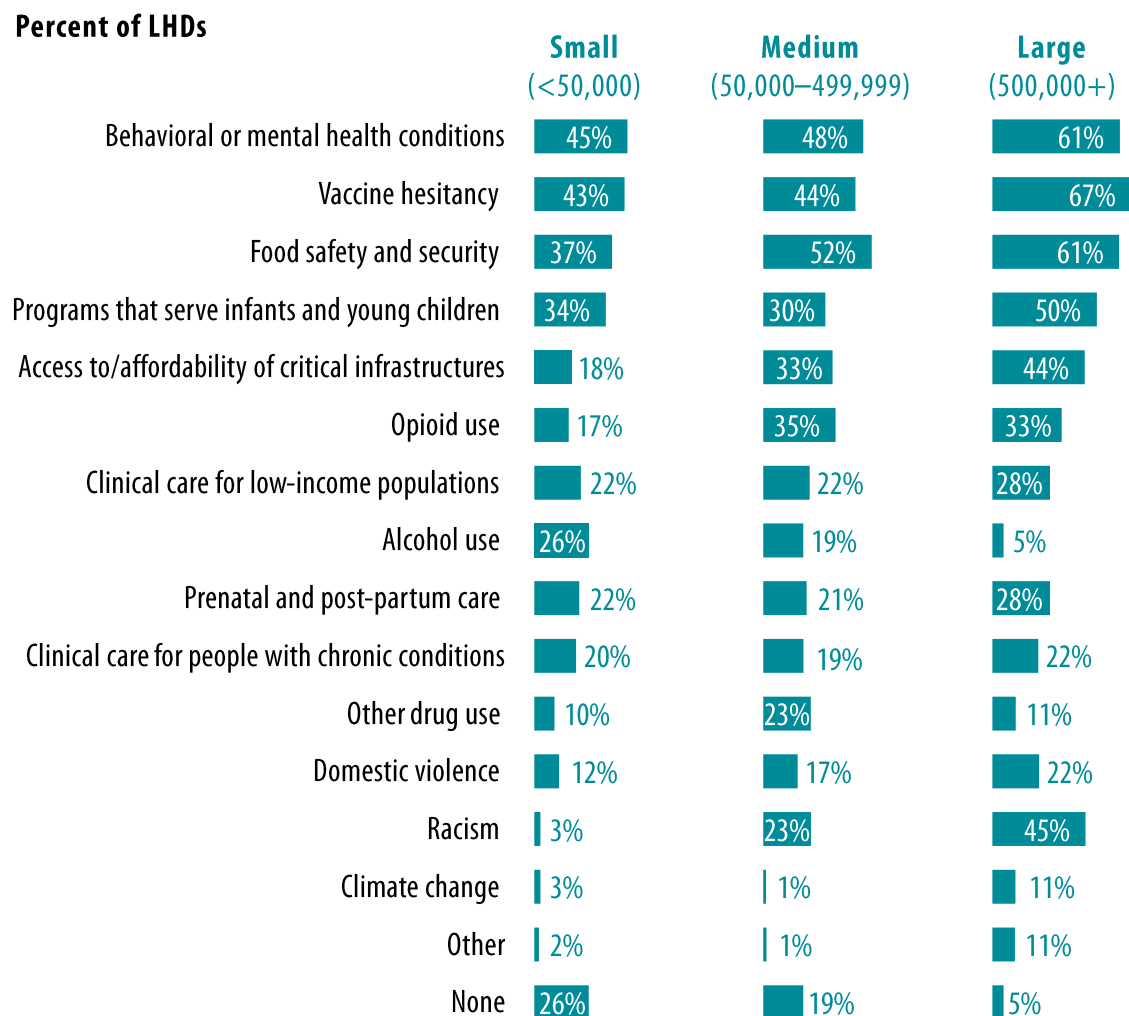


n=225

More than three in four LHDs developed targeted initiatives to address public health issues exacerbated by the pandemic. Specifically, nearly half prioritized behavioral/mental health conditions (e.g., anxiety) or vaccine hesitancy.

Fewer than 20% of LHDs addressed domestic violence, racism, or climate change in targeted initiatives during the pandemic.

Issues prioritized or addressed via targeted initiatives during COVID-19, by population size served



n=225

Overall, large LHDs were more likely to prioritize public health issues exacerbated by the pandemic compared to small and medium LHDs—with the exception of alcohol use. Approximately one in four small LHDs developed targeted initiatives to address alcohol use during COVID-19, compared to only 5% of large LHDs.

In particular, nearly half of large LHDs prioritized initiatives addressing racism during COVID-19, while less than 25% of medium and small agencies reported the same.

07 Information Technology

LHDs use a variety of surveillance systems that collect, analyze, and interpret health-related data for the planning, implementation, and evaluation of public health programs. Some of these include contact tracing, case notification systems, syndromic surveillance, and other hospital-based data.

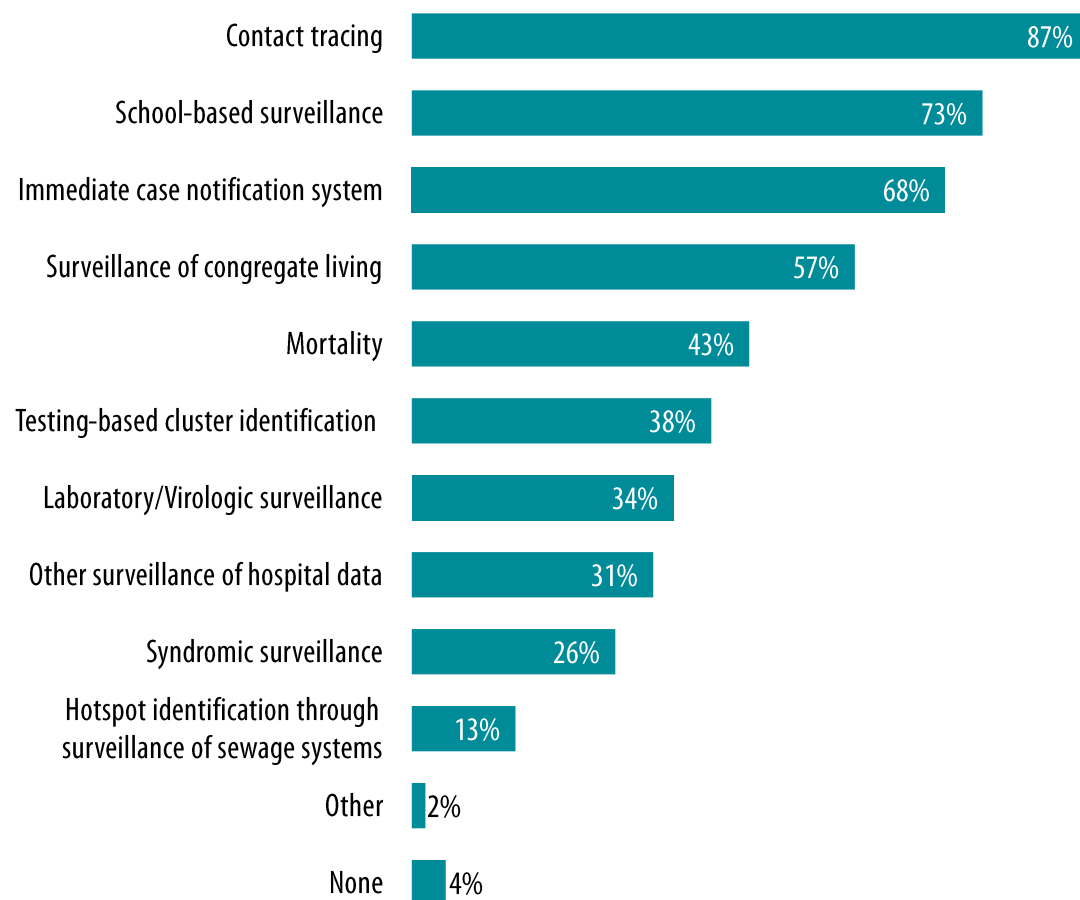
However, lack of interoperability between systems is a barrier to the effective surveillance and reporting of COVID-19 cases. The onset of the pandemic necessitated rapid surveillance and an improved ability for surveillance systems to automatically exchange data and present that data such that it can be understood by a user.

What's in this section?

- Surveillance conducted for COVID-19
- Interoperability of LHD information systems over time

Types of surveillance conducted specifically for COVID-19

Percent of LHDs



n=236

Nearly all LHDs conducted some type of surveillance specifically for COVID-19. The most common type was contact tracing. In addition, more than half of LHDs conducted school-based surveillance, immediate case notification system, and surveillance of congregate living.

Although not shown, 86% of LHDs used a state disease surveillance system to collect, manage, or share COVID-19 health information. In addition, 40% used Microsoft Excel and 20% used a local system.

Types of surveillance conducted specifically for COVID-19, by Census region

Percent of LHDs

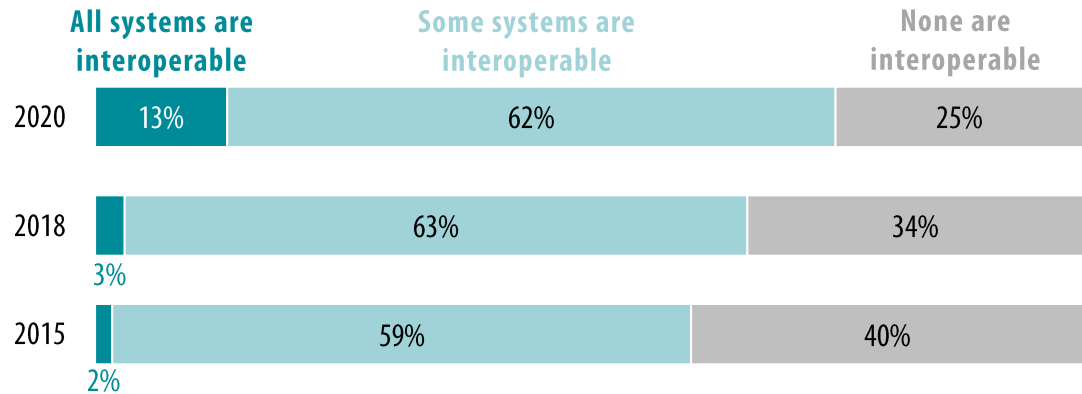
	Northeast	Midwest	South	West
Contact tracing	93%	90%	76%	100%
School-based surveillance	66%	83%	67%	71%
Immediate case notification system	77%	64%	66%	74%
Surveillance of congregate living	45%	65%	56%	52%
Mortality	32%	51%	38%	51%
Testing-based cluster identification	35%	32%	41%	57%
Laboratory/Virologic surveillance	18%	34%	40%	40%
Other surveillance of hospital data	22%	28%	33%	49%
Syndromic surveillance	18%	26%	29%	30%
Hotspot identification through surveillance of sewage systems	11%	15%	10%	22%
Other	2%	2%	0%	4%
None	5%	1%	9%	0%

The type of surveillance conducted for COVID-19 varied by Census region. Notably, LHDs in the West were most likely to use testing-based cluster identification, while those in the Midwest were most likely to conduct school-based surveillance and surveillance of congregate living.

n=236

Interoperability of information systems, over time

Percent of LHDs



n(2020)=517
 n(2018)=551
 n(2015)=238

LHDs were more likely to report system interoperability during COVID-19 than in 2018. In the [2018 Forces of Change](#) survey, only 3% of LHDs reported all their systems were interoperable, while the [2015 Informatics Capacity and Needs Assessment](#) survey showed 2% of LHDs with fully interoperable systems. In 2020, 13% reported this—a 10 percentage point increase.

08 Interagency Alignment & Partnerships

The COVID-19 pandemic underscores the importance of public health partnerships with critical infrastructure sectors, including local emergency management, schools, hospitals, nursing homes, and public sewer and water systems. Alignment between public health and these partners supports surveillance and mitigation activities. For example, LHDs partnered with organizations to update case and death data related to COVID-19.

In addition, they worked together to coordinate communication with the public. Many LHDs shared information with the public daily related to the need for social distancing, case and death data, the need for handwashing, and COVID-19 symptoms. However, LHDs faced a variety of barriers to effective communication with the public, including the ability to develop timely and/or actionable messaging.

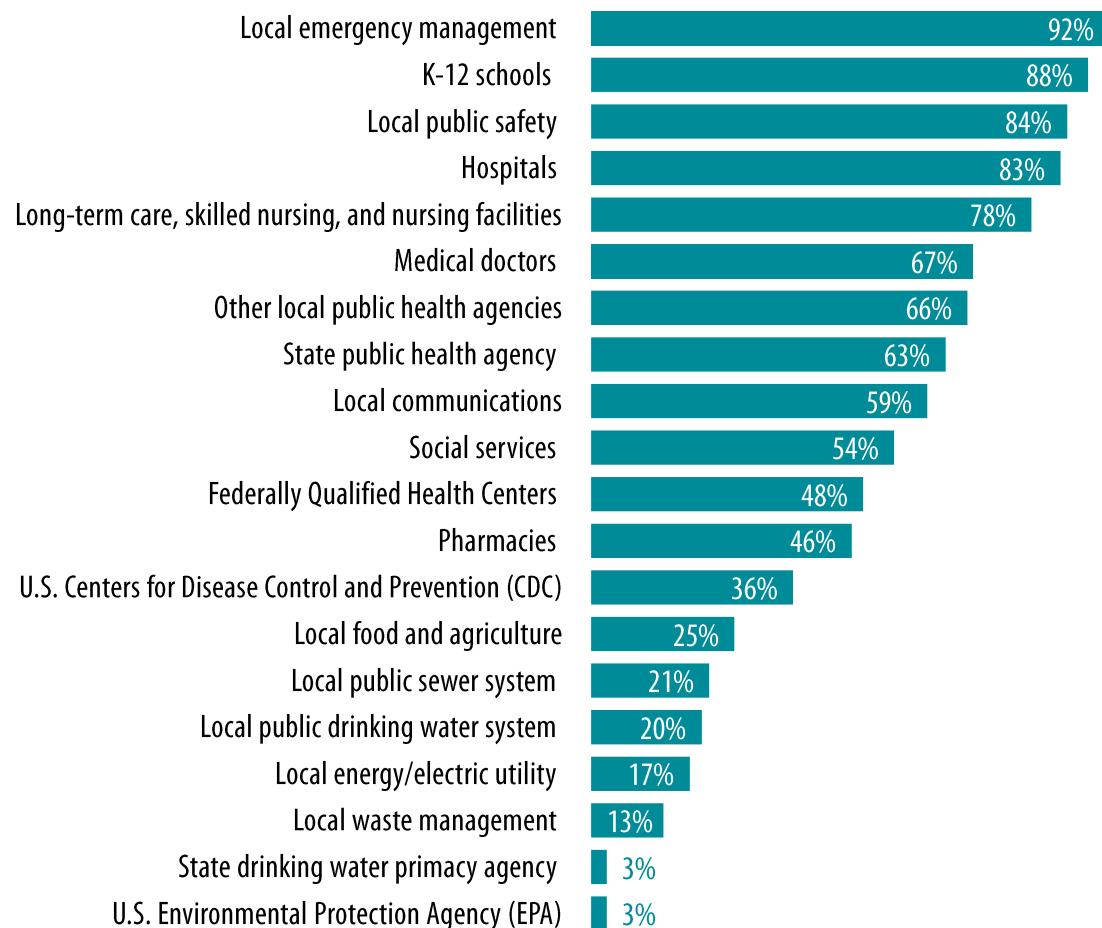
NACCHO would like to acknowledge the following contributors to this section of the survey from [Wayne State University's Water and Health Infrastructure, Resilience, and Learning \(WHIRL\) Program](#): Shawn McElmurry, PhD, P.E.; Kristin Taylor, PhD; Allison Laskey, PhD; Sara Schwetschenau, PhD; Richard J. Smith, MFA, MSW, PhD; Joanne Sobeck, MSW, PhD; Paul Kilgore, MPH, MD; Karine Ibrahim, MA; Khairul Islam, MA, MS; Ronisha Sheppard; and Matthew Seeger, PhD.

What's in this section?

- Critical infrastructure sectors partnering with LHDs
- Frequency of LHD coordination with public health partners during COVID-19
- Frequency of LHD communication with the public during COVID-19 and related challenges

Organizations and critical infrastructure sectors with which LHDs interacted during COVID-19

Percent of LHDs



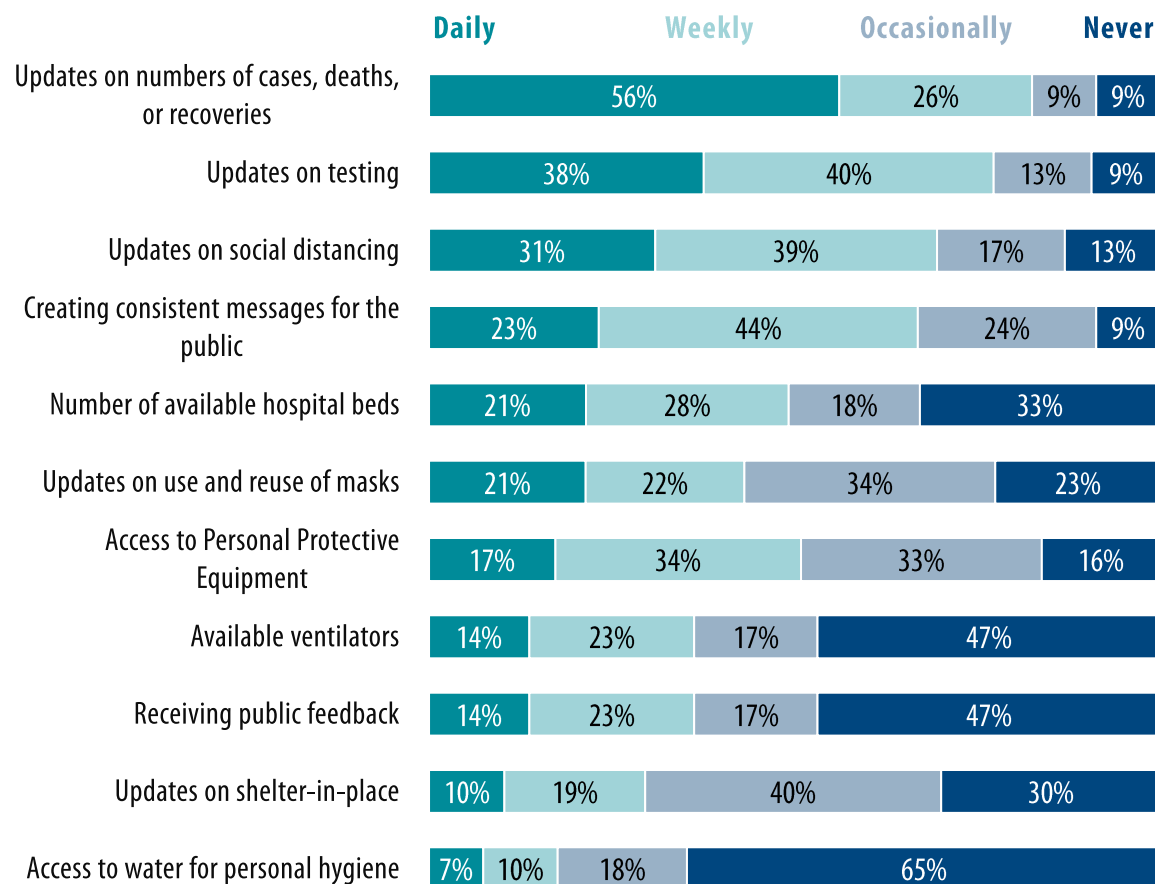
More than 75% of LHDs interacted with local emergency management, K-12 schools, local public safety, hospitals, and long-term care/nursing facilities during their response. These interactions included exchanging data, joint training, conducting preparedness activities, sharing personnel, and planning for recovery.

Notably, less than 20% of LHDs partnered with their local energy/electric utility or waste management sectors during COVID-19. Only 3% interacted with state drinking water agencies or the EPA.

n=228

Frequency of LHD coordination with public health partners during COVID-19

Percent of LHDs



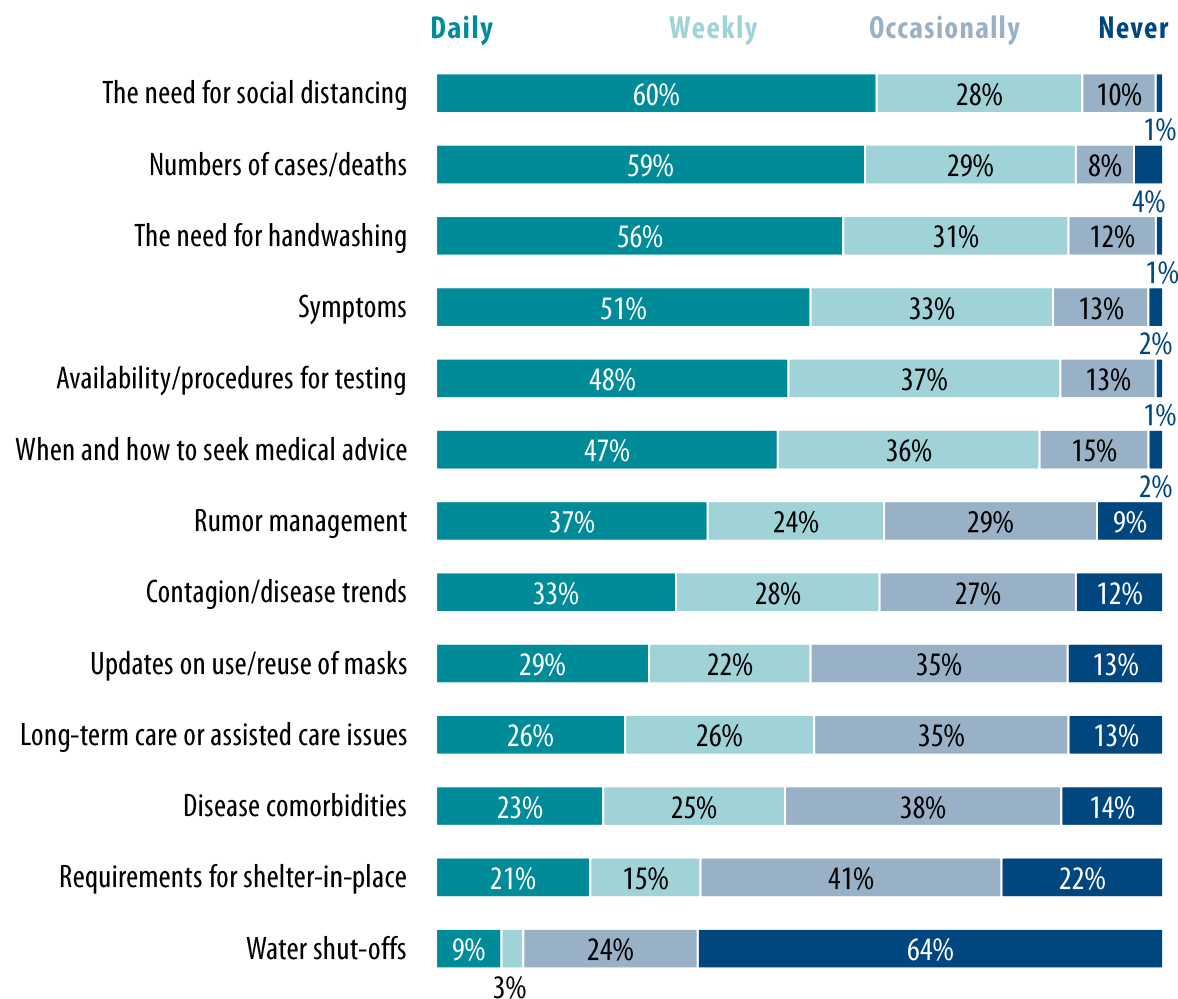
n=227

Many LHDs coordinated with partners to respond to COVID-19. More than half interacted daily to share updates on COVID-19 case and death data, while more than 30% shared updates on testing or social distancing.

Notably, at least 47% of LHDs never interacted with health partners to discuss available ventilators, receive public feedback, or coordinate access to water for personal hygiene.

Frequency of LHD communication with the public during COVID-19

Percent of LHDs



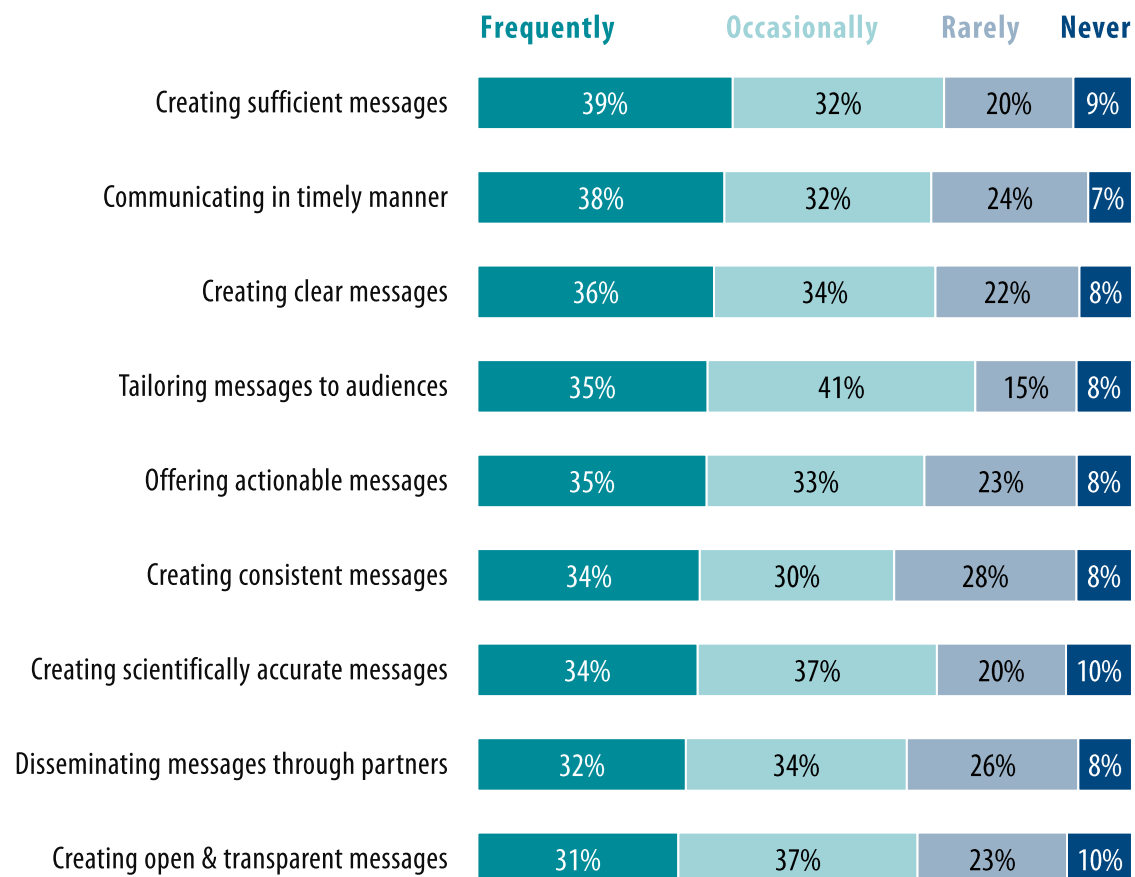
n=216

During the pandemic, more than half of LHDs communicated with the public daily to inform about personal safety/hygiene, case and death rates, or COVID-19 symptoms.

The least common topic for public messaging during COVID-19 was water shut-offs—with 64% of LHDs never communicating about this issue.

Frequency of challenges to COVID-19 public communication experienced by LHDs

Percent of LHDs



LHDs experienced a wide range of challenges to communicating with the public during the pandemic. In particular, 76% of LHDs often faced barriers to tailoring messages to specific audiences. Meanwhile, 71% often had limited ability to create scientifically accurate messages.

n=214



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The mission of the National Association of County and City Health Officials (NACCHO) is to improve the health of communities by strengthening and advocating for local health departments.

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