ISSUE REPORT

The Impact of Chronic Underfunding on America's Public Health System:

Trends, Risks, and Recommendations, 2022

Trust for America's Health
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Acknowledgements

Trust for America's Health (TFAH) is a nonprofit, nonpartisan public health policy, research, and advocacy organization that promotes optimal health for every person and community, and makes the prevention of illness and injury a national priority.

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Executive Summary

Public health funding has not kept pace with public health needs. Trust for America's Health (TFAH) has joined numerous leaders within the public health community in calling for an annual $4.5 billion investment in public health infrastructure at the state, local, tribal, and territorial levels.

As the world grapples with the third year of addressing the challenges of the COVID-19 pandemic, it is clear that while a number of factors—including misinformation, political division, and health inequities—caused the tragic impact of the pandemic, underfunding of the public health system was also a large contributor.

As the pandemic has illustrated, chronic underfunding of public health at both the federal and state levels has left the country ill-prepared for public health emergencies and impedes prevention of many of the major causes of illness and death in the United States. Today, the public health infrastructure relies on antiquated data systems, understaffed departments, insufficient plans, and inadequate supplies of the medical countermeasures needed during an infectious disease outbreak or some other public health emergency.

Investments in public health are needed everywhere, particularly for people living in those communities—estimated to be about half of all U.S. residents—not currently protected by a comprehensive public health system.[1] As Americans navigate the next stages of the pandemic and beyond, it is critical that the nation invest in modernizing the public health data infrastructure, grow and further diversify the public health workforce, reduce health inequities, and address the social determinants of health (SDOH) that can either drive or limit a person's ability to attain good health.

Underinvestment in health equity and SDOH contributes to high rates of chronic disease, which left certain population groups—including many communities of color, rural communities, and older adults—more vulnerable to severe health outcomes during the pandemic.[2] The incidence of chronic diseases, including obesity, diabetes, and heart disease, has increased in many communities, in part due to health departments that lack the required resources to deliver prevention programs or that have cut programs for obesity and diabetes prevention altogether. At the national level, the country spent $4.1 trillion on health in 2020, but only 5.4 percent of that spending targeted public health and prevention. Notably, this share nearly doubled in 2020 (from 2.8 percent in 2019) due to significant infusions of short-term, emergency funding to respond to the pandemic.[3,4] However, if history holds true, these infusions of emergency response dollars are an anomaly and public health funding will again return to insufficient levels. This is a pattern that must change.

For over two decades, this report has tracked public health funding at federal, state, and local levels and has recommended policy actions to improve Americans' health security. During that time, TFAH has documented a chronic pattern of underfunding of vital public health programs and protections. Investments in public health that if made can be leveraged during an emergency. The COVID-19 pandemic has made that underfunding and its deadly consequences abundantly clear, but infectious disease outbreaks are not the only risk. For instance, over the past two years, many parts of the country experienced record-setting heat waves, wildfires, storms, and flooding,[5] and the nation saw historic increases in alcohol, drug, and suicide deaths,[6] all of which taxed a public health system already severely stressed by the pandemic. Often, in order to respond to the pandemic, health departments had to pull staff and resources away from other critical work, including work focused on chronic disease prevention, childhood vaccinations, tobacco prevention and cessation programs, maternal and child health programs, HIV prevention, and behavioral health.

Mixed picture for recent funding

The past two years have presented dual realities for health agencies. While there were significant increases in funding during the year, in general those increases were onetime COVID-19-specific appropriations and therefore could not be used to correct structural and long-standing funding deficiencies. Within the sphere of standing program budgets, there were both marginal increases and decreases, albeit with larger-than-usual topline increases in fiscal year (FY) 2022. Federal agencies received several infusions of discrete funding to fight the COVID-19 pandemic, much of it redistributed to states (and their localities) and territories. However, in general, states and localities could not use this funding to shore up longstanding weaknesses in public health infrastructure, preparedness, and disease-prevention programs, as the funding was directed to immediate pandemic response only. Moreover, these emergency appropriations—while important—are inherently too late to bolster preparedness and prevention efforts. To address threats like COVID-19, the nation needs to sustain higher funding on a year-to-year basis and to invest in planning, workforce, and infrastructure for years before a crisis occurs. Failing to do so is akin to hiring firefighters and purchasing hoses and protective equipment amid a five-alarm fire.

Federal Funding

As the country's leading public health agency and a primary source of funding for state, local, tribal, and territorial health departments, the Centers for Disease Control and Prevention (CDC) is at the forefront of this preparatory work. However, the agency's historically underfunded budget has not kept pace over the past decade with the nation's growing public health needs and emerging threats. The CDC's FY 2022 budget, which does not account for onetime infusions of money from pandemic-relief laws, is $8.4 billion, reflecting a $602 million year-over-year increase.[7]

A serious mismatch remains between documented public health needs and funding levels, as some successful prevention programs lack funding to reach all states. For example, funding to fight obesity has remained virtually flat for years, even as obesity rates continue to increase.

The CDC's budget rose by 11 percent over the past decade (FY 2013–2022), after adjusting for inflation. However, this increase was not evenly distributed across the agency and its programs. A serious mismatch remains between documented public health needs and funding levels, as some successful prevention programs lack funding to reach all states. For example, funding to fight obesity has remained virtually flat for years, even as obesity rates continue to increase, leaving only enough money to support 16 states as they combat one of the leading drivers of health costs.[8]

The CDC's annual funding for public health preparedness and response, which includes Public Health Emergency Preparedness (PHEP) programs in states, territories, and local areas increased slightly between FY 2021 and FY 2022, from $840 million to $862 million.[9] However, Congress has cut PHEP funding by just over one-fifth since FY 2002, or about half, after adjusting for inflation.

In response to the pandemic, the CDC received several tranches of supplemental money since March 2020. However, these short-term funds were not sufficient to bridge gaps created by the erosion of critical preparedness funds. [10]

- **The Hospital Preparedness Program**—administered by the U.S. Department of Health and Human Services' Office of the Assistant Secretary for Preparedness and Response—is the primary source of federal funding to help healthcare systems prepare for emergencies, such as natural disasters and the COVID-19 pandemic. Its budget was $515 million in FY 2003 and just $296 million in FY 2022—a nearly two-thirds cut, after adjusting for inflation.

- **The Prevention and Public Health Fund**, originally designed to expand and sustain the nation's investment in public health and prevention, remains at about half the funding level Congress should have provided in FY 2022, due to the redirection of monies to other programs and legislation.[11]

Three other federal agencies with significant public health responsibilities, the Substance Abuse and Mental Health Services Administration, the Health Resources and Services Administration, and the Food and Drug Administration all also saw modest operating gains for FY 2022.

State Funding

At the state level, most states (at least 30 states and the District of Columbia) maintained or increased their funding for public health during the 2021 fiscal year, while at least 15 reduced that funding.[12, 13] These data were collected by TFAH for its annual *Ready or Not: Protecting the Public's Health from Diseases, Disasters, and Bioterrorism* report. Five states did not report their funding data.[14] State health agencies play a key role in promoting public health and supporting local health departments. They directly engage in population-based primary, secondary, and tertiary prevention, developing preparedness plans, coordinating emergency responses, and conducting lab testing, disease surveillance, and data collection.

All states received pandemic response funding, but while those recovery funds were critical to state-level response programs, they were onetime funds that will not provide the sustained support necessary to build the nation's public health infrastructure.

Why Invest in Public Health?

The United States spends trillions of dollars annually on healthcare, but U.S. residents are not getting healthier and tend to experience worse health outcomes than residents of other high-income countries that spend comparably less money.[15,16]

One reason is America's lack of investment in programs to prevent illness. Nearly half of all U.S. residents ages 55 or older have two or more chronic health conditions.[17] Yet funding for CDC's chronic disease prevention programs remains inadequate, as most funding lines do not receive enough funding to reach all states. In addition, lack of attention to and investment in the SDOH—factors such as where people are born, live, work, and age as well as their access to safe housing, jobs, quality education, and healthcare—exacerbate health inequities and increase the costs associated with treating preventable illness. For example, there is strong evidence that public health programs focused on disease prevention and improving community health, including childhood vaccination and tobacco-cessation programs, can reduce these costs.[18,19] Increased funding for public health programs is an investment in less healthcare spending.

What are the core capabilities of a robust public health system?

Keeping U.S. residents safe from diseases, disasters, the health impacts of climate change, and bioterrorism requires a public health system focused on prevention, equity, preparedness, and surveillance. Investment to ensure foundational capabilities is key. Interagency and jurisdictional planning and cooperation are also critical, as are efforts to address the needs of population groups or communities at greatest risk.

All of these activities require dedicated and sustained funding and a well-resourced public health infrastructure, one that has the resources to deal with its everyday work and that is well-positioned to quickly pivot and scale up during emergencies. A robust public health system is one that provides the following essential public health services:[20]

- Assess and monitor population health status, factors that influence health, and community needs and assets.
- Investigate, diagnose, and address health problems and hazards affecting the population.
- Communicate effectively to inform and educate people about health, factors that influence it, and how to improve it.
- Strengthen, support, and mobilize communities and partnerships to improve health.
- Create, champion, and implement policies, plans, and laws that impact health.
- Utilize legal and regulatory actions designed to improve and protect the public's health.

- Assure an effective system that enables equitable access to the individual services and care needed to be healthy.
- Build and support a diverse and skilled public health workforce.
- Improve and innovate public health functions through ongoing evaluation, research, and continuous quality improvement.
- Build and maintain a strong organizational infrastructure for public health.

In addition, to advance equity, successful systems promote structural conditions that support optimal health for all and work to remove systemic barriers that have resulted in health inequities. And a strong public health system comprises federal, state, tribal, territorial, and local health agencies working with a network that includes healthcare providers, public safety agencies, human service and charity organizations, education and youth development organizations, recreation and arts-related organizations, economic and philanthropic organizations, and environmental agencies and organizations.[21]

PUBLIC HEALTH DATA MODERNIZATION AND STAFFING NEEDS—WHAT'S THE NEEDED LEVEL OF INVESTMENT?

Experts agree that increased and sustained funding to strengthen the country's public health system is urgently needed, particularly in the areas of data infrastructure and staffing. *The Data: Elemental to Health* campaign, the de Beaumont Foundation and Public Health National Center for Innovations have estimated needed levels of investment in both areas.

Data Modernization

There is strong consensus that the country's response to the COVID-19 pandemic was weakened by fractured and outdated public health data infrastructure. Ensuring that the COVID-19 pandemic experience is not repeated requires sustained investment in data systems that can deliver comprehensive, real-time data during the country's next public health emergency. Improved data systems are also a critical element of any efforts to address America's multiple epidemics of chronic disease and substance misuse and suicide, as well as racial inequities.

The Data: Elemental to Health campaign has called on Congress to invest at least $7.84 billion over five years to modernize the public health data infrastructure, including by investing in five key pillars of data management:

1. Electronic Case Reporting
2. Laboratory Information Management Systems
3. Syndromic Surveillance
4. Electronic Vital Records
5. National Notifiable Disease Surveillance System

Additionally, investments need to be made in the local public health workforce and systems compatibility as well as state-level data systems, leadership, management, and integration.[22]

Growing the Public Health Workforce

State, local, tribal, and territorial public health departments are essential to maintaining the security, safety, and prosperity of local communities, yet they are consistently underfunded, making residents more vulnerable to emerging infectious and chronic diseases, and other health threats. An October 2021 analysis conducted by the de Beaumont Foundation and the Public Health National Center for Innovations found that state and local public health departments need an 80 percent increase in workforce size to ensure comprehensive public health services for all U.S. residents.[23]

The de Beaumont Foundation issue brief, *Staffing Up: Workforce Levels Needed to Provide Basic Public Health Services for All Americans,* found that state and local public health departments collectively lost 15 percent of their workforce over the past decade and need to hire 80,000 additional full-time employees to establish an adequate foundational workforce and to deliver a minimum set of public health services to the nation. (See Figure 1.) Specifically, due to existing staffing shortages, local health departments need to add approximately 54,000 full-time employees and state departments need to add 26,000 full-time employees across differing levels of categories and areas of expertise. (See Figure 1.)[24]

Figure 1: New FTEs Needed by Population Served

	Current FTEs for basic foundational public health services	Total FTEs needed for full implementation	Additional FTEs needed for full implementation	Percentage change needed
<25,000	4,000	13,000	+9,000	230%
25,000 – 49,999	5,500	13,000	+7,500	140%
50,000 – 99,999	7,000	15,000	+8,000	110%
100,000 – 199,999	8,500	14,500	+6,000	70%
200,000 – 499,999	14,000	20,000	+6,000	40%
500,000 +	33,500	51,000	+17,500	50%
Local Health Departments	72,500	126,500	+54,000	70%
State Health Departments	31,000	57,000	+26,000	80%
Total	103,500	183,500	+80,000	80%

NOTE: Estimates are rounded to nearest 500 FTEs and the nearest 10% change.

Source: Staffing Up: Workforce Levels Needed to Provide Basic Public Health Services for All Americans, de Beaumont Foundation[25]

Summary of Policy Recommendations

This report includes recommendations for policy action by the administration, Congress, and state and local officials within four issue areas. A full listing of the report's recommendation begins on page 32.

1. Substantially Increase Core Funding to Strengthen Public Health Infrastructure and Workforce

Funding for public health must be increased, flexible, and sustained over time. Critical funding needs include modernized health data and disease tracking systems that are interoperable and that disaggregate data collection and reporting. A second budget priority is a larger, more diverse public health workforce.

2. Invest in the Nation's Health Security

The nation's health security can be strengthened by investing in health emergency preparedness (including within the healthcare system), improving immunization infrastructure, growing efforts to address antimicrobial-resistant infections, and addressing the impacts of climate change and other environmental health threats.

3. Address Health Inequities and Root Causes of Disease

The conditions within which individuals are born, grow, live, work, and age are key drivers of their health. These health drivers, also known as the SDOH, often determine if a community has the resources to support good health for its residents. During an emergency, they also often mean the difference between resilience and recovery, on one hand, and illness and long-lasting harm, on the other hand. Policymakers should invest in programs that address SDOH, and federal agencies should ensure grants are reaching communities that are most in need.

4. Safeguard and Improve Health Across the Lifespan

Routine public health programs that promote health across the lifespan—ranging from maternal and infant health to disease prevention to support programs for older Americans—were slowed during the pandemic because of the demands on health departments nationwide. Programs promoting health at all stages of life, including programs that stem chronic disease, prevent adverse childhood experiences, and support behavioral health and suicide prevention, should be a top priority.

The conditions within which individuals are born, grow, live, work, and age are key drivers of their health. These health drivers, also known as the Social Determinants of Health, often determine if a community has the resources to support good health for its residents.

Public Health Funding Trends

Federal public health funding

The federal government invests in public health programs across many of its agencies and dozens of programs. These programs—the backbone of the nation's public health system—are designed to improve health, prevent diseases and injuries, and prepare for potential disasters and major health emergencies. Most of this money flows through the Centers for Disease Control and Prevention (CDC), with additional funds going to other agencies within the U.S. Department of Health and Human Services (HHS), the U.S. Department of Agriculture (USDA), the U.S. Department of Housing and Urban Development, the U.S. Department of Transportation, and the U.S. Environmental Protection Agency, among others. The 2021 federal allocations were more complicated than other budget years because there were two categories of funding: (1) regular budget year funding and (2) funding that was specific to the COVID-19 response.

CDC funding trends

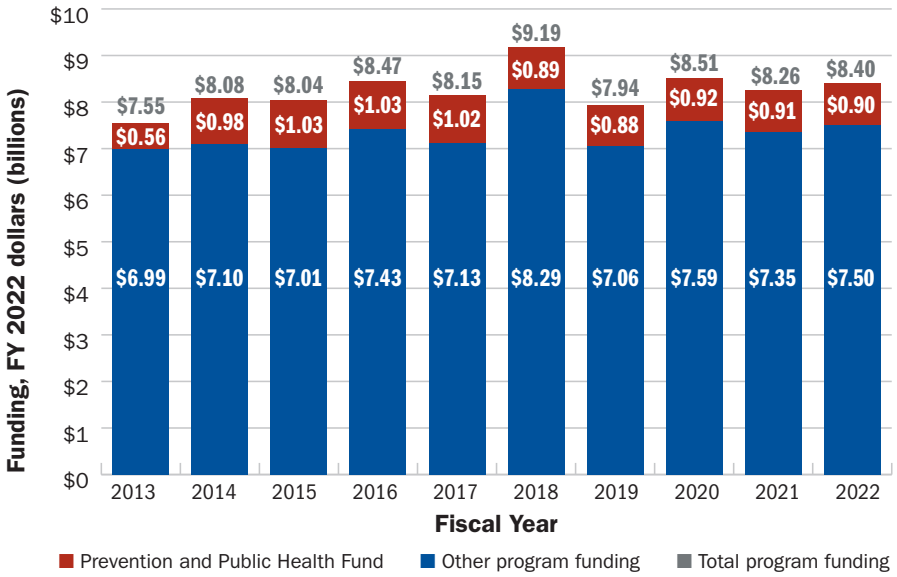
The CDC is the nation's leading public health agency. Its mission is to protect U.S. residents from disease outbreaks, disasters, and unsafe food and water, and to reduce the incidence of leading causes of death. To help accomplish its objectives, the CDC supports states, localities, tribes, and territories in addressing threats and improving health in their communities. Indeed, the CDC redistributes the bulk of its program funding to these jurisdictions.

The agency's budget has not kept pace with the nation's growing public health needs and emerging threats, including the rise in chronic disease and weather-related emergencies. Years of eroding resources for public health emergency preparedness contributed to the country's flat-footed response to the COVID-19 pandemic.[26] Funding for effective community prevention programs, such as obesity prevention, is inadequate to sufficiently support every state.[27] Despite rapid growth in the older adult population,[28] funding to support the overall health and well-being of older adults is scarce. Finally, the CDC, and by extension its state, local, tribal, and territorial partners, lack the flexible funding needed to respond to the underlying drivers of poor health and to adequately grow and support the cross-cutting, foundational capabilities that bolster comprehensive public health systems at the federal, state, local, tribal, and territorial levels.[29]

The fiscal year (FY) 2022 budget for the CDC, which does not account for the onetime distribution of money from reserve funds and pandemic relief laws enacted in 2020 and early 2021, is $8.4 billion. This budget reflects a $602 million (8 percent) increase from FY 2021 funding—or a 2 percent increase in inflation-adjusted dollars. Looking further back, the CDC's budget increased by just 11 percent over the past decade (FY 2013–2022), after adjusting for inflation. (See Figure 2.)

sshepard

Figure 2: CDC Program Funding, Adjusted for Inflation, FY 2013–2022



Note: Appropriately comparing funding levels from FY 2013–2018 to levels in FY 2019 and thereafter requires accounting for the transfer of funding for the Strategic National Stockpile from the CDC to the Office of the Assistant Secretary for Preparedness and Response in FY 2019.

Funding levels are in FY 2022 dollars. TFAH adjusted the data for inflation using the Bureau of Economic Analysis's implicit price deflator for gross domestic product.

CDC's FY 2013 funding was reduced by 5 percent due to sequestration as required by statute: https://www.cdc.gov/budget/documents/fy2013/fy-2013-sequester-impacts.pdf. The FY 2013 reduction was the largest across-the-board cut due to sequestration; Congress reduced the sequester percentage for FY 2014 and thereafter.

Source: CDC Annual Operating Plans[30]

The largest increases in the CDC's FY 2022 budget went to Public Health Infrastructure and Capacity (+$200 million), Global Public Health Protection (+$51 million), the Public Health Data Modernization Initiative (+$50 million), the Immunization Program (+$38 million), the Public Health Emergency Preparedness Cooperative Agreement (+$22 million), the Ending HIV/AIDS Initiative ($21 million), and the Safe Motherhood/Infant Health program (+$20 million). Much of the rest of the budget was effectively level-funded.

The $200 million outlay toward building up the nation's public health system infrastructure and capacity represents an important milestone. This was the first time that Congress has provided such a cross-cutting, annual investment, which will begin the process of building up a woefully overmatched system and workforce. The traditional nature of public health funding—siloed, disease-specific, inconsistent, and often reactive to crises—has restricted health departments' agility, weakened their capabilities, and left little funding (about $1 out of every $10 in the CDC's budget)[31] for foundational elements necessary to successfully provide essential public health services.[32]

The new money, because it is annual and flexible, will boost health departments' ability to hire and retain a skilled workforce; innovate and establish better practices for data collection, health equity, and cross-sector collaborations; support physical and technological improvements in public health

laboratories; and conduct performance improvement.[33] In part funded by the American Rescue Plan Act, the CDC also has announced a $3.9 billion competitive funding opportunity for health departments of states, territories, freely associated states, and populous localities. The funding is a first-of-its-kind, non-categorical, cross-cutting investment to help health departments increase the size and skill level of their workforces; improve organizational systems and processes; modernize and streamline data ecosystems; increase data availability, use, and interoperability; and expand the number and quality of public health service facilities. The investments are intended to begin the task of modernizing public health agencies and improve their ability to advance health equity. A component of the grants, expected to range from $2.9 million to $161.6 million, are also intended to help address the historic underinvestment in communities that are economically or socially marginalized, rural communities, and communities with racial and ethnic minority populations.[34, 35] These grants, although funded by emergency response money, will allow departments to invest in multiple year programs including growing their workforce, something emergency funding does not typically do.

Also notable was the $50 million tied to the Public Health Data Modernization Initiative. Public health partners have long sounded the alarm that data, disease surveillance, and epidemiology were moving slower than the diseases they were intended to detect.[36] Under-resourced health departments are forced to operate a patchwork of siloed public health data systems that do not talk to each other nor to the healthcare system.[37] This new money, on top of more than a billion dollars in related investments from various pandemic relief laws, is accelerating data modernization in accordance with the CDC's strategic roadmap,[38] enabling major progress in electronic laboratory reporting and in electronic case reporting between healthcare facilities and public health. In addition, CDC recently established the national Center for Epidemic Forecasting and Outbreak Analytics, which brings together next-generation public health data, disease modelers, and communications experts to step up the accuracy and widespread use of federal disease modeling and forecasting capabilities—akin to real-time weather forecasts—and to expand data sharing and integration.

Overall, these cross-cutting investments will be key to strengthening the nation's public health system, but they will need to be sustained long term in order to leverage these initial investments and move toward a more effective system.

Prevention and Public Health Fund

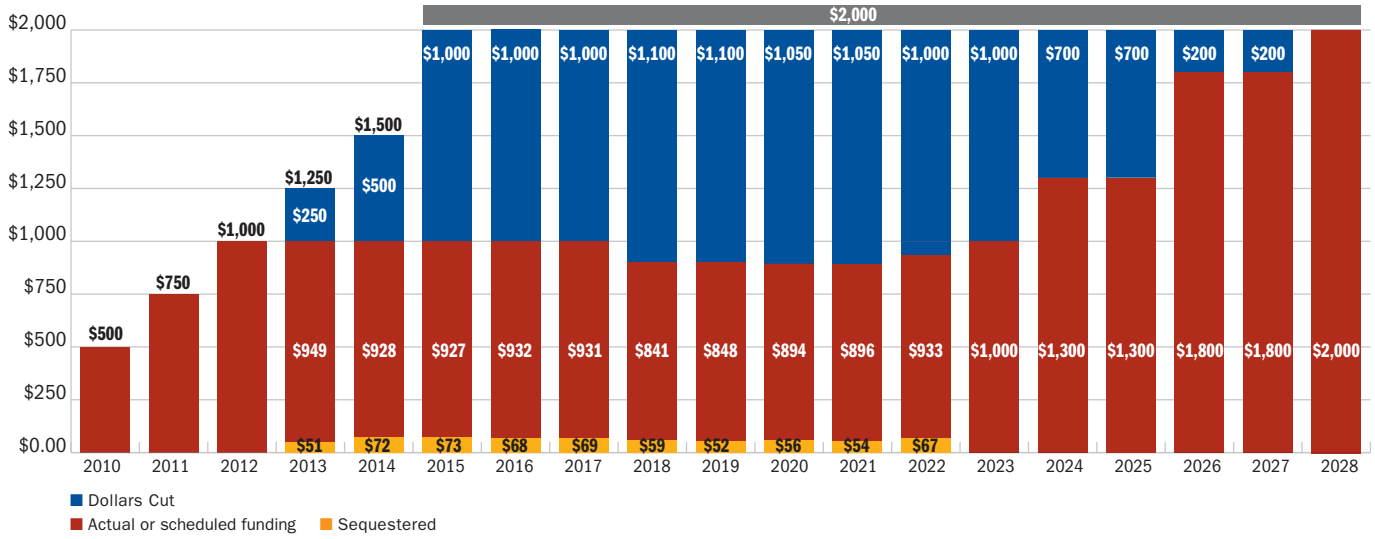
Of the CDC's FY 2022 budget, 11 percent ($903 million), consists of funding for the Prevention and Public Health Fund, or the "Prevention Fund,"[39] a critical source for prevention and public health funding within the federal budget. The Prevention Fund is intended, by statute, to "improve health and help restrain the rate of growth in private and public sector health care costs."[40] Its purpose is to support "expanded and sustained national investment in prevention and public health programs."[41]

Prevention Fund programs have demonstrated the importance of expanding evidence-based approaches to preventing disease and strengthening the public health infrastructure. It has invested more than $11 billion to enable communities in every state and territory to invest in effective, proven public health and prevention efforts. The fund supports proven prevention efforts targeted at reducing tobacco use, expanding access to immunizations, increasing physical activity, improving nutrition, and expanding mental health and injury-prevention programs. It provides financial support directly to states and localities to address their most pressing health challenges with the programs and services most appropriate for their community needs.[42]

To the detriment of the nation's health, starting in FY 2013, the Prevention Fund has been repeatedly used for other priorities. There is a continuous gap between the funds that were originally enacted and actual or scheduled funding. (See Figure 3.) In all, the fund is on pace to lose $11.9 billion—about a third—of its originally allocated $33 billion from FY 2010–2027.

Figure 3: String of Cuts to the Prevention Fund Since Creation

Prevention Fund, FY 2010 – 2028



Original enacted allocations = blue & red & yellow.

Note: The Patient Protection and Affordable Care Act (ACA) (P.L. 110-48) established the original allocations (blue bars + red bars + gold bars), while most recently, the Bipartisan Budget Act of 2018 (P.L. 115-123, current law) triggered cuts (blue bars). The CDC receives most but not all distributions from the Prevention Fund; the rest is allocated to the Substance Abuse and Mental Health Services Administration and the Administration for Community Living.

Source: CDC Annual Operating Plans[43]

Funding for key initiatives

The CDC supports both cross-cutting aspects of public health, such as public health laboratories, as well as issue-specific efforts, such as emergency preparedness, chronic and infectious disease prevention including tobacco cessation, and substance use disorder and suicide prevention. These programs place an emphasis on addressing the health inequities that exist in communities across the country.

Owing in part to flat funding levels over the past decade, the CDC's budgets for many of these initiatives remain insufficient to support all states, territories, tribes, and localities. This section describes funding trends for several key program areas.

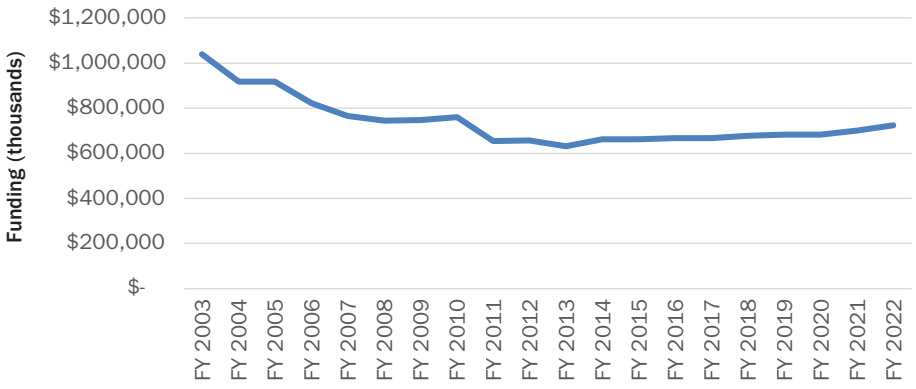
Public health emergency preparedness and response

In 2019, the Pandemic and All-Hazards Preparedness and Advancing Innovation Act was enacted, reauthorizing the CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement through FY 2023.[44] Despite being the primary source of federal support for state, local, tribal, and territorial public health emergency preparedness and response, Congress cut this funding by hundreds of millions of dollars over the past two decades. (See Figure 4.) Following an $18 million increase in FY 2021, PHEP received an additional $22 million in FY 2022. This recent trend is encouraging and advisable, especially during a pandemic, but the fund requires more than $100 million in additional resources before it will begin to approach adequacy.

The erosion of funding over time increased the vulnerability of the United States ahead of the COVID-19 pandemic, which revealed the tragic consequences of the nation's long-term neglect of public health capabilities at the federal, state, local, tribal, and territorial levels. Understaffed health departments were in some cases using 20th-century tools, such as telephones and fax machines,[45,46] to respond to a 21st-century pandemic. They were needlessly working from a deficit when the pandemic emerged.

Figure 4: PHEP Funding is Regaining Lost Ground, But Additional Investment is Needed

CDC funding for state and local preparedness and response, FY 2003–2022



Note: Data for FY 2003–2015 reflect "state and local preparedness and response capability," with additions in FY 2003 (smallpox supplement) and FY 2004 (Cities Readiness Initiative and U.S. Postal Service costs). Data for FY 2016–2022 reflect the sum of funding for the "Public Health Emergency Preparedness Cooperative Agreement" and "Academic Centers for Public Health Preparedness." A change in the CDC's reporting practice in its annual operating plans accounts for this difference.

Source: CDC Annual Operating Plans[47]

The CDC's PHEP Cooperative Agreement provides funding directly to 50 states, four metro areas (Chicago, Los Angeles County, New York City, and the District of Columbia), and eight U.S. territories as well as freely associated states to improve response readiness.[48] The program is intended to address "all hazards," including infectious diseases, such as COVID-19, measles, and seasonal flu; weather-related emergencies; human-made disasters, such as terrorism; environmental disasters; and water contamination. Money from PHEP enables states to fund epidemiologists, laboratory staff, health educators, health professionals, and field staff to investigate and address public health threats.[49]

In response to the 9/11 terrorist attacks, Congress created the Hospital Preparedness Program (HPP)—in addition to PHEP—to mobilize healthcare organizations and hospitals with federal support in the event of a regional or national emergency.[50] Since 2002, the HPP has supported public health emergency responses, including for Hurricane Katrina (which exposed longstanding critical underfunding and unpreparedness in emergency response, presaging what the country experienced during the COVID-19 pandemic); the H1N1 pandemic; the Boston Marathon bombings; Hurricanes Harvey, Maria, and Irma; and the COVID-19 pandemic.[51,52]

Administered and run through the Office of the Assistant Secretary for Preparedness and Response at HHS, the HPP, the primary federal source of funding to help the healthcare delivery system prepare for and respond to disasters, has been cut from $515 million in FY 2003 to $296 million in FY 2022—a nearly two-thirds cut, after adjusting for inflation.[53]

During the first year of the COVID-19 pandemic, the Office of the Assistant Secretary for Preparedness and Response provided $350 million in emergency supplemental funding to support hospitals, health systems, and healthcare providers to prepare for and respond to COVID-19. Of this, Congress awarded $100 million as part of the Coronavirus Preparedness and Response Supplemental Appropriations Act and $250 million as part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act. The funding supported the National Special Pathogen System, a nationwide systems-based network that coordinates the National Emerging Special Pathogens Training and Education Center; hospital associations in all 50 states, the District of Columbia, New York City, and Puerto Rico; regional Ebola and other special pathogen treatment centers; and HPP recipients.[54]

Owing in part to long-term underfunding, the pandemic exposed major gaps in healthcare preparedness, including coordinating surge capacity across the system;[55,56] managing and deploying supplies, such as personal-protective equipment; building and maintaining preparedness for high-consequence infectious diseases;[57] preparedness of facilities that serve people at higher risk, such as long-term care facilities; and lack of training and preparedness for events in healthcare.[58] Experts have also identified additional gaps, such as pediatric surge capacity,[59] burn capacity, other specialty care needed for emerging threats, and ongoing stress on the healthcare system's ability to provide emergency care.

When extraordinary outbreaks or disasters occur, they sometimes require supplemental funding. There are different mechanisms for facilitating such funding. The most frequent approach is for the administration to request and for Congress to pass a supplemental appropriation, as it has during the COVID-19 pandemic. However, this process may result in significant delays, as was the case during the Zika outbreak in FY 2016.[60] Other mechanisms, including the following, can potentially accelerate the availability of resources:

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- **Infectious Disease Rapid Response Reserve Fund,** established by the FY 2019 Labor-HHS-Education appropriations bill, can be tapped to prevent, prepare for, or respond to an infectious disease emergency.[61] Congress also added to the fund an additional $85 million in FY 2020, $10 million in FY 2021, and $20 million in FY 2022.[62] Under the direction of the HHS secretary, funds may be transferred to other Public Health Service Act programs, as necessary. This mechanism can move targeted money quickly. However, the demands of addressing many major outbreaks far exceed the balance of the fund, especially if medical countermeasures are required. For example, HHS tapped $105 million from the fund to begin to respond to the COVID-19 pandemic within days of the federal public health emergency declaration.[63] Congress replenished the fund with $600 million in COVID-19-related supplemental legislation.[64]
- **Public Health Emergency Rapid Response Fund** is designed to be tapped during a declared public health emergency. However, this fund has been perpetually empty. The Pandemic and All-Hazards Preparedness and Advancing Innovation Act requires the Government Accountability Office to audit the fund and make recommendations for how to improve it.[65] Unlike the Infectious Diseases Rapid Response Reserve Fund, the Public Health Emergency Rapid Response Fund can be used for noninfectious disease emergencies.
- **Limited authority under the secretary of HHS to transfer funds** among HHS accounts up to a 1 percent cut and a 2 percent increase. During the COVID-19 response, for example, then-HHS Secretary Alex Azar transferred up to $136 million among HHS programs as a stop-gap measure.[66] Transfers can have major harms on public health programs, as was evident during the Zika response, when the HHS secretary redirected $44 million from PHEP grants while the CDC waited for supplemental funding.[67] Even when Congress back-fills these transfers, the harm has often already been done, as grantees cannot easily hire back a lost workforce.

These mechanisms are intended to serve as a bridge between existing annual funding and emergency supplemental funds but are not intended to supplant or substitute for either. In the early days of the COVID-19 pandemic, transfers from the Infectious Diseases Rapid Response Reserve Fund and other HHS programs helped to jumpstart the response, but delays in the administration's request for emergency supplemental funding, as well as its request to repurpose existing funds, hindered the nation's overall response.[69]

In addition, the Pandemic Preparedness Plan supports the Administration's plan to transform U.S. capabilities to prepare for and respond rapidly and effectively to future pandemics and other high consequence biological threats. The FY 2023 President's budget requests $28 billion in mandatory funds for CDC to invest in the public health system infrastructure, support international capabilities for vaccine preparedness and medical countermeasure development, enhance domestic and global disease surveillance, expand laboratory capacity, further develop a robust public health workforce, and strengthen public health data systems. The CDC-specific investments would help transform medical defenses, ensure early warning and situation awareness, strengthen public health systems, and build core capabilities — all of which would transform America's pandemic preparedness while having major benefits for public health in general.[68]

Of course, consistently providing adequate annual funding for public health agencies at the state, local, territorial, and tribal levels would reduce the country's reliance on such emergency tools.

Promoting health at the community level

The communities where people work, live, and play affect their health and well-being.[70,71,72] Social determinants of health (SDOH)—such as economic opportunity, accessible transportation, robust physical infrastructure, educational access, affordable and nutritious food, stable housing, and public safety—all contribute to wellness and life expectancy.[73,74] Despite these social determinants' significant impact on a community's health outcomes—by far the most influential set of factors behind health outcomes—many jurisdictions still struggle to provide quality living conditions or economic opportunities.[75] And the CDC has minimal funding targeted to addressing SDOH and altering these conditions.

Governmental and nongovernmental organizations, along with community members, must work together to improve SDOH and the overall health of whole populations, rather than one individual at a time.[76] For example, community partnerships have developed and advocated for increasing the number of healthy food retailers in low-income neighborhoods; engaged in "Complete Streets" planning to address the needs of pedestrians, bicyclists, and transit riders; worked to reduce exclusionary disciplinary practices to create more supportive school environments; and launched multimedia campaigns to reduce tobacco use. Public health is often in the lead convening and providing data to support these partnerships.

Another model is the National Diabetes Prevention Program, which includes the Appalachian Diabetes Control and Translation Project[77] and the Native Diabetes Wellness Program.[78] Millions of people in Appalachia suffer from poor health outcomes tied to socioeconomic, geographical, and cultural factors of the Appalachian region.[79] Meanwhile, Native Americans have the highest prevalence of type 2 diabetes among all U.S. racial groups.[80] Both projects utilize regional coalitions and community resources to deliver the National Diabetes Prevention Program's education and lifestyle interventions to the communities that need it most. But insufficient funding limits the number of communities where these programs occur.

Additionally, successful programs, such as the CDC's State Physical Activity and Nutrition (SPAN) program, do not have enough funding to operate in all 50 states. SPAN provides evidence-based strategies to improve nutrition and encourage physical activity by helping to establish and promote early care and education, breastfeeding, food-service guidelines, street designs that increase connections and provide multiple route options, and other local efforts. Unfortunately, in FY 2022, as in recent years, SPAN only has enough funding to support programs in 16 states.[81] Additional states could receive this support for an estimated $1.2 million each. Compared with the estimated $190 billion in obesity-related healthcare costs that the United States spends annually,[82] increasing SPAN funding would be a small investment that could substantially reduce overall healthcare costs.

Two valuable CDC initiatives that specifically focus on racial and ethnic populations at elevated risk of preventable illness, injury, and death—Racial and Ethnic Approaches to Community Health (REACH) and Healthy Tribes, an overarching title that encompasses programs including Good Health and Wellness in Indian Country—are underfunded and forced to compete for limited resources. Both have a solid track record of advancing

culturally appropriate and effective interventions for populations that bear disproportionate burdens of chronic disease; Congress should appropriately fund them to match the scale of the problem.

These and other community prevention efforts can effectively address a wide variety of adverse health outcomes, such as chronic disease, substance misuse, injury, and violence.[83,84] By extension, this can also help reduce preventable acute healthcare spending, producing a substantial return on investment. For example, school-based substance misuse screenings, brief interventions, and referrals to treatment programs have produced returns on investment as high as $20 for every $1 spent.[85,86] School-based violence-prevention efforts can achieve a return ranging from $15 to $81 for every $1 spent. Tobacco-control mass-media campaigns have demonstrated returns ranging from $7 to $74 per $1 spent,[87,88,89,90] and the CDC's Tips from Former Smokers (TIPS) campaign, the first federally paid national tobacco-education campaign, helped prevent an estimated 129,000 early deaths and an estimated $7.3 billion in smoking-related healthcare costs from 2012 to 2018.[91] Prevention Fund monies funded the TIPS campaign.

While the CDC's existing programs have proved effective in addressing several SDOH, FY 2021 was the first year that the CDC specifically received funds ($3 million) to focus on SDOH strategies. The $8 million that the CDC received in FY 2022 for SDOH will continue to build momentum for innovative work, but that amount needs to grow to fully address the scope of the issue.

Chronic disease prevention

According to the CDC, roughly 60 percent of adults[92] and about 25 percent of children ages 2 through 8 in the United States live with one or more chronic diseases, such as heart disease, diabetes, cancer, obesity, and/or asthma.[93] Together, chronic diseases are responsible for seven in 10 deaths each year in the United States[94] and, along with mental health conditions, are responsible for 90 percent of the country's $4.1 trillion in annual healthcare expenditures.[95] While genetic risk factors may play a role in the development and progression of chronic disease, behaviors such as smoking, alcohol consumption, diets with high-calorie and low-nutrition content, and lack of physical activity are major factors that influence the rate and severity of chronic disease.[96] For instance, just one behavioral risk factor—sedentary lifestyle—contributes to an estimated 10 percent of premature deaths[97] and is a major risk factor for severe COVID-19.[98] Yet at least 15 percent of adults in every state and territory in the country are physically inactive.[99] The CDC estimates that physical inactivity alone costs the healthcare system $117 billion annually.[100] These risk factors have ties to social, economic, and environmental conditions; prevention efforts involve improving the conditions as well as promoting healthful behaviors.

While the majority of adults in the United States live with chronic disease, the burdens are not distributed equally and usually fall on neighborhoods and communities that have been historically under-resourced. Racial and ethnic disparities are deep and wide. For example, while white men are more

likely to develop colorectal cancer than Black men and white women are more likely to develop breast cancer than Black women, both Black men and women are more likely to die from those diagnoses.[101]

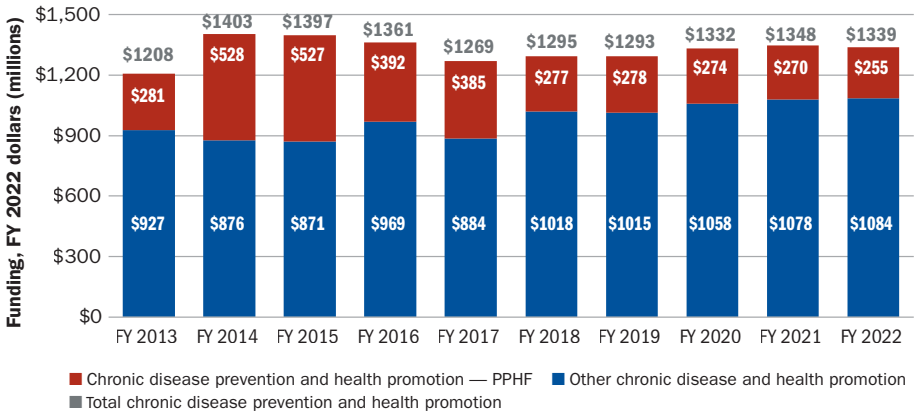
The key to reducing healthcare expenditures related to treating chronic disease is increased investment in effective and proven prevention programs. The CDC's chronic disease prevention and health promotion activities focus on four key areas:[102]

1. Measuring prevalence of chronic diseases and risk factors among U.S. residents.
2. Making environmental improvements that facilitate healthy choices.
3. Strengthening healthcare systems to deliver prevention services that keep people well and diagnose diseases early.
4. Connecting clinical services to community programs that help people prevent and manage their chronic diseases and conditions.

The CDC has several evidence-based prevention and control programs ready for communities to implement across the chronic disease spectrum that evidence suggests are cost-effective. For example, the CDC's National Diabetes Prevention Program may save more than $1,000 annually per participant in healthcare costs.[103] In the first five-year cycle (2012–2016) of its Million Hearts initiative, a national effort to prevent one million heart attacks and strokes, the program prevented an estimated 135,000 heart attacks, strokes, and related acute cardiovascular events, and it saved $5.6 billion in direct medical costs, a substantial portion of which was saved by public insurance programs such as Medicare and Medicaid.[104]

Figure 5: CDC's Current Chronic Disease Funding Lags Behind FY 2014 Level

Chronic disease funding, adjusted for inflation, FY 2013–2022



Note: Funding levels are in FY 2022 dollars. TFAH adjusted data for inflation using the Bureau of Economic Analysis's implicit price deflators for gross domestic product.

Source: CDC Annual Operating Plans[105]

Substance misuse and suicide prevention

The epidemics of alcohol, drug, and suicide deaths and injuries continue to increase, likely exacerbated by the COVID-19 pandemic. According to provisional data from the CDC, drug overdoses accounted for an estimated 108,000 deaths in 2021—the most, by far, on record,[106] amounting to a nearly 15 percent increase from 2020, a year that itself saw a 30 percent increase.[107,108] Overdose deaths from synthetic opioids like fentanyl, psychostimulants, and cocaine all increased over the period.

A bit more encouragingly, the rate of suicide fell nationally in 2019 and 2020. But this recent downturn followed a 30 percent increase from 2000 to 2018—pushing suicide to become a leading cause of death in the United States, particularly among people ages 10 to 14 and 25 to 34.[109] And this decline was not experienced across all populations, suicide deaths increased in 2020 among American Indian, Black, and Latino people. To help reverse these increases and promote other positive outcomes, the CDC Injury Center for Injury Prevention and Control, Division of Violence Prevention, has identified prevention of adverse childhood experiences (ACEs) as a key priority. The CDC estimates that 61 percent of adults report having experienced at least one ACE in their lifetime, and the prevention of ACEs could reduce cases of depression in adults by 44 percent while also averting 1.9 million cases of heart disease, among other benefits.[110]

Substance misuse, overdose, and suicide share common risk and protective factors. However, few federally funded programs target their underlying causes and the adversity that often precedes these health concerns. Addressing ACEs and suicide, in particular, requires socially focused efforts, including strengthening economic support for families, intervening early to reduce harm when children are mistreated, and aiding safe and supportive schools. Studies also show that the social and economic crises precipitated by the pandemic, coupled with barriers to behavioral health treatment and racial disparities in access to treatment options,[111,112] put people in need at particular risk.[113]

Through a prevention approach focused on public health, the CDC can support efforts to address these issues by redoubling the focus of public health departments on SDOH, shared risk and protective factors, and community services. These efforts are complementary to individual and treatment-focused services supported by the Substance Abuse and Mental Health Services Administration (SAMHSA) and other agencies. Some CDC programs funded to address the above issues include:

- **Preventing ACEs: Data to Action.** In 2020, the CDC launched funding for the *Preventing ACEs: Data to Action* cooperative agreement, which aims to build state-level capacity to collect and learn from ACEs data and to implement strategies to prevent ACEs. The CDC has also released several technical packages—collections of proven strategies to reduce specific risks or outcomes—to address ACEs, as described in the *Preventing Adverse Childhood Experiences (ACEs): Leveraging the Best Available Evidence*.[114] The CDC currently supports six state-level offices, institutes, or departments that are implementing two or more strategies from *Preventing ACEs*. The Connecticut Office of Early Childhood, for example, has trained early childhood home-visitation providers on ACE risk and protective factors and has added questions on ACEs among high school students to its survey efforts.[115]
- **Injury Control Research Centers.** To better understand opportunities to prevent suicide and other injury, the CDC currently funds nine Injury Control Research Centers at approximately $833,000 per center each year for five years.[116] At least five of the centers focus on suicide prevention.
- **Core State Violence and Injury Prevention Program.** To support the implementation, evaluation, and dissemination of strategies to address child abuse and neglect, intimate partner/sexual violence, and other injuries, the CDC's Core State Violence and Injury Prevention Program (Core SVIPP) currently funds and provides technical assistance to 23 states.[117] The efforts that states undertake through the Core SVIPP are diverse but include efforts like Wisconsin's, which has utilized its Core SVIPP award to decrease reincarceration among mothers and help them regain custody of their children. These efforts may help protect children from negative health consequences that are associated with parental incarceration and family dysfunction.[118] Core SVIPP should be funded to expand to all 50 states.
- **Suicide Prevention.** The CDC Suicide Prevention program funds states, communities, and tribes to implement comprehensive suicide-prevention plans. It currently funds 11 recipients to implement and evaluate a comprehensive public health

approach to suicide prevention, with attention to populations at higher risk. The programs consist of forming multisector partnerships, using data to identify vulnerable populations and risk and protective factors, implementing rigorous evaluation efforts, and filling gaps through complementary strategies and effective communications. The programs seek to reduce suicide and suicide attempts by 10 percent and build toward a national goal of reducing suicide by 20 percent by 2025.[119]

- **Overdose Data to Action.** CDC funding for opioid overdose-prevention and surveillance increased by $366 million, from $125 million in FY 2017[120] to $491 million in FY 2022.[121] The agency leverages this funding to provide grants to states and large local health agencies to strengthen prescription drug monitoring programs, implement evidence-based overdose-prevention strategies, expand the surveillance of opioid overdoses, and promote appropriate prescribing. To facilitate multifaceted prevention efforts, the CDC's Injury Center created the Overdose Data to Action (OD2A) grants program. OD2A began awarding grants in September 2019. In addition to supporting the core activities described above, this grant also allows states to support innovative community-based prevention efforts. The program has awarded grants to 66 jurisdictions (state, territorial, county, and city health departments).[122] The CDC, for example, has funded work by Washington state to share data with local health jurisdictions, which resulted in increased evidence-based approaches by public safety and public health authorities and improved utilization of prevention strategies.[123]

PRESIDENT'S PROPOSED FY 2023 BUDGET CALLS FOR INVESTMENTS IN PREPAREDNESS AND VACCINE ACCESS

President Biden's FY 2023 budget calls for taking transformative actions to strengthen the country's biodefense and pandemic preparedness in addition to other public health emergencies, proposing $81.7 billion over five years in mandatory funding to agencies within HHS to use to respond to future threats:

- $40 billion to the Office of the Assistant Secretary for Preparedness and Response (ASPR) for investments in advanced development and manufacturing of vaccines, therapeutics, and diagnostics.
- $28 billion for the CDC to put toward the public health system infrastructure, threat surveillance, public health workforce development, public health laboratory capacity, and global health security.
- $12.1 billion to the National Institutes of Health (NIH) for research and development (R&D) of vaccines, therapeutics, and diagnostics; biosafety and biosecurity research and innovation to prevent biological incidents; and safe and secure laboratory capacity and clinical trial infrastructure.
- $1.6 billion for the Food and Drug Administration to support the evaluation of medical countermeasures, such as vaccines, antiviral drugs, diagnostic tests, and personal protective equipment.

In addition, the administration has called for the U.S. Department of State and the U.S. Agency for International Development to receive $6.5 billion over five years in mandatory funding to strengthen the global capacity to prevent, detect, and respond to future COVID-19 variants and other infectious disease outbreaks by growing the global health workforce, supporting pandemic preparedness R&D, advancing global R&D capacity, and supporting health security capacity and financing.

It is significant that these measures would increase mandatory funding, which is governed by statutes and is not normally determined by annual appropriation acts.

To help ensure that current and future routine and outbreak vaccination campaigns are administered effectively and equitably, President Biden also proposes to establish a new mandatory Vaccines for Adults program estimated at $24 billion over 10 years to provide uninsured adults with free access to all vaccines recommended by the Advisory Committee on Immunization Practices. His budget also calls for making all children enrolled in the Children's Health Insurance Program eligible for the current Vaccines for Children program and make more preventive vaccines available at no cost to Medicare beneficiaries.[124]

Much of the funding that the CDC receives annually is directed to states, localities, tribes, and territories to support their communities' related health programming. Major priorities include funding for childhood vaccination programs (e.g., Hepatitis B, MMR, DTaP); prevention of serious infectious diseases, such as HIV/AIDS, tuberculosis, and various sexually transmitted infections; and chronic disease prevention.

Table 1: CDC Program Funding to States, FY 2021

State	Agency for Toxic Substances and Disease Registry (ATSDR)	Birth Defects, Developmental Disabilities, Disability and Health	CDC-Wide Activities and Program Support	Childhood Obesity Demonstration Project	Chronic Disease Prevention and Health Promotion	Emerging and Zoonotic Infectious Diseases	Environmental Health	Health Reform - Toxic Substances & Environmental Public Health	HIV/AIDS, Viral Hepatitis, STI and TB Prevention
Alabama		$5,597,429	$107,050,263		$14,078,165	$1,898,346	$396,449		$13,521,048
Alaska	$423,449	$810,000	$50,530,737		$19,558,945	$1,614,169	$299,963		$2,538,986
Arizona		$1,654,264	$161,489,246		$20,358,576	$2,639,330	$1,480,934		$13,927,541
Arkansas		$1,853,657	$74,657,358		$11,917,092	$744,500			$6,580,346
California	$1,762,205	$3,231,917	$866,345,463	$599,966	$38,404,823	$14,195,356	$4,275,426		$116,315,446
Colorado	$1,677,306	$1,467,427	$126,453,867		$15,507,977	$6,545,296	$1,684,119		$11,830,814
Connecticut	$511,133	$427,744	$91,021,665		$10,633,948	$4,806,094	$2,055,710		$7,053,599
Delaware			$51,507,297		$8,542,068	$927,732	$391,616		$2,636,747
D.C.	$200,000	$16,480,503	$203,496,907		$26,652,402	$6,445,894	$1,705,159		$29,181,677
Florida	$468,638	$1,235,000	$448,175,487		$20,531,726	$3,901,060	$2,336,621		$71,687,212
Georgia	$402,622	$5,764,031	$423,143,968	$150,000	$64,157,820	$9,041,982	$1,697,930		$46,664,500
Hawaii		$160,000	$60,769,444		$7,556,473	$3,636,392	$477,273		$3,728,115
Idaho	$222,010	$160,000	$56,622,008		$5,874,566	$833,028	$340,000		$1,950,572
Illinois	$2,109,186	$2,940,813	$356,728,533	$200,000	$35,599,692	$4,518,952	$3,762,175		$28,781,879
Indiana		$401,732	$144,183,610		$9,198,948	$2,592,658	$1,408,282		$11,722,682
Iowa		$1,915,000	$75,521,569		$10,262,603	$3,422,115	$2,414,212		$3,372,117
Kansas		$393,881	$77,456,355		$10,859,271	$1,578,780	$1,060,640		$2,595,790
Kentucky		$279,367	$100,291,971		$11,422,585	$1,939,476	$1,582,834		$7,387,414
Louisiana	$335,191	$159,998	$110,849,966		$13,257,424	$1,263,106	$1,161,333		$16,900,702
Maine		$235,000	$54,471,048		$6,965,160	$1,639,389	$2,129,482		$1,920,139
Maryland		$4,629,858	$238,470,955	$999,000	$23,649,819	$19,084,506	$3,368,714		$26,990,624
Massachusetts	$1,948,048	$2,697,562	$177,638,347	$599,965	$18,083,434	$5,427,203	$3,275,421		$14,852,316
Michigan	$1,700,000	$1,933,625	$220,074,095		$25,684,507	$4,468,332	$7,053,205		$17,687,440
Minnesota	$606,688	$1,287,636	$132,721,666		$21,679,909	$10,708,006	$3,311,082		$6,943,993
Mississippi		$10,000	$74,920,361		$14,411,434	$1,389,037	$341,004		$11,703,308
Missouri	$380,338	$1,472,354	$135,545,865	$600,000	$15,223,340	$1,798,491	$1,945,989		$12,706,187
Montana	$340,124	$572,500	$51,605,347		$10,445,953	$1,259,289	$837,500	$3,499,995	$1,836,893
Nebraska		$177,500	$70,369,605	$598,691	$10,557,773	$2,196,788	$404,401		$2,499,945
Nevada		$425,000	$76,410,190		$11,935,242	$1,695,996	$702,218		$8,229,326
New Hampshire	$387,973	$732,500	$53,258,464		$7,384,667	$1,739,839	$2,534,772		$1,865,596
New Jersey	$1,733,652	$898,229	$192,839,339		$10,038,633	$2,017,765	$2,434,676		$27,847,552
New Mexico	$339,937	$185,000	$72,829,224		$11,983,127	$3,442,733	$1,914,062		$2,665,691
New York	$1,688,817	$9,543,142	$483,775,983		$34,022,726	$13,800,700	$6,009,936		$98,719,479
North Carolina	$1,589,654	$3,971,543	$236,355,372		$21,222,392	$3,627,861	$1,675,942		$21,691,767
North Dakota		$160,000	$45,663,583		$8,635,156	$1,059,907			$1,832,254
Ohio	$450,000	$652,500	$256,854,306		$12,606,602	$6,066,830	$1,610,031		$18,143,505
Oklahoma		$257,800	$90,435,038		$12,039,548	$1,335,141	$350,000		$7,398,239
Oregon	$449,937	$825,000	$98,714,772		$16,448,775	$4,345,068	$1,765,588		$6,936,502
Pennsylvania	$476,018	$880,968	$275,776,733		$17,995,037	$4,486,998	$1,617,634		$27,248,588
Rhode Island	$444,790	$180,000	$54,125,445	$580,312	$11,117,555	$1,669,966	$1,953,205		$2,599,121
South Carolina		$2,545,900	$110,829,107		$17,091,504	$2,114,582	$578,507		$13,511,717
South Dakota		$250,000	$52,511,061		$8,278,337	$952,669	$578,200		$1,587,722
Tennessee	$450,000	$1,600,758	$149,767,324		$12,713,265	$9,036,013	$728,214		$15,453,176
Texas	$440,233	$645,682	$619,224,964		$22,264,177	$5,053,059	$3,077,820		$66,957,459
Utah	$251,816	$2,657,293	$77,591,298		$14,141,719	$5,446,096	$2,158,852		$2,725,482
Vermont		$160,000	$44,818,099		$6,446,000	$1,007,245	$2,001,754		$1,789,839
Virginia		$1,837,640	$206,887,319		$25,885,156	$4,508,665	$1,546,527		$15,337,648
Washington	$415,663	$218,245	$189,967,902		$23,905,434	$8,606,082	$2,128,161		$17,075,312
West Virginia		$17,500	$56,315,873		$9,360,426	$962,418	$492,558		$2,169,153
Wisconsin	$475,651	$1,254,387	$133,582,397		$15,403,300	$5,991,113	$2,540,927		$5,458,323
Wyoming		$160,000	$44,262,617		$4,863,136	$1,033,126	$300,000		$1,790,857
United States	**$22,681,079**	**$88,007,885**	**$8,364,909,413**	**$4,327,934**	**$836,858,347**	**$210,515,179**	**$89,897,058**	**$3,499,995**	**$864,552,340**

Table 1: CDC Program Funding to States, FY 2021

State	Immunization and Respiratory Diseases	Injury Prevention and Control	Occupational Safety and Health	Public Health Preparedness and Response	Public Health Scientific Services (PHSS)	Vaccines for Children	World Trade Center Health Programs (WTC)	Intra-Departmental Delegations of Authority (IDDA)	Office of National Drug Control Policy Programs (ONDCP) (NAD)	Total State Funding
Alabama	$3,829,531	$5,894,579	$1,554,842	$8,781,873	$799,158	$1,577,076		$517,770,941	$925,000	$683,674,700
Alaska	$1,758,053	$6,328,681	$99,352	$5,078,682	$1,449,783	$1,656,471		$108,212,398	$250,000	$200,609,669
Arizona	$5,605,285	$8,688,656	$655,601	$12,270,310	$719,184	$2,400,846		$777,782,314	$2,800,000	$1,012,472,087
Arkansas	$2,766,053	$3,189,912	$282,167	$6,663,606	$545,991	$1,114,614		$334,852,079	$1,000,000	$446,167,375
California	$31,521,276	$18,200,784	$8,215,186	$64,738,559	$2,805,820	$11,894,183		$3,999,872,190	$4,623,816	$5,187,002,416
Colorado	$6,806,610	$9,496,582	$6,419,370	$11,001,965	$900,729	$2,041,702		$589,199,146	$974,463	$792,007,373
Connecticut	$5,839,209	$7,761,922	$1,680,294	$7,693,758	$597,442	$2,626,864		$358,361,819	$4,646,220	$505,717,421
Delaware	$1,571,629	$5,737,702		$5,383,535	$476,292	$818,508		$120,825,571	$499,620	$199,318,317
D.C.	$9,564,218	$37,959,308	$1,377,581	$9,062,945	$7,234,234	$2,815,765		$83,818,330	$625,000	$436,619,923
Florida	$12,377,967	$17,858,006	$4,009,335	$31,357,415	$837,605	$4,567,998		$2,150,771,635	$3,876,501	$2,773,992,206
Georgia	$21,359,665	$40,625,742	$981,240	$17,165,718	$8,069,005	$3,488,643		$1,284,762,600	$4,800,000	$1,932,275,466
Hawaii	$2,164,481	$3,126,022		$5,446,447	$1,510,344	$1,896,737		$162,226,265	$375,000	$253,072,993
Idaho	$2,258,433	$2,740,028		$5,156,627	$192,428	$857,853		$204,630,153	$875,000	$282,712,706
Illinois	$11,763,646	$13,016,684	$3,139,786	$26,690,241	$486,932	$5,318,293		$1,311,068,545	$5,350,000	$1,811,475,357
Indiana	$4,881,882	$8,228,918	$636,505	$11,575,238	$348,868	$2,082,669		$692,062,100	$3,800,000	$893,124,092
Iowa	$4,202,836	$4,906,745	$4,533,593	$6,825,471	$433,156	$1,726,748		$335,407,300	$1,150,000	$456,093,465
Kansas	$2,976,121	$5,306,991		$6,778,745	$377,625	$1,099,563		$313,558,271	$1,352,315	$425,394,348
Kentucky	$3,810,449	$8,008,840	$3,835,255	$8,667,641	$188,770	$1,367,959		$481,869,140	$4,224,828	$634,876,529
Louisiana	$2,678,572	$11,155,223	$658,512	$9,097,945	$1,680,773	$1,371,615		$500,836,052	$1,374,750	$672,781,162
Maine	$2,766,372	$6,870,497		$5,210,000	$445,069	$1,390,881		$162,217,079	$2,495,000	$248,755,116
Maryland	$12,520,407	$12,903,142	$8,676,873	$14,282,081	$25,737,924	$2,201,476		$647,477,858	$1,600,000	$1,042,593,237
Massachusetts	$6,183,592	$12,117,921	$6,259,923	$13,421,314	$412,224	$2,832,451		$683,442,111	$5,772,257	$954,964,089
Michigan	$7,983,878	$14,574,167	$2,753,417	$16,598,319	$273,131	$3,669,130		$1,002,128,329	$5,439,770	$1,332,021,345
Minnesota	$8,045,214	$7,590,544	$3,962,166	$11,440,385	$292,744	$2,339,913		$566,329,853	$4,339,457	$781,599,256
Mississippi	$3,018,293	$3,282,115		$6,650,591	$139,961	$1,220,319		$342,576,933	$124,654	$459,788,010
Missouri	$5,384,080	$5,715,049	$1,461,352	$10,994,848	$123,170	$1,767,974		$633,843,621	$1,549,801	$830,512,459
Montana	$1,384,098	$3,777,818	$288,220	$5,210,000	$569,042	$684,944		$137,417,061	$761,924	$220,490,708
Nebraska	$2,132,863	$3,475,206	$2,789,410	$5,329,632	$384,402	$918,896		$218,802,737	$375,000	$321,012,849
Nevada	$3,248,471	$7,575,759	$188,328	$7,149,488	$224,697	$1,338,726		$353,906,566	$475,000	$473,505,007
New Hampshire	$1,825,670	$3,460,456	$644,189	$5,339,608	$211,240	$943,863		$155,772,158	$1,350,000	$237,450,995
New Jersey	$6,407,577	$8,489,313	$160,000	$15,600,355	$425,591	$3,157,974	$500,000	$872,152,622	$4,450,000	$1,149,153,278
New Mexico	$4,254,204	$6,605,531	$1,127,787	$6,760,227	$331,658	$1,590,020		$243,344,710	$1,425,000	$358,798,911
New York	$19,237,120	$12,789,157	$4,720,134	$37,993,439	$3,750,901	$10,457,662	$15,738,319	$1,931,359,149	$9,482,639	$2,693,089,303
North Carolina	$6,904,494	$15,043,603	$3,291,964	$15,289,569	$359,224	$3,471,592		$1,061,420,884	$3,024,662	$1,398,940,523
North Dakota	$1,643,044	$429,490	$119,459	$5,210,000	$246,379	$611,739		$105,883,713	$500,000	$171,994,724
Ohio	$8,041,433	$23,124,883	$3,069,029	$18,036,603	$450,521	$2,642,370		$1,162,734,962	$3,925,000	$1,518,408,575
Oklahoma	$3,493,841	$7,131,961	$258,000	$7,910,584	$266,617	$2,109,938		$443,344,817	$2,068,747	$578,400,271
Oregon	$5,595,746	$6,261,762	$1,142,758	$8,377,576	$596,702	$2,385,143		$443,714,307	$1,350,000	$598,909,636
Pennsylvania	$11,920,646	$23,660,389	$2,909,697	$19,110,363	$510,696	$5,306,427		$1,277,085,714	$2,350,000	$1,671,335,908
Rhode Island	$1,430,734	$8,112,680		$5,332,205	$165,061	$1,043,489		$122,129,828	$2,050,000	$212,934,391
South Carolina	$3,739,484	$4,512,218		$10,212,853	$322,381	$1,959,230		$530,537,022	$1,174,914	$699,129,419
South Dakota	$1,410,489	$2,974,936		$5,202,028	$155,404	$682,177		$124,404,368	$750,000	$199,737,391
Tennessee	$7,956,398	$9,518,787		$11,429,152	$325,129	$2,604,660		$713,631,802	$2,475,000	$937,689,678
Texas	$22,255,947	$4,977,529	$3,377,805	$40,952,165	$963,719	$10,004,080		$3,007,512,747	$1,950,000	$3,809,657,386
Utah	$2,956,797	$5,023,325	$2,456,268	$7,004,062	$411,530	$1,270,431		$332,237,418	$2,124,172	$458,456,559
Vermont	$1,672,579	$4,166,040		$5,131,047	$242,947	$965,130		$89,630,795	$1,300,000	$159,331,475
Virginia	$5,997,525	$14,406,440	$1,318,062	$17,509,565	$5,456,805	$1,500,506		$870,572,494	$1,649,745	$1,174,414,097
Washington	$7,467,757	$10,363,663	$4,185,973	$12,914,328	$364,601	$4,193,591		$775,472,844	$4,252,673	$1,061,532,229
West Virginia	$1,264,958	$7,519,974	$400,000	$5,118,758	$126,875	$987,098		$204,187,379	$500,000	$289,422,970
Wisconsin	$5,170,768	$7,952,318	$2,283,467	$11,688,638	$345,262	$1,788,381		$596,705,264	$4,900,000	$795,540,196
Wyoming	$1,212,780	$448,835		$5,154,715	$133,045	$541,058		$96,017,148	$375,000	$156,292,317
United States	**$322,263,175**	**$483,086,833**	**$95,922,900**	**$633,001,219**	**$74,418,791**	**$129,305,376**	**$16,238,319**	**$34,235,881,142**	**$119,882,928**	**$46,595,249,913**

Note: These figures do not include funding tied directly to the COVID-19 pandemic response. The U.S. total reflects grants and cooperative agreements to all 50 states and the District of Columbia, but it does not include territories, localities, or tribes for the purpose of comparability.

Source: CDC Grant Funding Profiles[125]

CDC COVID-19 Funding to States, Tribes, Localities, and Territories

In response to the COVID-19 pandemic, the CDC received several pandemic-specific, supplemental appropriations beginning in March 2020,[126] in addition to its annual allocation, these dollars are onetime, pandemic-response funds:

- $2.2 billion from the Coronavirus Preparedness and Response Supplemental Appropriations Act (March 2020);
- $4.3 billion from the CARES Act (March 2020);
- $1 billion from the Paycheck Protection Program and Health Care Enhancement Act (April 2020), transferred to the CDC from the Public Health and Social Services Emergency Fund (PHSSEF) administered by HHS;
- $10.3 billion from the PHSSEF went to health departments through the CDC Epidemiology and Laboratory Capacity program for testing and contact-tracing;
- $8.8 billion from the Coronavirus Response and Relief Supplemental Appropriations Act (December 2020);
- $19.1 billion from the PHSSEF to health departments through the CDC Epidemiology and Laboratory Capacity program for testing and contact tracing; and
- $11.5 billion from the American Rescue Plan Act (March 2021).

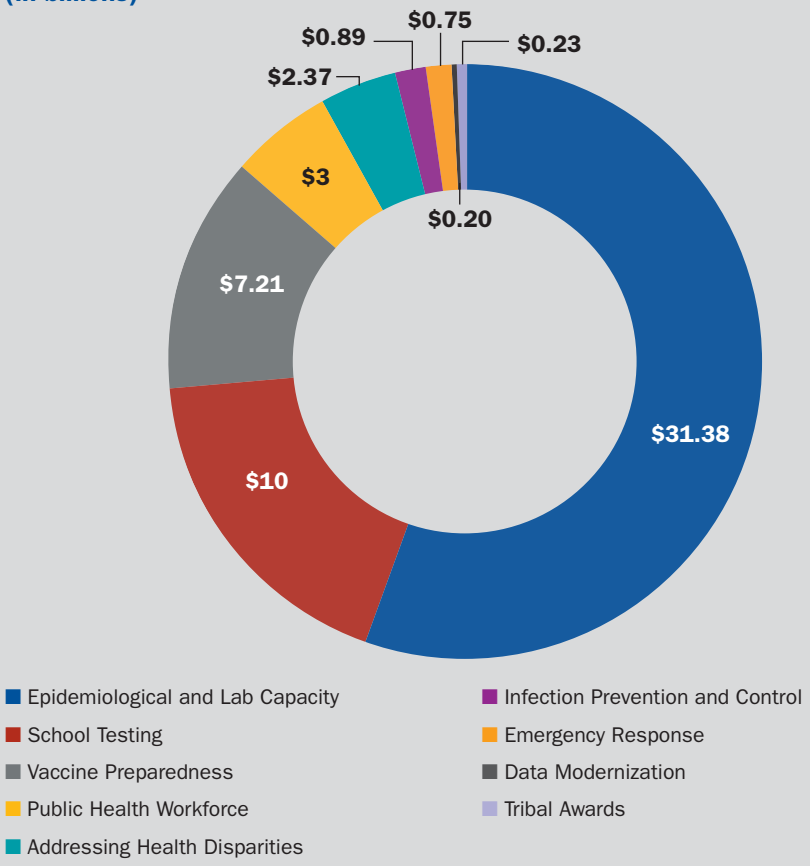
These emergency funds, although critical to the pandemic response, have also illuminated why investing in sufficient public health infrastructure before emergencies is so important. Some states have been slowed in their spending of emergency funding because, by law, their state legislature has to approve spending increases, including increases to staffing headcounts, during any given budget year. These delays can also slow hiring and service delivery at the local level as local departments wait for states to determine how federal funding will be distributed.

In all, the CDC awarded at least $56.1 billion in COVID-19-related funding to states, localities, tribes, and territories across nine categories.[127] (See Figure 6.) A majority (56 percent) of the funding went to support Epidemiology and Laboratory Capacity, assisting health departments with detecting, preventing, and responding to COVID-19 and other infectious diseases. The next largest categories were School Testing (18 percent) and Vaccine Preparedness (13 percent), respectively. The funding for schools went toward establishing partnerships with other schools, pharmacies, laboratories, health departments, or departments of education to facilitate testing and other activities, as well as toward the provision of personal protective equipment, air filters, testing kits, personnel, and other needs. Vaccine preparedness supported vaccine capacity, equitable and safe distribution and administration, vaccine confidence and education, community engagement, information systems utilization, and vaccination in tribal communities.

States also received related funding from the NIH, SAMHSA, the Health Resources and Services Administration, the Administration for Children and Families, the Administration for Community Living, and others.

Editor's note: In addition to amounts appropriated to it directly, CDC also has managed and executed funds appropriated to HHS through the Public Health and Social Services Emergency Fund (PHSSEF). These include: transfers to support COVID-19 testing, contact tracing and mitigation, as well as the public health workforce and $1.29 billion from the Coronavirus Response and Relief Supplemental Appropriations Act, 2021 and $1.86 billion from the American Rescue Plan Act of 2021.

Figure 6: CDC COVID-19 State, Tribal, Local, and Territorial Funding (in billions)



Notes: ***Epidemiological and Laboratory Capacity:*** *assisting health departments with detecting, preventing, and responding to COVID-19 and other infectious diseases.* ***School Testing:*** *establishing partnerships with other schools, pharmacies, laboratories, health departments, or departments of education to facilitate testing and other activities, as well as the provision of personal protective equipment, air filters, testing kits, personnel, and other needs.* ***Vaccine Preparedness:*** *creating vaccine capacity, equitable and safe distribution and administration, vaccine confidence and education, community engagement, information systems utilization, and vaccination in tribal communities.* ***Public Health Workforce:*** *recruiting, retaining, and training skilled public health staff to support the pandemic response, as well as developing the COVID Response Corps, an initiative that provides surge staffing and resources to health departments.* ***Addressing Health Disparities:*** *supporting health departments and reducing COVID-19 health disparities among high-risk and underserved groups, including racial and ethnic minorities and rural communities, and advancing health equity through testing, contact-tracing, and transmission reduction.* ***Infection Prevention and Control:*** *implementing surveillance, tracing, testing, vaccines, and guidance and outreach for public and healthcare professionals.* ***Emergency Response:*** *initiating COVID-19 prevention, preparedness, response, and recovery initiatives, including school-based health programs.* ***Data Modernization:*** *creating data and surveillance systems to support data-sharing among partners, public health reporting, and enhanced infrastructure improvements.* ***Tribal Awards:*** *developing surveillance, mitigation, information management, infection control, and communication to protect against COVID-19 in tribal communities, as well as other injuries and violence such as suicide and intimate partner violence.*

Source: Centers for Disease Control and Prevention[128]

However, while the CDC is implementing cost-effective and lifesaving work, it is woefully underfunded. As the country spends $4.1 trillion on annual health expenditures, the CDC is on track to spend only $1.3 billion on chronic disease prevention and health promotion in FY 2022,[130] roughly the same level as FY 2020 and FY 2021, and below the FY 2014 level, after adjusting for inflation.[131] (See Figure 5.) For example, the Division of Nutrition, Physical Activity, and Obesity—which funds several key programs like SPAN, the High Obesity Program, and the Childhood Obesity Research Demonstration—has resources that equate to less than 50 cents per U.S. resident per year.[132]

Table 2: CDC COVID-19 Pandemic Response Funding to States

	CDC Funding to States for COVID-19 Pandemic Response
Alabama	$784,695,422
Alaska	$227,651,508
Arizona	$1,151,075,213
Arkansas	$521,494,145
California	$6,035,896,076
Colorado	$925,593,420
Connecticut	$668,800,340
Delaware	$258,447,322
District Of Columbia	$234,894,603
Florida	$3,204,479,869
Georgia	$1,689,875,366
Hawaii	$290,936,301
Idaho	$338,294,540
Illinois	$2,220,472,331
Indiana	$1,087,090,299
Iowa	$549,476,656
Kansas	$507,430,243
Kentucky	$723,636,986
Louisiana	$838,956,794
Maine	$289,282,677
Maryland	$1,013,335,944
Massachusetts	$1,280,553,715
Michigan	$1,617,709,688
Minnesota	$886,795,147
Mississippi	$540,740,886
Missouri	$968,128,389
Montana	$259,106,540
Nebraska	$377,634,644
Nevada	$552,090,454
New Hampshire	$289,828,226
New Jersey	$1,763,568,606
New Mexico	$419,021,095
New York	$4,079,236,111
North Carolina	$1,554,641,464
North Dakota	$224,307,650
Ohio	$1,765,404,811
Oklahoma	$658,196,135
Oregon	$670,362,495
Pennsylvania	$2,067,385,258
Rhode Island	$366,865,184
South Carolina	$806,628,161
South Dakota	$252,439,972
Tennessee	$1,085,572,053
Texas	$4,436,930,736
Utah	$526,642,523
Vermont	$208,974,333
Virginia	$1,325,776,849
Washington	$1,198,678,195
West Virginia	$339,513,635
Wisconsin	$924,891,379
Wyoming	$208,759,477
Total	**$55,218,199,866**

Note: The U.S. total reflects grants to all 50 states and the District of Columbia, but it does not include territories, localities, or tribes for the purpose of comparability.

Source: CDC Response to COVID-19[129]

Broader federal funding landscape

While the CDC serves as the primary federal public health agency, several federal agencies within and outside HHS complement and support its work. Like the CDC, these agencies require adequate resources to support their public health activities and to improve nationwide health and well-being.

Within HHS, several agencies are responsible for activities related to public health protection. The **Health Resources and Services Administration** (HRSA) provides healthcare services for geographically, economically, and medically vulnerable U.S. residents, including by administering the Ryan White HIV/AIDS Program, which provides primary medical care, essential support services, and medications for low-income people with HIV. **The Substance Abuse and Mental Health Services Administration** (SAMHSA) spearheads the health response to behavioral health conditions at the federal level and supports state efforts to prevent and treat these conditions. **The Food and Drug Administration** (FDA) protects the safety of food, drugs, medical devices, cosmetics, and tobacco products. Throughout the COVID-19 pandemic, the FDA has played a leadership role in accelerating medical products to diagnose (e.g., diagnostic and antibody testing), treat (e.g., therapeutics), and prevent (e.g., authorizing at least three vaccines for emergency use) the disease. Together, these agencies help support the physical and mental health of all U.S. residents.

All three agencies saw increases in appropriations in FY 2022 (HRSA: $7.2 billion to $8.57 billion;[133] SAMHSA: $6.02 billion to $9.73 billion;[134] FDA: $3.28 billion to $3.37 billion[135]).

In recognition of the positive impact of early childhood education on health and well-being, **the Administration for Children and Families** administers the Head Start Program (for children ages 3 to 5) and the Early Head Start Program (for children under age 3). These programs promote school readiness among low-income children by providing access to early learning, health, and family well-being initiatives. Research suggests that early childhood education positively impacts cognitive and emotional development, as well as longer-term health outcomes associated with higher incomes, better employment, and higher educational attainment.[136] In FY 2022, Head Start and Early Head Start received $11.04 billion,[137] a slight increase from FY 2021. In response to the COVID-19 pandemic, several rounds of supplemental support were provided as part of a nationwide effort to ease its harms on young children and their families, including in the CARES Act ($750 million), the Coronavirus Response and Relief Supplemental Appropriations Act ($250 million), and the American Rescue Plan Act ($1 billion).[138]

Outside of HHS, many departments are assisting in promoting health by addressing SDOH—that is, the broad spectrum of factors in a person's life that influence their health, such as access to safe housing, adequate nutrition, and clean air and water.

The USDA, for instance, also plays a role in public health promotion through anti-hunger programs such as the Supplemental Nutrition Assistance Program (SNAP) and through nutrition-assistance programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Addressing economic insecurity is core to the mission of the USDA's food nutrition programs serving low-income individuals and families.

Even before the COVID-19 pandemic, millions of U.S. residents[139] struggled to consistently get enough food to eat, and healthy foods were often beyond their economic means, making funding for SNAP critical to the nation's public health. The economic devastation wrought by the pandemic, particularly for families who were already living near the brink of crisis, only worsened the problem.[140]

To help provide some relief, Congress and the USDA have taken several steps to bolster the federal nutrition programs. The 2020 Families First Coronavirus Response Act allowed states to give some SNAP-eligible households emergency allotments up to the maximum benefit[141] and established new waiver authorities that allowed WIC and other child nutrition programs to serve participants more effectively during the pandemic. This flexibility for WIC extended through the duration of the public health emergency declaration, and flexibility for the Summer Food Service Program extended through September 2022.[142,143]

The American Rescue Plan boosted SNAP and WIC benefit levels and expanded eligibility, extending a 15 percent increase to SNAP benefits through at least September 30, 2021; adding a four-month increase in WIC benefits for fruits and vegetables; providing extra administrative funds to administer SNAP benefits; and adding funding to expand access to SNAP online purchasing. USDA offered states the ability to extend emergency allotment SNAP payments, but states must actively apply for a waiver to do so. The law also allowed young adults to receive healthy Child and Adult Care Food Program meals at homeless and youth shelters, provided additional funding to support nutrition programs for older adults and Native American communities under the Older Americans Act, and established a practice of extending grocery benefits to low-income children to replace school-provided meals during summer months.[144,145] As the pandemic has continued, Congress has acted to extend some USDA waivers and flexibilities while allowing others to expire. On June 25, 2022, President Biden signed into law the Keep Kids Fed Act, which extended some flexibilities, such as the option to provide school meals in non-congregate settings, through school year 2022-2023. However, after September 30, 2022, children will no longer have universal access to school meals.

Low-income individuals with access to SNAP and WIC have significantly better health outcomes than those without it, including lower rates of obesity, hypertension, and diabetes, and they have approximately 30 percent lower healthcare expenditures than low-income individuals without SNAP.[146,147] Access to SNAP at early ages can also improve non-health outcomes, such as high school graduation, employment status, and earnings.[148]

Beyond traditional federal food-assistance programs, there were encouraging preliminary signs that the expanded Child Tax Credit payments that were disbursed monthly during the second half of 2021, as part of the American Rescue Plan Act, helped recipient families put food on the table. In the six weeks after issuances started flowing, the number of adults living with children reporting that their household did not always have enough to eat fell by nearly a third, with the greatest improvements felt by Black and Latino parents. By contrast, over the same period, food insecurity levels of adults without children changed little.[149]

State and Local Public Health Funding

State health agencies play a key role in promoting public health and supporting local health departments. They directly engage in population-based primary, secondary, and tertiary prevention; developing preparedness plans and coordinating emergency responses; combating the opioid epidemic; and conducting lab testing, disease surveillance, and data collection.[150,151] Many are expanding and modernizing their work to include a stronger focus on primary, or upstream, prevention policies and programs (for more information, see TFAH's *Promoting Health and Cost Control in States* series[152,153]), a commitment to the promotion of equity as a core value in all of their work, and an expansion of their partnership with healthcare and with non-health sectors. Federal funding, a primary source of state public health money, heavily affects the ability of state health departments to fulfill these roles.

Zooming in on funding supported by states' own revenues (i.e., state-generated revenue from taxes, fees, third-party reimbursements, etc.), at least 30 states and the District of Columbia maintained or increased public health funding in FY 2021. Some provided significant increases due to short-term, emergency response funding being included in the accounting. (See Table 3.) But at least 15 states reduced the money directed to such programing amid the COVID-19 pandemic, increasing the likelihood that they will be less prepared and less responsive in the moments that matter most.[154] (Data were not available for five states.)

Local public health departments provide direct service, engage their residents through outreach and communications, and coordinate local partners to address public health issues in their community.

These agencies work to prevent chronic disease and injury prevention, they help protect the food and water supply, provide immunizations, provide health screenings and services, conduct surveillance to detect and monitor infectious diseases, prepare for and respond to disasters and emergencies, combat the opioid epidemic, and offer other public health services and education.[155,156] In recent years, some departments have reduced their provision of direct clinical services as more Americans gained health insurance, and they have increased their attention to policies that promote population level well-being. However, nearly all local health departments still provide some level of clinical care (e.g., immunizations) as well as population-based services and surveillance activities.[157]

More than two years into the COVID-19 pandemic, many state and local health departments are drained and demoralized. Consider the following indicators: 76 percent of local health departments report that inadequate staffing levels hindered the effectiveness, scale, or quality of their COVID-19 response—the largest reported obstacle by a significant margin.[158] Just 41 percent of the public, according to a 2021 survey,[159] has a high level of trust in recommendations from state and local health officials. In addition, dozens of states are considering and/or enacting laws that restrict authorities of state and local public health officials, governors, and others in responding to the pandemic and future health threats.[160] In a spring 2021 survey of public health workers, 53 percent of respondents reported having symptoms of at least one mental health condition, such as anxiety and post-traumatic stress disorder, over the past two weeks.[161] A more recent survey found similar results: a majority of public health employees reported having symptoms of post-traumatic stress disorder, and one-in-five said their mental health was fair or poor.[162] One possible explanation is the higher rates of bullying, threats, and harassment that public health staff experienced during the pandemic.[163] Indeed, 16 percent of local health

departments reported that they had received direct threats to an individual's or their family's physical safety, and in 9 percent of departments, a staff person had their personal information publicized (i.e., doxed).[164] From March 2020 to January 2021, researchers at the Johns Hopkins Bloomberg School of Public Health identified at least 1,499 unique reports of harassment across local health departments in the United States.[165] In May 2022, U.S. Surgeon General Dr. Vivek Murthy released an advisory highlighting the need to address healthcare and public health worker burnout. Dr. Murthy noted that stress among health workers, a workforce that was facing high levels of burnout before the COVID-19 pandemic, is at crisis levels.[166]

These are concerning circumstances, to be sure, but there are reasons for hope. First, during the 2021 state legislative sessions, at least six states (Colorado, Georgia, Maryland, Oklahoma, Oregon, and Utah) enacted laws to protect public health workers from harassment or threats of violence, strengthening and adding to the legal protections that exist in 35 states and the District of Columbia.[167] Additionally, as the country's economy has recovered from pandemic-inflicted damage, it has thus far avoided the type of slow rebound in state, tribal, territorial, and local revenue that was characteristic of the years following the Great Recession,[168] and also the mistaken boom-bust pattern—a surge of attention to public health investment when there is a crisis and then neglect when the emergency passes—that has weakened U.S. health agencies in the past by leaving their infrastructure on weak footing. One demonstration of this was the $7.4 billion included in the American Rescue Plan Act to hire and train public health workers.[169,170] Unfortunately, complementary provisions in other federal legislation under consideration, such as the Public Health Infrastructure Saves Lives Act[171] and the Build Back Better Act,[172,173,174] have not yet been adopted.

Overall, experts estimate that in order to establish a solid infrastructure and to deliver a set of key services (i.e., a baseline that would be elevated during emergency responses), state and local health departments need to increase the size of their workforces by up to 80 percent. This would amount to 26,000 more full-timers at the state level and 54,000 more in local departments, with the greatest relative increases needed among local departments who serve fewer than 100,000 residents.[175] These additions would reverse long-term trends in which state health departments lost 10,000 (nearly 10 percent) full-timers from 2012 to 2019,[176] and local departments lost 26,000 (16 percent) full-time staff from 2008 to 2019. Adjusting for population growth, this represents a loss of 21 percent of local health department workforce capacity.[177]

For more than two years, state and local public health officials have performed admirably under daunting circumstances and amid needless headwinds—and in doing so have saved lives. But despite their valiant efforts to overcome their limited resources, those limitations came at a cost to the well-being of this personnel, the effectiveness of the country's COVID-19 response, and the other critical priorities that were set aside because of stop-gap redeployments. These circumstances are unnecessary and counterproductive. Going forward, pushing higher levels of sustained, predictable resources to these agencies, in addition to modernizing their data systems[178,179,180] and other steps to unlock their capabilities, should be a top priority for policymakers at all levels.

Table 3: PUBLIC HEALTH FUNDING, STATE BY STATE, FY 2020–2021		
State	**FY 2021 Funding**	**Percentage Change**
Alabama	$257,652,902	12%
Alaska	$65,931,500	-58%
Arizona	$113,701,480	-36%
Arkansas	$130,133,899	-6%
California	$3,089,127,000	-49%
Colorado	$299,005,668	1%
Connecticut	$133,245,029	7%
Delaware	Not reported	–
District of Columbia	$264,141,405	3%
Florida	$424,514,931	1%
Georgia	$330,133,290	12%
Hawaii	$171,584,670	-4%
Idaho	$147,506,200	-3%
Illinois	$426,129,500	3%
Indiana	$103,590,532	3%
Iowa	$116,774,125	9%
Kansas	Not reported	–
Kentucky	$132,713,457	-17%
Louisiana	$191,417,740	58%
Maine	$59,871,427	32%
Maryland	$658,687,337	1%
Massachusetts	$719,155,786	8%
Michigan	$197,092,700	10%
Minnesota	$437,484,000	-14%
Mississippi	$46,682,254	-1%
Missouri	$40,214,799	-7%
Montana	$19,802,741	-2%
Nebraska	$78,150,553	-1%
Nevada	$42,440,688	13%
New Hampshire	$33,771,519	4%
New Jersey	$288,147,000	4%
New Mexico	$335,427,947	6%
New York	$1,787,471,171	7%
North Carolina	$156,872,650	-1%
North Dakota	$46,818,558	0%
Ohio	$280,604,552	20%
Oklahoma	$356,170,563	168%
Oregon	$150,603,887	2%
Pennsylvania	$201,400,000	15.1%
Rhode Island	Not reported	–
South Carolina	$141,661,973	0%
South Dakota	$33,085,118	4%
Tennessee	$484,483,900	28%
Texas	$525,901,119	10%
Utah	Not reported	–
Vermont	$35,022,461	7%
Virginia	$360,608,793	7%
Washington	$684,701,500	88%
West Virginia	Not reported	–
Wisconsin	$101,910,800	-1%
Wyoming	$15,857,129	-5%

Note: As a result of differences in organizational responsibilities and budgeting, funding data are not necessarily comparable state to state. See the "Appendix: Methodology" section of TFAH's 2019 Ready or Not report for a description of TFAH's data-collection process, including its definition of public health funding.[181]

While states received federal onetime COVID-response funding, those funds are not included in these tallies, as all federal funds are excluded from this measure. However, in some cases, state funding for pandemic response may have been included in the data reported to TFAH. For some states, COVID-response funding may have resulted in an increase in the state's overall public health funding for the year. Other states may have reallocated money from one line to another with little impact on the overall funding level. Some states experienced sizable fluctuations in the state-supported funding of public health services due to a host of pandemic-related funding actions. In some cases, a temporary infusion of state-supported funds might have been appropriated for a single year. In other cases, state funding might have been temporarily cut and replaced by pandemic-related federal funding.

In Alaska, at the beginning of the COVID-19 pandemic, the state established a dedicated supplemental fund for related activities, as necessary. As federal aid became available, it supplanted the state funds, creating the appearance of a major reduction in FY 2021. In New Jersey, the end of FY 2020 was extended by three months and the beginning of FY 2021 was delayed by three months. Owing to the significant and persistent demands on the time of state public health officials, which responding to the COVID-19 pandemic has necessitated, five states (Delaware, Kansas, Rhode Island, Utah, and West Virginia) were unable to provide TFAH with public health funding data for FY 2021.

Source: TFAH analysis of states' public health funding data.

Recommended Policy Actions

To protect and improve the health and well-being of all U.S. residents, TFAH recommends that Congress and the Administration take the following actions for FY 2023 and beyond. (See Table 4 for summary.)

Substantially Increase Core Funding to Strengthen the Public Health Infrastructure and Workforce

Increase CDC's base appropriation. Congress must increase CDC's annual program level to at least $11 billion in FY 2023 to strengthen the agency and expand proven public health and prevention programs to all states. Many effective programs fail to reach all states due to underfunding, including the ones highlighted in this report. The CDC's overall funding line has increased marginally over the past 10 years, while the nation's public health needs and population have grown substantially.

Invest in cross-cutting public health foundational capabilities at federal, state, local, tribal, and territorial health agencies. Chronic underfunding, as well as the boom-and-bust cycle created through emergency supplementals followed by the erosion of funding for public health, prevents health departments from developing and maintaining cross-cutting capabilities and the required workforce. Congress should enact a mandatory, annual $4.5 billion Public Health Infrastructure Fund, such as the one proposed in the Public Health Infrastructure Saves Lives Act, to sustainably support health agencies and ensure an adequate workforce to effectively implement public health programs.[182,183] As an interim step, Congress should provide annual appropriations for the CDC's public health infrastructure funding line. TFAH supports $1 billion for this request in FY 2023.

Invest in sustained public health data modernization. Congress should build on investments made through the CARES Act (P.L. 116-136), the American Rescue Plan Act (P.L. 117-2), and annual appropriations to modernize public health data and surveillance systems at all levels. These investments will help build the foundations for data-sharing across public health, modernize the CDC's services and systems, leverage new data sources, and ensure public health can act on innovative data analytics. However, Congress must augment and sustain these advancements if they are to make up for decades of neglect. The Data: Elemental to Health campaign estimates at least $7.84 billion is needed over the next five years for the CDC's Data Modernization Initiative to strengthen public health data collection and reporting at the state and local levels.[184]

Fund the CDC to support state and local public health laboratories. Congress should increase funding to strengthen the Laboratory Response Network and modernize state and local public health laboratories. Currently, the Epidemiology and Laboratory Capacity grant is only funding approximately half of what laboratories and health department epidemiologists nationwide need, with little funding for cross-cutting systems and workforce. The Association for Public Health Laboratories estimates a $261 million gap in Epidemiology and Laboratory Capacity annual funding needs.[185]

Bolster recruitment and retention of the public health workforce. Emergency funding for COVID-19 can bolster public health staffing in the short-term but cannot be used to recruit and retain a well-trained public health workforce in the long-term. In addition to infrastructure and data investments, Congress and state governments should prioritize the development of a more diverse and larger public health workforce by funding the public health workforce loan repayment program and other incentives, and by funding the CDC's public health workforce lines.

Restore and grow the Prevention and Public Health Fund. The Prevention and Public Health Fund has made critical investments in evidence-based programs, such as expanding vaccine infrastructure, building laboratory and surveillance capacity, and promoting tobacco cessation. Congress should increase the Prevention Fund to its original authorized amount, and HHS should ensure that funds are used for their authorized purpose of promoting public health and prevention.

Invest in the Nation's Health Security

Strengthen public health emergency preparedness, including within the healthcare system.

- **Public Health Emergency Preparedness (PHEP).** Congress should increase funding to the CDC's PHEP Cooperative Agreement program to at least $824 million in FY 2023—the level authorized in 2006—to ensure states and localities have the core resources necessary to respond to an escalating number of emergencies. PHEP appropriations have been cut significantly from $918 million in FY 2002 to $715 million in FY 2022, or 48 percent when accounting for inflation.[186] This funding would help restore capacity at health departments impacted by cuts and help the nation's laboratories keep pace with current technologies and threats.

- **Hospital Preparedness Program (HPP).** In FY 2023, Congress should provide at least $474 million to the HPP, the primary federal source of funding to help the healthcare delivery system prepare for and respond to disasters. HPP appropriations have been cut drastically from $515 million in FY 2003 to $296 million in FY 2022, or 61 percent when accounting for inflation.[187] HPP supports multiple approaches to develop healthcare-system readiness, but limited funding has prevented some regions from fully developing this capacity.

Support vaccine infrastructure to reduce preventable infectious diseases.

Congress should increase support for immunization infrastructure, outbreak prevention, and outbreak response by appropriating $1.13 billion in FY 2023 for the National Immunization Program. The CDC's immunization program supports state and local immunization programs that increase vaccine rates (including among underserved populations), respond to outbreaks, educate the public and providers, conduct surveillance, improve vaccine confidence, establish partnerships, and improve information systems. Funding has not kept up with needs, and the early sluggishness in vaccination campaigns against COVID-19 were partially due to underfunded state and local systems. The pandemic also demonstrated the need for more extensive communications on the importance, effectiveness, and safety of routine vaccinations and to combat misinformation.

Intensify efforts to slow the spread of antimicrobial resistance (AMR).

- **Prevention and surveillance.** Congress should significantly increase investments in innovative public health initiatives to detect and combat AMR, including the CDC's Antibiotic Resistance Solutions Initiative, Advanced Molecular Detection, and National Healthcare Safety Network. The CDC is investing in every state to strengthen antibiotic-resistance lab capacity, track infections across

healthcare systems, detect new threats, disrupt pathogens, coordinate prevention strategies, and educate healthcare providers on appropriate antibiotic use. These investments have already had an impact, helping contribute to an 18 percent reduction in deaths from resistant infections since 2013. Increases should also support global capacity to prevent and detect resistant infections to combat this national security risk.

- **AMR innovations.** Congress should support sustainable funding and bold incentives for antimicrobial innovation to address the market failure in development of new antibiotics. Congress should increase investments in AMR research at the Biomedical Advanced Research and Development Authority and enact the PASTEUR Act, which would create subscription contracts that reward successful innovation without encouraging overuse.

Prepare and mitigate the health impacts of climate change and other environmental health threats.

- **Climate and Health Program.** The administration and Congress should increase funding to $110 million in FY 2023—as President Biden's discretionary funding request calls for—to expand the CDC's Climate and Health Program so that every state, large city, tribe, and territory can become climate-ready.[188] Only nine states and two localities are grantees of the CDC's Climate and Health Program, which gives these communities assistance to implement its Building Resilience Against Climate Effects (BRACE) framework. The BRACE framework can identify likely climate impacts, potential health impacts, and high-risk populations and locations, and it can create and implement adaptation plans.[189]
- **Environmental Health Tracking.** Congress should increase funding to $75 million to extend the CDC's National Environmental Public Health Tracking Program to every state.[190] The network helps states collect key data around environmental health threats and target interventions to save lives.
- **Climate Change and Health Equity.** Congress and the administration should provide funding for the HHS Office of Climate Change and Health Equity to support its mission of serving as a government-wide hub for climate and health policy in pursuit of equitable health outcomes.

Create a Health Defense Operations budget designation.

The surge of short-term, time-limited funding in COVID-19 supplemental appropriations legislation was important for America's significant response needs but is not a sustainable source of funding to finance this country's pandemic preparedness requirements. Furthermore, annual discretionary appropriations continue to be impeded by thousands of competing priorities in the non-defense discretionary budget category, making it nearly impossible to invest in medium- to long-term pandemic prevention. Congress should create a Health Defense Operations budget designation to exempt specific health defense programs central to pandemic preparedness from the annual discretionary budget allocations and ensure these critical activities receive sustainable resources necessary to secure Americans' health and economic and national security.[191]

Address Health Inequities and Root Causes of Disease

Address community-wide social determinants of health. SDOH, such as housing, employment, food security, and education, have a major influence on individual and community health.[192] Indeed, these factors are estimated to contribute as much as 80 to 90 percent to a person's health outcomes, while traditional healthcare only accounts for 10 to 20 percent.[193] In FY 2021, Congress provided first-time funding of $3 million for the creation of a CDC Social Determinants of Health Program. For FY 2023, TFAH urges Congress to build on this initial investment and fund the program at $153 million—as President Biden's discretionary funding request calls for—to create a national investment in addressing the conditions that affect the health and livelihoods of all communities and prevent disease at the outset.[194] The funding would support efforts in all states and territories to coordinate multisectoral partnerships to address SDOH.

Focus funding on populations at elevated risk due to the impact of structural racism, poverty, systemic discrimination, and disinvestment. Communities disadvantaged by systemic discrimination, including those living with health disparities as a systemic marginalization, must be a priority for funding and investment. Federal health agencies should consider disease burden and social context when determining grant-making eligibility criteria and enable capacity-building funding so the communities with the greatest need can benefit from competitive grant mechanisms. Congress should expand discretionary health funding to address health inequities and to ensure funding is reaching under-resourced, marginalized, and disproportionately impacted communities.

Safeguard and Improve Health Across the Lifespan

Significantly increase investment in chronic disease prevention. Congress should counteract years of underfunding of the CDC's National Center for Chronic Disease Prevention and Health Promotion. Prior to the pandemic, a majority of U.S. adults had at least one chronic condition and the pandemic added to this pattern. Many of these conditions could be prevented or managed with appropriate support. Under current funding, the CDC cannot provide adequate resources to all eligible states or communities, further hurting the health of those in states that already have high rates of disease.

Within the Chronic Disease Center, TFAH recommends increasing funding for:

- **Division of Nutrition, Physical Activity and Obesity.** Congress should allocate at least $125 million in FY 2023 to the CDC's Division of Nutrition, Physical Activity and Obesity to allow the CDC to continue building out key programs, including extending the State Physical Activity and Nutrition Program (SPAN) to all 50 states. SPAN enables states to implement evidence-based strategies to improve overall health and prevent increasing levels of the obesity epidemic, but currently only supports 16 states.[195] SPAN grantees focus their efforts on increasing breastfeeding support, disseminating food-service guidelines, promoting community physical-activity access strategies, and integrating both nutrition and physical activity standards into statewide early care and education systems.
- **Racial and Ethnic Approaches to Community Health and Healthy Tribes (REACH).** Congress should appropriate at least $102.5 million to the CDC's REACH and Healthy Tribes programs in FY 2023. Within this total, TFAH recommends including at least $75.5 million for the REACH grant program to continue scaling to allow all eligible and approved, but unfunded, communities to benefit. The REACH program is one of the only CDC programs that explicitly focuses on improving chronic disease outcomes and health equity for specific racial and ethnic groups in communities with high incidence rates for such diseases. REACH communities report decreases in smoking, reductions in obesity, increases in fruit and vegetable consumption, and improvements in healthy behaviors. In addition, Congress should allocate $27 million for Healthy Tribes to expand the three programs under this funding line, which includes Good Health and Wellness in Indian Country, Tribal Epidemiology Centers for Public Health Infrastructure, and Tribal Practices for Wellness in Indian Country. Together, these programs work with American Indian tribes, Alaska Native villages, tribal organizations, and tribal epidemiology centers to promote health, prevent disease, reduce health disparities, and strengthen connections to culture and lifeways that improve health and wellness.

Invest in primary prevention of behavioral health concerns and Adverse Childhood Experiences (ACEs). Evidence shows hospitalizations for suicidal ideation and attempts, mental health conditions, intimate partner violence, and child abuse and neglect have increased during the pandemic.[196,197] A June 2021 CDC report, for example, found that in February/March 2021, emergency department visits related to suspected suicide attempts by girls ages 12 to 17 years old were almost 51 percent higher than during the same period in 2019.[198] In addition, after years of rising suicide rates among Black children under age 13, Black youth are now nearly twice as likely to die from suicide compared with white youth.[199] These developments underscore the need to expand programs that translate research into effective prevention of behavioral health concerns.

TFAH recommends Congress invest in the CDC and SAMHSA programs that are focused on prevention, including:

- **Division of Adolescent and School Health.** Congress should increase funding for the CDC's Division of Adolescent and School Health (DASH) program to $100 million in FY 2023. DASH funds local education agencies to implement school-based programs and practices designed to reduce and prevent HIV, sexually transmitted diseases, and pregnancy among adolescents. DASH's programs reduce sexual risk behaviors, among other positive outcomes, for less than $10 per student.[200] In fact, studies released in January and February 2022 found that these programs resulted in significant decreases in sexual risk behaviors, violent experiences, and substance use.[201,202] During the COVID-19 pandemic, DASH also leveraged its programs to improve student connections to mental health services during virtual learning. An increase in DASH funding to $100 million would allow the program to expand to all 50 states and 100 of the largest local education agencies,

reach 25 percent of all students, and help address the severe negative impacts of the pandemic on youth mental health.

- **Suicide-prevention and -intervention efforts.** Increase the SAMHSA and CDC funding for early intervention and suicide-prevention efforts, such as the Garrett Lee Smith Campus Suicide Prevention Grant Program, which supports evidence-based suicide-prevention activities on college campuses and other settings, including screening and connecting students to behavioral health services. The CDC's Comprehensive Suicide Prevention program funds states, territories, and tribes to implement comprehensive suicide-prevention plans using multisector partnerships and data to inform prevention efforts with the goal of reducing suicide by 20 percent by 2025.[203] As the CDC explains in its Suicide Prevention Strategic Plan for FY 2020–2022, a prevention approach centered on public health departments can leverage their focus on SDOH, shared risk and protective factors, and community services. Congress should provide at least $40 million for the CDC's Suicide Prevention work in FY 2023 to expand syndromic surveillance of nonfatal suicide-related outcomes, invest in research into risk factors among vulnerable populations, and increase comprehensive prevention approaches on the state level.

- **Preventing Adverse Childhood Experiences.** ACEs can have profound lifetime impacts on people's health, but public health approaches can prevent ACEs and their impacts. Given the toll of the pandemic on children's well-being, Congress should provide at least $15 million in FY 2023 for the CDC's ACEs work to enable additional states to address this crisis. In addition to research into the conditions that contribute to substance misuse and suicide, the CDC should support state activities to conduct surveillance and implement comprehensive strategies to prevent ACEs through the Preventing ACEs: Data to Action program.[204] The CDC's work takes a comprehensive approach to preventing ACEs, including by building the evidence base through support for innovative research and evaluation, supporting surveillance and data innovation, and identifying strategies and improving capacity and awareness to prevent ACEs across the country.[205] Under this program, state-level entities implement sustainable ACEs surveillance and strategies from the CDC's *Preventing ACEs: Leveraging the Best Available Evidence* publication, including economic assistance to families and efforts to connect youth to care.

Support Age-Friendly Public Health Systems. Congress should provide at least $50 million in FY 2023 for a healthy aging program within the CDC to build state, local, tribal, and territorial public health department capacity to promote the health of older adults. Age-Friendly Public Health System interventions can optimize the well-being of adults ages 65 or over, prolong their independence, and reduce their use of expensive healthcare services. Yet there is no standalone program at the CDC that supports state, local, tribal, and territorial public health departments to improve older adult health and well-being. A dedicated public health role is necessary to foster multisector collaboration and to develop effective solutions to improve the lives of older adults.[206]

Summary of Recommended Funding Increases for FY 2023

This chart summarizes current funding (FY 2022) and TFAH-recommended funding levels (FY 2023) for the CDC and ASPR programs associated with the report's recommendations. TFAH recommends that the CDC total funding for programs—encompassing programs discussed in this report and others—be $11 billion in FY 2023. For ASPR's Hospital Preparedness Program, TFAH recommends increased funding for FY 2023 to $474 million.

Table 4: Summary of Recommended Funding Increases

Program/Division	FY 2022	FY 2023 (recommendation)
Centers for Disease Control and Prevention (CDC)		
Public Health Infrastructure Capacity	$200 million	$1 billion
Public Health Data Modernization Initiative	$100 million	$1.57 billion
Public Health Emergency Preparedness Cooperative Agreement	$715 million	$824 million
Immunization Program	$651 million	$1.13 billion
Climate and Health Program	$10 million	$110 million
Environmental and Health Outcome Tracking Network	$34 million	$75 million
Social Determinants of Health	$8 million	$153 million
Division of Nutrition, Physical Activity, and Obesity	$58 million	$125 million
Racial and Ethnic Approach to Community Health and Healthy Tribes	$65.9 million	$102.5 million
Age Friendly-Public Health (new proposal)	N/A	$50 million
Division of Adolescent and School Health – HIV	$36 million	$100 million
Suicide Prevention	$20 million	$40 million
Adverse Childhood Experiences	$7 million	$15 million
Total CDC Programs	**$8.4 billion**	**$11 billion**
Assistant Secretary for Preparedness and Response (ASPR)		
Hospital Preparedness Program	$296 million	$474 million

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