

PRIORITY 2: Strengthen Prevention, Readiness, and Response to Health Security Threats.

Prevention, detection, and response to health risks are essential to the health and economic security of the nation. In 2023, the United States experienced a record number of billion-dollar weather disasters,⁶⁸ while extreme heat remained the deadliest weather threat.⁶⁹ The past two decades have seen waves of emerging infectious disease outbreaks, from the 2003 severe acute respiratory syndrome (SARS) outbreak to the over 1.8 million worldwide deaths due to the COVID-19 pandemic, to the recent human cases of avian influenza. In addition, pockets of vaccine hesitance have led to the reemergence of vaccine-preventable diseases like measles in the U.S. and globally.^{70,71} Vaccination coverage has declined among children entering kindergarten, dipping below the 95 percent coverage target nationwide and much lower in some communities,

fueling the likelihood of preventable outbreaks and suffering.⁷² In addition, an estimated 50,000 U.S. adults died each year from vaccine-preventable diseases prior to the COVID-19 pandemic,⁷³ and the U.S. spends an estimated \$26.5 billion annually treating such diseases in adults over 50.⁷⁴ Natural and man-made disasters, from train derailments to terrorism, have far-reaching impacts on the physical and mental health and well-being of communities.

Every part of the country and all residents are at risk for health emergencies. Yet, some populations bear a disproportionate risk for poor health outcomes and a more protracted recovery from disasters. Centering equity to ensure overall population health will create more resilient communities.

PROBLEM:

Public health hazards, such as infectious disease outbreaks, disasters, and bioterrorism, are increasing and pose significant threats to the nation's security, well-being and prosperity. Too often, federal responses to health emergencies are hampered by inadequate funding and challenges to public health authorities. The nation's high rates of chronic disease and underlying health and socioeconomic disparities create additional vulnerabilities.

SOLUTION:

The nation needs to redouble its efforts to prepare for and respond to public health emergencies, wherever they originate. We must build on recent progress and heed the lessons of the COVID-19 pandemic in order to protect the health of all Americans.

TFAH's recommendations focus on modernizing the systems and policies needed to ready the nation for 21st century health threats. The recommendations of this section cover three domains: 1) cross-cutting readiness and response, 2) containment of infectious disease outbreaks, and 3) response to health risks from environmental hazards and climate change. TFAH's *Ready or Not: Protecting the Public's Health from Diseases, Disasters, and Bioterrorism* report series has noted significant progress in the nation's health security enterprise since the 2001 September 11th and anthrax attacks, but the country can no longer afford to depend on decades-old systems and policies to protect the population from modern health emergencies. The White House and Congress must act with urgency to equip the health security enterprise with the resources required to protect every community.

PROGRESS MILESTONES

- The White House health security infrastructure has been enhanced through the creation of the Office of Pandemic Preparedness and Response Policy and the appointment of senior advisors to the President on biodefense and global health security.
- HHS began implementing a strategy to develop a more resilient public health supply chain including by creating an Office of Industrial Base Management & Supply Chain and issuing contracts to bolster domestic production of supplies and materials for medical countermeasures.⁷⁵
- Congress invested in innovative disease detection methods, such as CDC's Center for Forecasting and Outbreak Analytics, genomic sequencing, and wastewater surveillance.

PROGRESS MILESTONES

- Congress provided annual and one-time funding for the Infectious Disease Rapid Response Reserve Fund; a reserve of readily available money designated for HHS response actions during the early stages of an infectious disease threat.
- Between December 2020 through November 2022, the U.S. COVID-19 vaccination program is estimated to have prevented more than 18.5 million additional hospitalizations, 3.2 million additional deaths, and saved the U.S. \$1.15 trillion in medical expenditures.⁷⁶
- The availability of preventive tools for infectious diseases was expanded through the development and deployment of vaccines and antibodies for Respiratory Syncytial Virus (RSV), Mpox, and other emerging and reemerging threats.
- Vaccines for Children marked its 30th year, increasing routine vaccination for children against 19 different diseases. Routine vaccination for children born during that time period (1994 – 2023) will have prevented about 508 million illnesses, 32 million hospitalizations, and saved over 1.1 million lives.⁷⁷
- Congress passed legislation requiring coverage of vaccines in Medicare Parts B & D without cost sharing.
- Congress passed the Vaccine Awareness Campaign to Champion Immunization Nationally and Enhance Safety (VACCINES) Act to increase research and effective messaging to improve vaccine confidence and counteract misinformation.
- The Administration created the Office of Climate Change and Health Equity at HHS to serve as a department-wide hub for climate and health policy.
- Multiple agencies across the federal government collaborated on the launch of the National Integrated Heat Health Information System and its web portal, heat.gov, including the HeatRisk tool.⁷⁸
- The Bipartisan Infrastructure Investment and Jobs Act was enacted in 2021 and included significant investments in climate resilience and adaptation,⁷⁹ safe drinking water, and wastewater infrastructure.⁸⁰
- The Environmental Protection Agency (EPA) finalized stricter air quality standards on fine particulate matter and estimates that these updates will prevent up to 4,500 premature deaths, 290,000 lost workdays, and yield up to \$49 billion in health benefits.⁸¹
- EPA finalized a rule setting standards for per- and polyfluoroalkyl substances (PFAS) in the water supply.⁸² The Agency for Toxic Substances and Disease Registry (ATSDR) also released PFAS information for clinicians to guide testing and clinical management.⁸³ High levels of PFAS have been linked with health issues such as increases in cholesterol, kidney and testicular cancer, and decreases in birth weight.

IMPACT STORIES

Local/Federal Partnership Speeds Response to a Measles Outbreak

Measles is a highly contagious, potentially severe, viral infection that is mostly vaccine preventable. Thanks to an effective measles, mumps, and rubella (MMR) vaccine, measles was considered eliminated from the U.S. in 2000.⁸⁴ However, pockets of unvaccinated people put entire communities at risk. U.S. MMR coverage among kindergartners is now below the 95 percent coverage target and is much lower in some communities and increases in global measles levels mean travel-related cases can introduce new outbreaks.⁸⁵ One such outbreak occurred in Columbus, Ohio, beginning in November 2022. Columbus Public Health and the state health department were notified of two cases and initiated an investigation and response, with support from a CDC team.⁸⁶ Among the 85 cases that were confirmed before the outbreak was declared over, 80 were unvaccinated, including 25 infants too young to receive their first dose. Columbus Public Health and Franklin County Public Health interviewed patients, conducted contact tracing and monitoring, coordinated with healthcare and childcare facilities, and tracked laboratory results, along with educating the public about the importance of vaccination.^{87,88} The outbreak was successfully contained and declared over in February 2023.

Leveraging Preparedness Funding to Protect Residents from Wildfire Smoke Exposure

Federal funding is crucial to maintaining state, local, and territorial public health preparedness for a range of threats. Using its CDC Public Health Emergency Preparedness (PHEP) Cooperative Agreement funding, the state of Washington has built a robust emergency medical logistics capability that it leveraged when planning for the 2023 wildfire season. PHEP funding supports the state's planning, training, and exercising of its medical logistics capacity with local and tribal partners. This preparedness planning enabled the state to distribute 850 portable HEPA (high efficiency particulate air) cleaners purchased with state funds to local health jurisdictions, tribes, and community-based organizations within 24 hours of orders being placed. As demand for the cleaners continued the state used PHEP funding to purchase an additional 500 cleaning units. The air cleaners were used during the 2023 wildfire season in areas experiencing wildfire smoke, reducing the number of people with underlying medical conditions and others sensitive to smoke presenting to emergency departments.⁸⁹

Ensuring Hospital Preparedness to Respond to Emergencies

Federal support is also needed to ensure the safety of patients and healthcare personnel during emergencies. In April 2023, Oklahoma's Regional Medical Response System, supported through ASPR's Hospital Preparedness Program,

coordinated a successful response to 18 tornadoes that hit central Oklahoma in one day. The healthcare coalition coordinated with hospitals, emergency medical services, public health, and long-term care facilities to respond to the disaster. The coalition identified needs at local healthcare facilities and helped coordinate an immediate evacuation and safe relocation of 79 residents of a nursing home facility that had sustained damage in the storms. Not a single resident of the facility was injured.⁹⁰

Building Local Capacity to Respond to Global Threats

Global health security is the effort to prevent, detect, and respond to infectious disease and other acute public health threats that cross geographical regions and international boundaries.^{91,92} Stopping outbreaks at the source also protects Americans' health and economic resilience. Within the U.S., CDC, the U.S. Agency for International Development, the White House, and other agencies have distinct roles in promoting and coordinating global health security. One key strategy is to build local capacity to detect and respond to health threats, which improves the speed and quality of their responses. For example, in 2022-2023, local disease detectives who had been trained through CDC's Field Epidemiology Training Program were instrumental in bringing Uganda's Ebola outbreak under control.⁹³ By supporting domestic capacity, global partners can reduce the risk and costs of a larger health crisis.

RECOMMENDATIONS

Cross-Cutting Readiness and Response

Congress should reauthorize the Pandemic and All-Hazards Preparedness Act (PAHPA). PAHPA provides the statutory framework for the nation's health emergency enterprise, including public health and healthcare readiness grants, medical countermeasures research and development, and situational awareness. Congress should leverage the opportunity to enact legislation to transform and modernize preparedness efforts through the provisions described below. Congress should avoid using PAHPA as a vehicle for weakening federal health authorities.

The White House should maintain coordination and leadership around public health emergencies and biodefense. The White House should preserve and strengthen the Office of Pandemic Preparedness and Response Policy to ensure permanent public health security leadership in the White House to advise the president and coordinate interagency activities around biodefense.

Congress should expand public health emergency preparedness funding for state, tribal, local, and territorial jurisdictions. CDC's Public Health Emergency Preparedness (PHEP) Cooperative Agreement requires at least \$1 billion per year in the near term. PHEP has saved lives by building and maintaining a nationwide public health emergency management system that enables communities to prepare for and rapidly respond to public health threats. PHEP supports nearly 6,000 state, tribal, local, and territorial preparedness staff across the country, including significant investments in laboratory, medical countermeasures distribution, and epidemiological infrastructure.

Congress should increase overall funding for the Administration for Strategic Preparedness and Response (ASPR).

Increasing ASPR's base budget would enable ASPR to expand its workforce and enable a more effective preparedness and response infrastructure at the agency. ASPR deploys response teams for a range of emergencies – from wildfires to overrun hospitals – but receives limited funding to both prepare and respond.

Congress and ASPR should strengthen the emergency readiness of the healthcare delivery system. Congress should increase its investment in Health Care Readiness and Response, administered by ASPR, which supports the preparedness of the healthcare delivery system for disasters. Severely eroded funding has created a patchwork of readiness, putting patient care at risk. ASPR should also support the Hospital Preparedness Program (HPP) by shoring up pediatric and surge capacity planning within the program.

Congress should create a Health Defense Operations budget designation to exempt health defense programs central to health security from the annual discretionary budget allocations and to ensure these critical activities receive the sustainable resources necessary to secure Americans' health, economic, and national security. The biodefense exemptions would include programs such as PHEP, HPP, the Strategic National Stockpile, and other critical programs. Budget caps and competing priorities in the nondefense discretionary budget category continue to constrain annual discretionary appropriations, making it nearly impossible to invest in medium- to long-term health defense.

Congress and HHS agencies should ensure efficient responses through crisis funding mechanisms. In addition to stable core funding, Congress should continue a no-year infusion of funds into the Public Health Emergency Rapid Response Fund and the Infectious Diseases Rapid Response Reserve Fund to serve as available funding that may provide a temporary bridge between preparedness and supplemental emergency funds. When supplemental funds are needed, Congress should provide flexibility for jurisdictions to use these funds for their most urgent response needs and for overlapping emergencies. CDC should also refine its mechanisms to distribute funding to states and localities more efficiently.

Congress and ASPR should invest in and coordinate medical countermeasures research, development, stockpiling, and distribution for a range of pathogens. Supporting the entire public health emergency medical countermeasures enterprise – from seed research to distribution – across HHS is needed to neutralize the risk of known and unknown health threats. Congress should provide additional funding for ASPR to address emerging infectious diseases, which remain a serious threat to human health. ASPR also needs additional contracting authorities, similar to those of the U.S. Department of Defense, to enable the agency to quickly procure supplies needed for public health security. ASPR should continue to ensure coordinated, aligned, and transparent medical countermeasures activities across HHS and other relevant agencies and with private sector, public health, and academic partners.

Congress should provide CDC, ASPR, and other HHS agencies additional direct hiring authority. Congress should help CDC and other HHS agencies be nimbler in response to emerging health threats or during public health emergencies by providing additional direct hiring authority during such emergencies. CDC and other relevant HHS agencies are vital to the nation’s prevention and response of public health emergencies, yet they are subject to bureaucratic hiring procedures even during times of crisis. Congress should help these agencies become more responsive by providing additional direct hiring authority during emerging threats or public health emergencies. The limited direct hiring authorities included in the Consolidated Appropriations Act of 2023 were a good start, but not nearly sufficient for the level of staffing required for large-scale events like pandemics. In addition, the HHS secretary should issue guidance on how agencies can use existing hiring authorities.

Containment of Infectious Disease Outbreaks

Congress should enact legislation to ensure access to vaccines for uninsured and underinsured adults. Uninsured and underinsured adults still face barriers to vaccination. A recent study found that adult vaccines could return up to 19 times their initial investment in health and economic benefits.⁹⁴ Congress should enact legislation authorizing a permanent program to enable all uninsured and underinsured adults to have access to recommended vaccines at no cost.

Congress should support the National Immunization Program and outreach. Congress should provide significant increases for CDC's National Immunization Program to support immunization infrastructure, outbreak response, and vaccine delivery across the country. The Immunization Program supports state, local, and territorial immunization systems to increase vaccination rates among uninsured and underinsured adults and children and respond to outbreaks of vaccine-preventable diseases. However, the growing number of outbreaks and increasing costs of immunizations means states have less money to support these efforts. Increased funding would enable jurisdictions to better respond to outbreaks, educate the public, target populations experiencing worse outcomes, improve vaccine confidence, establish partnerships with trusted messengers, and operate data systems. Congress should also increase annual funding to study and address the causes of vaccine hesitance and improve communications and engagement.

Congress should enable next generation detection and forecasting of pathogens beyond funding cliffs. Thanks to one-time investments, CDC has created the nation's first Center for Forecasting and Outbreak Analytics, expanded wastewater surveillance, and accelerated the national infrastructure for genomic sequencing through the Advanced Molecular Detection Program. However, funding cliffs, which could begin in 2024, puts this progress at risk. Congress should fund these innovative methods for detecting and modeling outbreaks. Congress should also continue to invest in core disease detection capabilities through the Epidemiology and Laboratory Capacity program.

The White House and Congress should renew the nation's global health security commitment. Congress and the Executive Branch should demonstrate a long-term, sustainable commitment to global health security by implementing the goals laid out in the National Biodefense Strategy. The White House should continue to strengthen partnerships with international bodies such as the World Health Organization, including by finalizing the international pandemic treaty, and work with partner countries to strengthen core public health capabilities. Congress should solidify America's role as a global health leader by committing sufficient resources to CDC's Global Public Health Protection program.

Congress should take significant steps to address antimicrobial resistance (AMR). Drug-resistant infections kill at least 35,000 people in the U.S. each year,⁹⁵ and the misuse and overuse of antimicrobials in humans, animals, and plants are the primary drivers of this crisis.⁹⁶ At the same time, there is insufficient investment in new antimicrobials, as they are typically used for a short time and are not as profitable for developers as treatments for chronic conditions.^{97,98} Public-private partnership in both antimicrobial development and stewardship is imperative. Congress should enact the Pioneering Antimicrobial Subscriptions to End Upsurging Resistance (PASTEUR) Act to drive sustainable antimicrobial innovation and provide resources to antimicrobial stewardship programs in hospitals and long-term care facilities. Congress should fund antimicrobial resistance activities across HHS, including CDC's antibiotic resistance initiative to detect and prevent cases.

Congress should pass the Protecting America from Seasonal and Pandemic Influenza Act to strengthen the pipeline of influenza vaccines, diagnostics, and therapeutics.

The comprehensive authorizing bill would implement and build on the National Influenza Vaccine Modernization Strategy. The bill would take steps to speed up vaccine development, support immunization information systems, strengthen the supply chain for these products, and authorize sustainable funding for the federal influenza ecosystem.

Response to Health Risks from Environmental Hazards and Climate Change

Congress should support nationwide efforts to protect against environmental and climate-related health threats through CDC's National Center for Environmental Health (NCEH).

NCEH safeguards the health of people across the country from environmental hazards such as lead poisoning, chemical exposures, and climate threats, but limited funding prevents lifesaving programs from reaching all states. Congress should provide sufficient funding for NCEH programs to reach all states, including to expand CDC's Climate and Health Program to improve climate readiness in all states and territories. Only nine states and two localities are current grantees of CDC's Climate and Health Program, which gives these communities assistance to implement the CDC Building Resilience Against Climate Effects (BRACE) framework. The BRACE framework can help jurisdictions identify likely climate-related health impacts and create and implement adaptation plans.

Congress should also increase funding to extend CDC's National Environmental Public Health Tracking Program to every state.

The network helps states collect key data around environmental health threats and target interventions to save lives. The Tracking Network also partners with the Climate and Health Program and National Oceanic and Atmospheric Administration on the Heat and Health Tracker, a national resource that provides local heat and health information so communities can better prepare for and respond to extreme heat events.

Congress should expand the ability of the Agency for Toxic Substances and Disease Registry (ATSDR) to respond to emergencies.

Congress should provide at least \$100 million in funding for ATSDR in the near term. ATSDR's expertise and ability to respond around the clock have been critical in dealing with response from incidents like the East Palestine, Ohio train derailment, Canadian wildfire smoke, and contamination from per- and polyfluoroalkyl substances (PFAS). ATSDR expands the environmental health capacity in state health departments, allowing them to do critical work to identify if and how people are exposed to hazardous substances and take steps to prevent and address those exposures.

Congress and the Administration should bolster the Office of Climate Change and Health Equity.

Congress and the Administration should provide appropriations for HHS's Office of Climate Change and Health Equity (OCCHE) to support its mission of serving as a government wide hub for climate and health resilience policy in pursuit of equitable health outcomes.

OCCHE coordinates and aligns agency-wide programs to develop climate and health resilience for populations that are disproportionately affected, climate actions to reduce health disparities, and health sector resilience and environmental harm reduction. To date, OCCHE has not received appropriations from Congress, creating challenges such as a lack of staffing stability and difficulty engaging in long-term planning.

Congress and the Administration should support interagency efforts to address the impact of extreme heat on health. The burden of extreme heat is not evenly distributed across populations; older adults, young children, pregnant people, individuals with chronic and mental health conditions, people with disabilities, people with low-incomes, people who work outdoors, people who are unhoused, and some communities of color face the most risk. Extreme heat can also be a significant contributor to severe maternal morbidity and is the leading cause of weather-related death in the U.S.⁹⁹ Congress should sustain funding for multiagency efforts to address health impacts of extreme heat, including the National Integrated Heat Health Information System.

The White House, EPA, and federal partners should take steps to improve indoor and outdoor air quality. Poor indoor air quality is a significant environmental health risk, exacerbated

during emergencies like wildfires and extreme heat events,¹⁰⁰ and drives the spread of transmission of many infectious diseases.¹⁰¹ Yet, healthy indoor air quality is not well defined and is largely unregulated.¹⁰² The Environmental Protection Agency (EPA), in collaboration with CDC, National Institute for Occupational Safety and Health (NIOSH) and other relevant federal agencies, should establish guidelines for indoor air quality in public buildings and schools and provide incentives for retrofitting existing buildings. The Administration should also protect, enforce, and strengthen the Clean Air Act, in particular the National Ambient Air Quality Standards (NAAQS) which place national limits on pollutants such as particulate matter (soot) and ozone (smog). EPA should protect particulate matter standards from legal challenges and continue to build on this progress to protect public health.

The Administration and Congress should protect and strengthen the Clean Water Rule to safeguard clean water for all U.S. residents. The rule includes measures to ensure a safe water supply, such as addressing the ongoing problem of lead, per- and polyfluoroalkyl substances, and algal toxins in drinking water; taking steps to reduce the potential for waterborne illnesses; and increasing protection against potential acts of terrorism on America's drinking and agricultural water systems.