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Dear Members of the Health, Education, Labor, and Pensions Committee,

Thank you for providing the opportunity to give input to the Committee regarding the Pandemics and All Hazards Preparedness Act (PAHPA). This comment will provide input on the gaps in current activities and capabilities authorized by the PAHPA that limit the federal government's ability to respond fully to climate threats to health security. PAHPA can address the growing challenges of climate disasters through policies that look at classification of the hazards covered under PAHPA, leadership and coordination, and data capacity building.

To address the impacts of climate change on health, the reauthorization of PAHPA should:

- 1) Amend the threats PAHPA programs are authorized to respond to include the full scope of climate impacts on health
- 2) Designate a central coordinating agency or office for preparedness efforts for climate threats to health
- 3) Leverage emerging technologies to build monitoring capacity of climate-related health threats

## **Background for this Comment:**

Climate change presents a catastrophic threat to human health and national and economic security. In 2021, the United States experienced 20 "billion-dollar" weather and climate disasters, causing 688 deaths and \$145 billion in damage. The Intergovernmental Panel on Climate Change's (IPCC) sixth report assessed the impacts of rising temperatures, finding that extreme weather events and rising sea levels would 1) increase water scarcity and lower food production productivity, 2) increase health hazards like pathogens, heat-related illness, and mental health challenges, and 3) cause damages to infrastructure and increase displacement. Climate change presents an array of *direct* and *indirect threats* to human health. Direct threats are immediate threats to human health because of climate dangers (e.g., hot temperatures, rising sea levels, and disease). Mental health issues are an emerging direct threat of climate change due to rising levels of anxiety, depression, and post-traumatic stress disorders. Indirect threats result from damages to the physical and social community infrastructure, disrupting individuals' lives. All these threats require urgent public health responses - preparedness and resilience efforts to prepare for threats before they strike

Vulnerable communities are particularly at risk. The Environmental Protection Agency (EPA) predicts minority Americans, low-income Americans, rural Americans, and older Americans will suffer worse outcomes than those with greater access to resources from climate change threats, like heat and unclean air. Frontline communities are already experiencing climate change's "first and worst" impacts. The 2021 EPA report on climate and social vulnerability predicts climate impact disparities will grow under warming scenarios of 2°C and 4°C, with minority populations, older, low-income, and rural populations experiencing a greater risk of poor health and infrastructural damage. Vulnerable populations are far more likely to live in census tracts that will be impacted by climate change. Interventions to address disparate impacts must address the systemic causes for climate change and health inequities. But there are limited tools to track

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the climate threats facing vulnerable populations. Tracking these threats will be essential to designing appropriate resilience plans for communities to respond to climate change.

Years of underinvestment though have greatly reduced U.S. public health infrastructure's budget, resources, and staff during COVID-19. The reduced infrastructure limits the capacity of local and state health departments to respond to emerging climate threats. For example, the Center for Disease Control and Prevention (CDC) has seen a 20% budget reduction from FY 2002-2022. The Hospital Preparedness Program to facilitate emergency response has been reduced by 67% from FY2002-FY2022, considering inflation. While there was \$1.1 billion allocated to staff public health departments through the American Rescue Plan Act, this money is running out and these workers will lose their jobs. Sadly, the public health workforce has already been in decline. The Kaiser Family Foundation found that local and state agencies lost almost 40,000 employees from 2008-2019. As the COVID-19 pandemic stretches into its 3rd year, rising stress and burnout threaten to cause a mass exodus of public health employees. 33% admit they consider leaving their jobs according to the Public Health Workforce and Needs Survey.

The boom and bust cycles of public health – driven by diseases versus always existing health threats - limit investment in resources and infrastructure like surveillance, data collection, and the workforce. Because of this underinvestment, states faced challenges tracking COVID-19's spread because most local and state public health departments still rely on fax machines and paper records to transmit data. Outdated technology makes it especially difficult to track threats like the direct and indirect impacts of climate change that are multi-modal, geographically dispersed, and unequally impactful. Finally, the workforce for public health is not skilled in advanced data science as there is no funding to staff these workers. As the impacts of climate change are felt more broadly, many jurisdictions will be unprepared to adapt, as we have seen with heat waves in the Pacific Northwest and ice storms in Texas.

Further, programs for climate resilience are few and massively underfunded. The CDC's Climate Ready States and Cities Initiative can only support nine states, one city, and one county, despite 40 jurisdictions having applied. The Trust for America's Health (TFAH) found increasing funding from \$10 million to \$110 million is required to support all states, and improve climate surveillance. The TFAH also found that an additional \$75 million is needed to extend the CDC's National Environmental Public Health Tracking Program, a program that tracks threats and plans interventions, to every state. Finally, the Office of Climate Change and Health Equity, which is the sole office within Health and Human Services dedicated to this important intersection of climate and health, remains unfunded and without permanent staff.. FY2023 appropriations proposed \$3 million for the office, but it was not included in the 2023 Omnibus.

90% of United States counties had federal disaster declarations from 2011-2021 covering over 300 million people, all of which have had consequential impacts on health security. PAHPA authorizations can take tangible steps toward improving federal responses to health emergencies caused by climate threats.

## **Recommended Actions for Addressing Gaps in PAHPA:**

## 1) Reclassification of Which Disasters Count for Unlocking Federal Aid

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PAHPA programs, like the Natural Disaster Medical System (NDMS), National Health Security Strategy, and Hospital Preparedness Program (HPP), are currently only authorized to apply to natural disasters recognized under the Stafford Act. Yet, emerging disaster threats like extreme heat and wildfire smoke are having enormous impacts on health. Wildfire smoke causes 10,000 deaths and billions of dollars of economic losses annually. Smoke impacts exceed their corresponding flame impacts; yet, wildfire strategy and funding largely focus on flames and their impacts. Further, air particulate pollution is becoming more threatening as the atmosphere warms as warming causes more stagnating pollution. An estimated 107,000 premature deaths a year are caused by small particles. On extreme heat, there are estimated to be more than 1,300 deaths per vear in the United States due to extreme heat, even though some "heat-related" deaths may not be reported as such because many official records fail to attribute these deaths. These threats are disproportionately affecting states in the Southern United States. Nevada and Arizona have the highest deaths from heat illnesses from 2018-2021. In those four years, heat has been among the causes of death for 571 people in Nevada and 1,298 people in Arizona. That's 4.54 and 4.46 deaths per 100,000 residents respectively – compared to the U.S. average of 0.35 per 100,000 residents over the same period. In order to ensure that all health impacts of natural disasters can receive a comprehensive response, PAHPA must extend the definition of a public health emergency to unlock funding, strategic coordination, and capacity building to address all the health impacts of extreme weather and climate disasters.

PAHPA currently uses the Stafford Act to define the natural disasters that unlock federal resources like the HPP and NDMS. Yet, Stafford does not encompass all aspects of loss due to climate change, only the costs of property damage. Impacts like loss of life, quality of life, health, and livelihoods due to shocks, such as extreme weather events, as well as chronic stressors, such as heat, air pollution, and sea level rise are not considered. PAHPA should specifically authorize these programs to respond to threats like extreme heat, concentrated air pollution, and wildfire smoke that are not included in the Stafford Act. If possible, E&C should look at amending the Stafford Act Sec. 102 to include wildfire smoke, concentrated air pollution, and extreme heat as Major Disasters.

Finally, the reauthorization of PAHPA should establish policies to advise federal, state, local, and Tribal governments on responding to dual and compounding disasters, which are not mentioned in previous PAHPA reauthorizations. The COVID-19 pandemic proved why planning for dual and compounding disasters is vital, as local and state governments grappled with both pandemics and natural disasters.

## 2) Establish Leadership and Coordination Efforts at the Intersection of Climate and Health

There is no funded agency or office responsible for holistic, interagency management of the health threats of natural disasters and climate change. There is an immense need for an organization to take a leadership role in the following three efforts: 1) strengthening holistic natural disaster resiliency and response efforts within the healthcare and public health sectors through interagency collaboration 2) orchestrating and supporting efforts to close information gaps, synthesize data, and identify practical applications of information on natural disasters and climate threats and 3) coordinate efforts to develop communication and education on climate-related health threats.

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It is unlikely that a currently authorized agency could take on this role. While Assistant Secretary for Preparedness and Response (ASPR) has started to provide documentation and strategies for improving health systems' climate resiliency, but overall has limited capacity to address climate threats alongside its extensive biodefense efforts. The Federal Emergency Management Agency (FEMA) has provided direct funding to hospitals for emergency response but often focuses on property and instrumentation costs versus focusing on the quality of life improvements for those impacted by climate threats. The Environmental Protection Agency (EPA) has a climate change adaptation resource center, and funding unlocked from the Inflation Reduction Act for pollution reduction and resiliency planning, yet as a regulatory agency lacks the ability to engage in systematic coordination of efforts. Finally, the Center for Disease Control and Prevention (CDC) has developed several meaningful resiliency and adaptation frameworks and funding infrastructures for local and state public health systems through its Climate and Health programs, but as mentioned before lacks the critical capacity to be the coordinating agency on climate change.

The unfunded Office of Climate Change and Health Equity (OCCHE) has been taking on the greatest role of interagency collaborations at the climate and health intersection. OCCHE's coordination and leadership of the Interagency Working Group on Extreme Heat, along with the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Environmental Protection Agency (EPA) serve as a model for additional climate and health interagency coordination. An authorization for an agency to coordinate preparedness efforts for climate and natural disaster threats to health security could ensure a future where these efforts become formally funded and executed by OCCHE.

A potential demonstration of the efficacy of this new coordinating agency could be community resilience hubs, a recommendation made through the <u>Federation of American Scientists Wildfire</u> <u>Accelerator</u>, described more in-depth below:

Community resilience hubs equipped with heating, ventilation, and air conditioning and powered by distributed clean energy resources can reduce harmful environmental health exposures while expanding broader community resilience amid extreme weather events, natural disasters, and grid outages. Local governments across the United States and Canada have established resilience hubs focused on disaster and emergency response; pilot efforts to build resilience more holistically are underway in Baltimore, Maryland, and Northern California.

To support these efforts, PAHPA could serve as a vehicle to require the new coordinating agency for climate and health, CDC, EPA, and FEMA, in partnership with state and local public health and emergency response agencies and community-based organizations, to assess resilience hub needs and resources requirements and develop a set of best practices for resilience hub design to mitigate exposures associated with natural disaster events. For existing or planned resilience hubs, require reporting on use during climate-related events, natural disasters, and grid outages, including a range of metrics such as accessibility and equity. Hubs often already collect data for public safety purposes; it should be standardized and reported annually to interagency groups focused on climate mitigation and adaptation, emergency response, as well as to Congress. Resilience hubs can reduce hazard exposures and strengthen community-level resilience to provide support during extreme weather events, natural disasters, and grid outages. Resources to

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support interagency coordination, distributed energy resource deployment, and data collection efforts can bolster and inform future and ongoing resilience hub planning and implementation efforts.

# **3**) Leverage Emerging Technologies to Build Monitoring Capacity of Climate-Related Health Threats

Building data capacity is essential for tracking climate threats to promote health security and protect those most vulnerable. Responding effectively to climate threats will require an extensive build-out of data infrastructure to monitor threats, track trends, and analyze climate impacts to design place-specific adaptation plans. Data can inform communities facing climate threats. Climate and public health planning officials must bring these frontline stakeholders into adaptation planning conversations to meet community needs. A program should be authorized to conduct the following data capacity-building activities:

1. Modernize and standardize data collection, focusing on data sharing capacity between health providers and public health agencies.

Congress should appropriate more funding towards CDC's Climate Ready States and Cities Initiative with a specific target of digitizing the data infrastructure of public health departments. This will ensure that departments can efficiently track emerging climate threats and respond with adaptation strategies. Funding will be needed to staff talent to implement this effort. Further, the CDC and the Office of the National Coordinator for Health Information Technology should collaborate to advance interoperability between public health departments and medical systems to enable collaborations for climate adaptation.

2. Develop affordable multi-modal monitoring technologies to increase capacity to identify emerging climate threats.

Many communities live beyond EPA's environmental monitoring infrastructure boundaries. For example, 120 million Americans live in areas without small particle air pollution monitoring. Engineering strategies that lower the costs of these sensors and make them accessible to local public health departments will be essential to tracking air, water, and soil quality, amongst other climate markers that tie to good health. While the Biomedical Advanced Research and Development Agency (BARDA) only focuses on biodefense, its scope should be extended to include the development of technologies that improve our tracking of climate threats to health as well as our treatments of those impacts to health. BARDA can partner with the growing number of public health laboratories in states across the country to directly translate these new technologies into the hands of practitioners.

3. Empower vulnerable communities through inclusion in public health planning, policy development, and budgeting

The communities that will bear the brunt of climate change often do not have a seat at the decision-making table. The CDC and EPA should co-develop guidance requirements and technical assistance programs to facilitate participatory decision-making by public health department grant recipients.

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Addressing wildfire smoke impacts provides an important case study for what this could look like in practice. Through recommendations developed by the <u>Federation of American Scientists'</u> <u>Wildfire Accelerator</u>, we can see how leveraging research and data capacity can improve preparedness efforts and strengthen federal responses:

To better track health impacts of wildfire smoke, PAHPA, or an agency it deems responsible, could:

- Direct the CDC to create a retrospective data inventory estimating morbidity and mortality due to smoke for individual wildland fires and publish their findings in National Interagency Fire Center (NIFC) wildfire impact summaries.
- Direct the CDC to increase epidemiologist access to the National Vital Statistics System, to enhance the scientific community's ability to study possible linkages between smoke and health impacts.

**To enable the consideration of smoke-related health impacts in wildland fire management,** PAHPA, or an agency it deems responsible, could:

- Direct EPA to define wildfire-specific concentration-response functions for use in estimating health impacts in the BenMAP-CE tool.
- Direct NIH to create Research-Center-scale grants to study health impacts of wildfire smoke. Direct NIH to hire new staff to translate the findings for wildfire management strategists.
- Direct the US Forest Service (USFS), CDC, and EPA to continue researching the health impacts of smoke from different types of wildland fire (e.g., prescribed burns compared to unplanned wildfires), hiring new staff as appropriate. A more detailed understanding is critical to optimizing prescribed-burn strategy.
- Direct the NIFC, USFS, EPA, and CDC to create models linking parcel-specific landscape management to long-term smoke emissions and resulting health impacts (and hire new staff as appropriate). These models are critical to optimizing location-specific prescribed burn strategies and evaluating the smoke-related public health tradeoffs of alternative management strategies (e.g., prescribed burn strategies compared to suppression-focused strategies of the past).

Thank you for the full consideration of this comment. If it would be helpful to discuss any of the above items more in-depth, I can be reached at <u>gwickerson@fas.org</u>.

Sincerely,

Grace Wickerson Science Policy Fellow, Federation of American Scientists