All-Hazard Preparedness and Response is Not Sustainable Without Increased Funding for Public Health Laboratories

APHL POSITION STATEMENT | SUNSETS SEPTEMBER 2028

Statement of Position

Public health laboratories (PHLs) are a critical asset to the national laboratory system that must be fully resourced to respond at the front line to all-hazard threats.[1] Therefore, it is essential to our nation's preparedness that PHLs receive increased funding to recruit and retain highly trained technical staff, purchase and maintain sophisticated instrumentation and modernize the facilities necessary to respond to all-hazard threats quickly and reliably at any time.

Recommended by: **APHL Public Health Preparedness and Response Committee**
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Background

PHLs monitor and detect threats to protect the health and safety of the public by providing the essential data needed for decision-making to inform action and reduce health inequities. While the population served by public health laboratory (PHL) staff has grown by more than 50 million since 2000, the PHL workforce has started to erode due to a number of challenges.[2,3] The 1995 sarin gas attack in Tokyo and the introduction of anthrax into the United States Postal Service in October 2001 clearly demonstrated the vital importance of PHLs in emergency preparedness and response. Since the events of 2001, the scope of testing performed by PHLs has evolved to improve detection and response for all-hazard threats, both man-made and natural in origin, such as emerging infectious diseases, natural disasters, and biological, chemical, radiological and nuclear agents. Recent responses include Ebola virus disease, mpox, coronavirus disease (COVID-19), e-cigarette or vaping product use-associated lung injury (EVALI) and the ongoing opioid crisis.

The federal government provides limited baseline funding for state, local and territorial public health preparedness and response via the US Centers for Disease Control and Prevention (CDC) Public Health Emergency Preparedness (PHEP) and Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC) cooperative agreements.[4,5] Annually, PHLs receive a portion of their jurisdiction's PHEP and ELC funding to help maintain the workforce, laboratory instrumentation and facilities critical for day-to-day operations. PHLs also utilize PHEP funding to support activities related to the Laboratory Response Network (LRN) – an integrated network of domestic and international laboratories established in collaboration with the CDC, the Federal Bureau of Investigation and the Association of Public Health Laboratories (APHL).[6] Today's LRN stands ready to rapidly detect and characterize biological and chemical threats, emerging infectious diseases and is capable of responding to other public health emergencies.[6] Development and maintenance of these testing capabilities requires consistent investment in federal, state and local funding to preserve and continuously build the requisite PHL capacity. This includes highly trained staff, state-of-the-art laboratory instrumentation, modern technologies for electronic data exchange and laboratory informatics, safe and secure facilities, courier systems and training programs.

Gaps in the Public Health Laboratory System

Despite the demonstrated effectiveness of the LRN, significant gaps in the ability of laboratories to prepare for and respond to all-hazard threats still remain. In today's world, the growing population relies on PHLs to quickly and accurately detect and identify any and all biological, chemical or radiological threats, including emerging novel threat agents. When such incidents occur, questions arise that must be answered with gripping urgency and absolute reliability; however, PHLs cannot always do so because of gaps that remain in their overall preparedness capabilities and capacities.

Critical gaps impacting PHL preparedness include:

- Recruitment, retention and continuous training of a highly skilled workforce,
- Sustainable funding to purchase, operate and maintain state-of-the-art laboratory instrumentation,
- Maintenance of laboratory facilities,
- Consistent training and outreach with clinical and other first line of defense laboratories (e.g., environmental, radiological, etc.),
- Effective methods to rapidly scale up testing during public health emergencies,
- Modern technologies for results analysis and standardized data exchange systems in all jurisdictions, and
- Analytical laboratory capabilities and testing capacity for monitoring and emergency response to radiological incidents and threat agents across the jurisdictional level.

Funding Needs to Support the Functions of Public Health Laboratories

PHLs rely heavily on federal funding to resource and maintain their emergency preparedness and response capabilities. The downward trend in base-level federal funding appropriated by Congress for public health emergency preparedness observed over the past two decades is of great concern to APHL and its members. Approximately 90% of preparedness activities at state and local PHLs are funded via CDC's PHEP cooperative agreement on an annual basis.[7] However, the funding awarded to jurisdictions between 2003 and 2021 was reduced by almost half when accounting for inflation.[8] Base-level federal funding is not adequate to sustain preparedness activities at PHLs, thus hindering our nation's response to public health emergencies. Furthermore, federal funding received by public health departments to support jurisdictional laboratory preparedness activities often is shifted to address requirements of other priority public health programs, causing discrepancies that impact laboratory coordination and preparedness across jurisdictions. If this destructive trend continues, past investments made by PHLs to strengthen their response capabilities and capacity for all-hazard threats will be lost due to the lack of a properly trained workforce, inoperable equipment and nonfunctioning facilities. The gaps that currently exist will not only worsen but continue to threaten the viability of our PHL system.

As public health threats continue to emerge around the world, the expertise of PHLs has never been more valuable and vulnerable. Past public health emergencies have proven that our nation's PHLs need consistent, continuous and flexible funding to invest in our readiness now, so they can meet the threats of today – and tomorrow. Therefore, APHL strongly believes it is essential to our nation's preparedness that PHLs consistently receive increased funding, to sustain capabilities, address existing gaps and implement the advancements needed to ensure sustainable all-hazard preparedness and a coordinated national laboratory system capable of responding to the next threat.

APHL's Recommendations

Congress

- Increase congressional funding for the CDC, Food and Drug Administration (FDA), Environmental Protection Agency (EPA) and US Department of Agriculture (USDA) to strengthen their capabilities to prepare for and respond to all-hazard threats and ensure the availability of skilled personnel who can provide guidance and technical assistance to state, local, tribal and territorial public health departments.
- Increase congressional funding for the CDC, FDA, EPA, and USDA cooperative agreements to provide funding for laboratory programs and networks to address gaps in PHL capabilities and capacities, expand readiness for new and existing threat detection and maintain day-to-day operations.
- Dedicate funding for CDC to provide stable and predictable funding (e.g., PHEP and ELC) for jurisdictional public health departments to sustainably replace and modernize physical and technological laboratory facilities and infrastructure, accounting for lifecycle costs, such as initial cost, service agreements and preventative maintenance, modifications, and routine overhead expenses needed to maintain and repair high containment laboratory facilities.

- Establish a stream of readily available funding for PHLs to rapidly resource response operations during public health emergencies or large-scale surge events until supplemental emergency response funds are available.

Centers for Disease Control and Prevention

- Provide dedicated funding for PHLs to support activities related to strengthening laboratory readiness and response capabilities for all-hazard threats in new and existing cooperative agreements.
- Provide sustainable and predictable funding (e.g., PHEP and ELC) to state, local, territorial, and where eligible, tribal public health departments, so that PHLs can make permanent investments that are not influenced by the lifetime of a grant.
- Expand flexibility of federal funding to support cross-jurisdictional laboratory preparedness and response efforts.

State, Local, Tribal and Territorial Governments

- Actively engage PHL staff in budget conversations to better understand and address the needs of laboratories.
- Adequately fund PHLs so they can maintain and expand testing capabilities and capacities, employ enough staff and invest in workforce development, replace and enhance laboratory infrastructure and modernize data exchange technologies.
- Explore private sector and academic institutions for funding and collaborative opportunities to help support initiatives focused on all-hazard laboratory preparedness.

Public Health Laboratories

- Educate policymakers and elected officials on the roles and responsibilities of PHLs, how current funding is utilized, the implications of funding cuts and the impact that increased PHL funding has on the public's health.
- Advocate to political leaders and local government officials for increased funding by communicating the consequences of funding gaps on PHL operations and services.
- Champion funding needs for PHL preparedness and response activities during state government and cooperative agreement budget conversations by demanding representation during those meetings and being an active participant.
- Promote the need for a coordinated national laboratory system and the roles of different governmental and non-governmental laboratories involved in public health emergency response to key partners to effectively and efficiently prepare for and respond to all-hazard threats.

References

1. "Strengthening National Laboratory Coordination: A Vision for a National Laboratory System" (APHL, 2023) available at www.aphl.org/aboutAPHL/publications/Documents/APHL-Strengthening-National-Lab-Coordination.pdf
2. "Historical Population Density Data (1910-2020)" (United States Census Bureau, 2021), available at www.census.gov/data/tables/time-series/dec/density-data-text.html
3. "Workforce Challenges in Our Nation's Public Health Laboratory System" (APHL, 2022) available at www.aphl.org/aboutAPHL/publications/Documents/PHPR-All-Hazards-2021-Issue-Brief.pdf
4. "Public Health Emergency Preparedness Program and Guidance" (CDC, US Department of Health and Human Services (HHS)), available at www.cdc.gov/cpr/readiness/phep/index.htm
5. "Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC)" (CDC, HHS), available at www.cdc.gov/ncezid/dpei/epidemiology-laboratory-capacity.html
6. "The Laboratory Response Network Partners in Preparedness" (CDC, HHS), available at emergency.cdc.gov/lrn/
7. "The importance of sustained federal funding for public health" (APHL, 2020), available at www.aphlblog.org/the-importance-of-sustained-federal-funding-for-public-health/
8. "The Impact of Chronic Underfunding on America's Public Health System: Trends, Risks, and Recommendations" (Trust for America's Health, 2021), available at www.tfah.org/wp-content/uploads/2021/05/2021_PHFunding_Fnl.pdf

Additional Resources

- "Public Health Laboratory Facility Needs" (APHL, 2022) available at www.aphl.org/aboutAPHL/publications/Documents/QSA-2022-PHL-Facility-Needs.pdf
- "Public Health Laboratory Workforce Needs" (APHL, 2021) available at www.aphl.org/aboutAPHL/publications/Documents/QSA-2021-PHL-Workforce-Needs.pdf
- "The Core Functions of a Public Health Laboratory" (APHL, 2014) available at www.aphl.org/aboutAPHL/publications/Documents/APHLCoreFunctionsandCapabilities_2014.pdf#search=core%20functions
- "Radiological Laboratory Response- Limiting Issues" (Integrated Consortium of Laboratory Networks, 2009) available at www.icln.org/documents/rdl.pdf