



WORKFORCE CHALLENGES IN OUR NATION'S PUBLIC HEALTH LABORATORY SYSTEM

Select Findings from the 2021 APHL All-Hazards Laboratory Preparedness Survey

Public health laboratories are responsible for monitoring, detecting and responding to all-hazards threats that can occur anytime across the globe. In recent years, emerging and re-emerging infectious diseases, natural disasters and other public health threats have reminded us of how important public health laboratory preparedness is in sustaining operations before, during and after unanticipated events. A skilled and resilient workforce is a vital component of public health laboratory operations and critical to the provision of essential public health services. During public health emergencies, public health laboratories must make staffing adjustments to ensure continuity of operations and meet testing demands. As demonstrated by the testing needs of the coronavirus disease (COVID-19) pandemic, public health laboratories play a lead role in the detection and response to infectious diseases and that role cannot be performed without a highly trained and resilient workforce.

As part of its mission to ensure that public health laboratories are equipped with the resources needed to protect the public's health, APHL regularly assesses the capability and capacity of state and large local public health laboratories to respond to emergencies. This issue brief summarizes key workforce findings from the 2021 APHL All-Hazards Laboratory Preparedness Survey.

KEY FINDINGS

Impact of COVID-19 on the Workforce

The COVID-19 pandemic continued to disrupt public health laboratory operations, impacting laboratory training, education and practice while emphasizing the need for more trained personnel. Prolonged high testing volumes forced laboratories to divert staff for surge testing to meet demands and required staff to work additional hours. Shortages were heightened by staff illnesses from COVID-19, and social distancing approaches greatly altered laboratory operations. These changes directly impacted routine work, such as conducting preparedness exercises and trainings at clinical and other laboratories.

Staffing Challenges

The nation faces a number of workforce challenges, compromising our laboratory system and reducing our vigilance for pathogens of public health significance. These challenges encompass:

- **Workforce Shortages:** There is a limited pool of highly-skilled laboratory personnel who are willing to work in the governmental sector.
- **Recruitment:** Many public health laboratories do not have comparable salaries or recruitment incentives to attract qualified applicants.
- **Retention:** Retaining highly-qualified staff is difficult due to low salaries, lack of a career path and a growing number of retirees.
- **Bureaucracy:** The complexity of administrative processes at state and local governments and the reliance on federal funding for preparedness leaves little flexibility for recruitment and retention of a qualified workforce.

To cope with workforce shortages and budget constraints, public health laboratories reported that they are combining positions and cross-training staff, placing more responsibilities on fewer personnel.

SURVEY METHODS

APHL collected data for the 2021 All-Hazards Laboratory Preparedness Survey during the fall of 2021 to assess the status of state and large local public health laboratory preparedness. The survey covered a period of 12 months from July 1, 2020 — June 30, 2021, representing Fiscal Year 2020 or Budget Period 2 of the US Centers for Disease Control and Prevention Public Health Emergency Preparedness Cooperative Agreement. The survey was distributed to the 50 state public health laboratories, as well as those in the District of Columbia, Los Angeles County, New York City and Puerto Rico, and consisted of questions to understand public health laboratory capability and capacity for biological, chemical, radiological and other public health threats. Survey data was collected using Qualtrics®, a web-based survey tool and data repository. Each public health laboratory received an email with a unique survey link and a copy of the survey. APHL received responses from 52 of 55 public health laboratories (96% response rate). The [2021 APHL All-Hazards Laboratory Preparedness Survey Summary Data Report](#) presents aggregate survey assessment results for all questions.



WORKFORCE NEEDS

Increased Staffing

To support public health laboratory preparedness and response activities, increased staffing is needed to allow for testing expansion, outreach and training.

Sustainable Funding

Public health laboratories need sustainable funds to support permanent positions in the laboratory, not just positions tied to specific funding streams that are geared towards scaling up response activities during public health emergencies.

Professional Development and Continuing Education

A well-trained laboratory workforce is critical to ensuring that public health laboratories have the capacity to provide the essential services needed to protect the public's health. Opportunities for continuing education through laboratory trainings, exercises, workshops and webinars help ensure the public health laboratory workforce is educated on the most recent laboratory developments and increases the capacity of qualified personnel available to work in the laboratory. Further, by investing in professional development, laboratory personnel will gain insight into career paths and opportunities for advancement.

Mentorship

To provide additional guidance and support to the current and future public health laboratory workforce, mentorship programs are needed. Mentorship programs help ensure development of future public health leaders and add significant value to the workplace.

BARRIERS TO PREPAREDNESS

The following factors were indicated as impacting the laboratory's ability to carry out preparedness activities:



COVID-19 Pandemic
84.6% (44)



Non-competitive Salaries
40.4% (21)



Insufficient Funding
17.3% (9)



Hiring Freezes
13.5% (7)



Other*
34.6% (18)



No Difficulties Experienced
5.8% (3)

* Other specified responses include supply shortages, facility issues, training needs and additional challenges related to staffing such as finding qualified applicants to fill vacant positions and the desire to telework. Individual responses are on file with APHL.

CONCLUSION

Laboratories play a key role in protecting the public's health. The ability of the public health system to prevent, respond to and recover from all-hazards threats depends upon a well-trained, resilient and sustainable public health laboratory workforce. Unfortunately, the viability of public health laboratories is threatened by ongoing workforce challenges like staff shortages, issues with recruitment, hiring and retention, budget constraints and non-competitive salaries for laboratory personnel. These staffing issues—coupled with an ongoing pandemic—have made it difficult for public health laboratories to not only carry out day-to-day responsibilities, but also to prepare for public health threats of the future.

While today's workforce faces a number of challenges, their value has been clearly demonstrated during the ongoing response to COVID-19, which has required all components of our public health laboratory system to come together to monitor, detect and respond, to protect the public's health within the US and globally.

ACKNOWLEDGMENTS

Thank you to the 52 public health laboratories that completed the 2021 All-Hazards Laboratory Preparedness Survey.

This publication was supported by Cooperative Agreement #NU600E000104 funded by the US Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC or the US Department of Health and Human Services.