

PUBLIC HEALTH LABORATORY RESPONSE

UNMET NEEDS

- Increase CDC Public Health Emergency Preparedness (PHEP) funding for public health laboratories to prepare for and respond to all threats
- Increase funding to CDC to expand public health laboratory outreach, training and coordination with sentinel clinical (e.g. hospitals) and other laboratories
- Increase support for nation's Laboratory Response Network (LRN) to ensure a robust system for the detection of emerging threats
- Increase funding at CDC for laboratory response to incidents involving chemical threats
- Provide funding to CDC to improve states' ability to detect radiological exposure in humans

BACKGROUND

In accordance with Presidential Decision Directive 39, the Centers for Disease Control and Prevention (CDC), the Federal Bureau of Investigation (FBI) and the Association of Public Health Laboratories (APHL) formed the LRN in 1999. This network is the nation's premier system for identifying, testing and characterizing potential agents of biological and chemical terrorism as well as emerging threats such as Ebola. The LRN's integrated system of state and local public health, federal, military and international laboratories enables it to respond quickly to all threats.

State and local public health laboratories comprise approximately 60% of the 160 LRN Biological Reference Laboratories and almost 100% of the LRN Chemical Laboratories. These laboratories produce high-confidence test results that are the basis for threat analysis and intervention by both public health and law enforcement authorities.



The Public Health Emergency Preparedness (PHEP) cooperative agreement has supported preparedness and response efforts in state, local, tribal and territorial public health departments since 2002. This funding ensures that public health departments, including public health laboratories within the LRN, have the capacity and capability to effectively respond to all-hazard threats, such as infectious disease outbreaks, natural disasters, and chemical, biological, radiological and nuclear emergencies. In 2014, PHEP funding allowed these public health laboratories to perform over 23,000 tests for various threat agents.

LRN FOR BIOLOGICAL THREAT PREPAREDNESS (LRN-B)

The CDC LRN for Biological Threats Preparedness (LRN-B) is a critical asset which offers a standardized system for rapid, high confidence results to inform critical public health decisions about biological agents and emerging threats. In 2014, we saw the largest outbreak of Ebola in history and its devastation continues in the West African countries of Sierra Leone, Liberia and Guinea. In the US, two imported cases of Ebola with one death and two locally acquired cases greatly challenged the domestic healthcare system. The LRN and its partners collaborated

to implement testing across the US to ensure a robust response to Ebola. This is not the first time that the LRN has been used to mount an effective response – the network was used to respond to MERS, anthrax, West Nile virus, Influenza A H1N1 and Severe Acute Respiratory Syndrome (SARS).

Public Health Emergency Preparedness funding supported the Ebola response in the following ways:

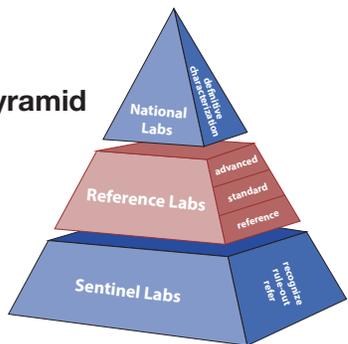
- Enabled CDC Partnerships to deploy the US Department of Defense United States Army Medical Research Institute of Infectious Diseases Ebola Zaire virus assay to laboratories within the LRN
- Helped put equipment in place to test for Ebola
- Supported communications with the laboratories to perform risk assessments and ensure capability to bring on a new molecular assay
- Trained personnel to conduct molecular tests and provide guidance to clinical laboratories including hospitals

The US was fortunate to only have a limited number of cases. However, challenges were still observed in the US response. These encompassed:

- Gaps in biosafety knowledge and practices within the clinical laboratories
- Limited ability of clinical lab staff to safely and correctly package and ship samples from patients under investigation
- Limited international laboratory capability to rapidly detect threats at its source

The ability of our nation to prepare for and respond to global threats is made possible due to CDC PHEP funding, which supports over 800 laboratorians in the 50 state, District of Columbia, Puerto Rico, New York City, Los Angeles County, Chicago and Guam public health laboratories.

LRN-B Pyramid



CDC FUNDING Preparedness

(Dollars in millions)

FY 2015 – \$643

FY 2016 – \$643 (requested)

FY 2016 – \$725 (APHL required)

LRN FOR CHEMICAL THREAT PREPAREDNESS (LRN-C)

Through continued PHEP funding, the 54 laboratories that comprise the LRN-C maintain capabilities to respond to local events in a quick and efficient manner to calm public fears or drive treatment regimens. LRN-C laboratories, however struggle to maintain and replace aging equipment and train employees: in 2014, five public health laboratories were forced to decrease their chemical threat capability, thus affecting rapid response to public health threats.

When over 5,000 gallons of the industrial chemical 4-methylcyclohexane methanol (MCHM) were leaked into West Virginia’s Elk River in January 2014, over 300,000 people in the local area found themselves without safe drinking water. Used to wash coal, MCHM can cause a range of symptoms like headaches, eye and skin irritation, and difficulty breathing with exposure to high concentrations. Local authorities trying to determine when the water was safe to use relied heavily on the water testing expertise of the West Virginia Public Health Laboratory. The Drinking Water personnel provided 24/7 support and used the LRN-C equipment to mount an effective response. The WV Public Health Laboratory allowed reported results three times faster than the other non LRN-C laboratories. ■

CONTACT

Peter Kyriacopoulos, senior director of public policy
240.485.2766 | peter.kyriacopoulos@aphl.org