

Biothreats Defense Program

The BPHL Biothreats Defense program consists of three laboratories that belong to the Centers for Disease Control and Prevention (CDC) National Laboratory Response Network for Bioterrorism (LRN-B) and are located at the **Jacksonville, Miami and Tampa laboratory facilities**. These LRN-B laboratories have Biosafety Level-3 high-containment rooms and the ability to detect and identify a range of threat organisms and toxins that could be used as biological weapons, such as *Bacillus anthracis* (causing anthrax), *Yersinia pestis* (causing plague), *Francisella tularensis* (causing tularemia), *Brucella* species (causing brucellosis), *Burkholderia* species (causing glanders disease and melioidosis), *Coxiella burnetii* (causing Q fever), smallpox virus, ricin and botulinum toxins, and more recently, monkeypox virus. Additionally, personnel from these facilities also train sentinel laboratory staff from hospitals and commercial laboratories in biosafety and the techniques used to perform rule-out testing for these organisms. The BPHL provides training in the regulations for proper packaging and shipping of these and other dangerous infectious substances and provides training to first responders in how to collect, decontaminate and safely transport environmental samples to the LRN-B laboratory for testing.

Highlights/specialties

- All three BPHL locations can perform rapid (i.e., less than 6 hours from receipt) detection of the biothreat agents for which rapid LRN methods are available. Both environmental (i.e., “white powder”) samples and clinical samples are routinely tested at these facilities. By providing a rapid response BPHL can quickly alleviate fear and provide a basis for treatment of people exposed to these deadly agents. The methods available include real-time polymerase chain reaction (PCR) and time-resolved fluorescence assays for rapid detection
- Provides confirmatory testing for the US Postal Service’s Biohazard Detection System
- Participates in the Department of Homeland Security’s air monitoring laboratory program
- Works closely with the Federal Bureau of Investigation Weapons of Mass Destruction Directorate and U.S. District Attorneys to provide laboratory analytical expertise and courtroom testimony for cases charged under the Biological Weapons Anti-Terrorism Act
- Performs method validation studies for the CDC for future use in all LRN-B laboratories across the nation
- Florida BPHL is one of four states that have instructed the LRN Conventional Methods course for the identification of bioterrorism agents and have trained over 500 national and international biological defense scientists since 2005



Workload

- Over 15,000 suspicious environmental and clinical samples have been tested statewide since October 2001.
- All BPHL LRN-B laboratories participate in required CDC proficiency testing of potential bioterrorism agents and other emerging or re-emerging infectious disease agents of public health concern.
- From July 1, 2021, through June 30, 2022, training was completed as follows:
 - 11 sentinel laboratory personnel representing two facilities were trained to perform rule-out testing for agents of bioterrorism.
 - 209 individuals representing 95 facilities were trained to safely package and ship infectious substances. This training is ongoing.
 - 160 first responders representing 47 Fire Rescue and Law Enforcement agencies and 11 statewide programs were trained to correctly collect and transport environmental samples to the laboratory.
 - 62 sentinel laboratories participated semi-annually in the College of American Pathologists Laboratory Preparedness Exercise for the detection of bioterrorism agents.