



## Bureau of Public Health Laboratories (BPHL)

Jacksonville – Miami – Tampa

# Chemical Threat

The BPHL Chemical Threat Preparedness Program consists of two laboratories located in Jacksonville and Tampa that belong to the Center for Disease Control and Prevention (CDC) National Laboratory Response Network for Chemical Emergencies (LRN-C). The Jacksonville laboratory is one of only ten Level 1 LRN-C laboratories in the nation that has the capability for unique high throughput analysis to detect chemical agents in clinical samples when responding to large-scale exposure incidents. The Tampa laboratory is designated as a Level 3 LRN-C laboratory and the Jacksonville laboratory is also required to function as a Level 3 laboratory.



**Level 1 Capabilities:** The Level 1 laboratory is equipped with state-of-the-art instrumentation used for chemical analysis which include gas chromatography-mass spectrometry, liquid chromatography tandem mass spectrometry, inductively coupled plasma mass spectrometry and liquid chromatograph quadrupole time of flight mass spectrometry.

Chemists analyze clinical specimens to detect high-threat chemicals such as nerve agents, mustard agents, and toxic industrial chemical; in addition, the laboratory can also detect the presence of cyanide and toxic metals. The list of test methods for new chemical agents increases every year as new methods are released from the CDC.

**Level 3 Capabilities:** The Level 3 LRN-C laboratories work with local hospitals and first responders by providing training in clinical specimen collection, storage, and shipment in the event of a chemical exposure incident. This can be accomplished by participating in chemical exposure full scale or functional exercises or attending on-site training.

### Chemical Threat Preparedness Program Highlights

- Participates in LRN surge capacity testing exercises which requires the 24/7 operation of the laboratory to analyze up to 500 mock patient specimens for chemical threat agents.
- Successfully completion of the annual CDC Specimen Packaging and Shipping Exercises.
- Over 2900 first responders/participants have been trained in chemical terrorism awareness and specimen collection since 2006.
- Hosted eleven annual statewide Chemical Exposure Full Scale or Functional Exercises in Florida involving over 20 participating local, state, and federal agencies and 30 local hospitals.
- Implemented an opioid bio-surveillance project to test for the presence of fentanyl and fentanyl analogs in deidentified urine specimens of non-fatal drug overdose patients. Overdose Data to Action (OD2A) focuses on understanding and tracking the complex and changing nature of the drug overdose epidemic and highlights the need for seamless integration of data into prevention strategies. Since 2021, the OD2A Lab has tested 1087 urine specimens, and a serum method will soon follow.
- Research on the detection of Lewisite metabolites was published in two peer-reviewed scientific journals and was co-authored by Chemical Threat staff members - *Journal of Analytical Atomic Spectroscopy* (2015), and *Journal of Analytical Toxicology* (2016).
- Presented laboratory chemical threat topics at national meetings including the LRN National Meetings; Association of Public Health Laboratories Annual Conference; Emergency Response Chemical Conference LRN - C Technical Meetings; the National Association of County and City Health and Mass Spectrometry Applications to the Clinical Laboratory; Region 6 Preparedness Summit.

**Contributing to a Healthier Florida  
One Test at a Time**