

A Comprehensive Review of Biosafety and Biosecurity Programs in State, Local

and Territorial Public Health Laboratories

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BACKGROUND

Emerging threats such as Zika and Ebola Virus Disease (EVD) have called attention to the climate of biosafety and biosecurity in public health laboratories (PHLs) around the US. During the Ebola response, significant gaps were identified in US laboratory biosafety practices. In May 2015, CDC awarded APHL a \$2.2 million Domestic Laboratory Biosafety for Ebola and other Highly Infectious Diseases Cooperative Agreement to (1) serve as subject matter experts to assist PHLs with strengthening their biosafety outreach. Over the course of three years (2015 – 2018), APHL's Public Health Preparedness and Response (PHPR) Program has strengthened biosafety across US laboratories by coordinating with CDC, state, local and territorial health departments and other partners to review biosafety practices, address identified gaps, develop tools and trainings, promote tools to help laboratorians improve biosafety practices and assist PHLs with outreach to clinical laboratories.

Federal - ELC

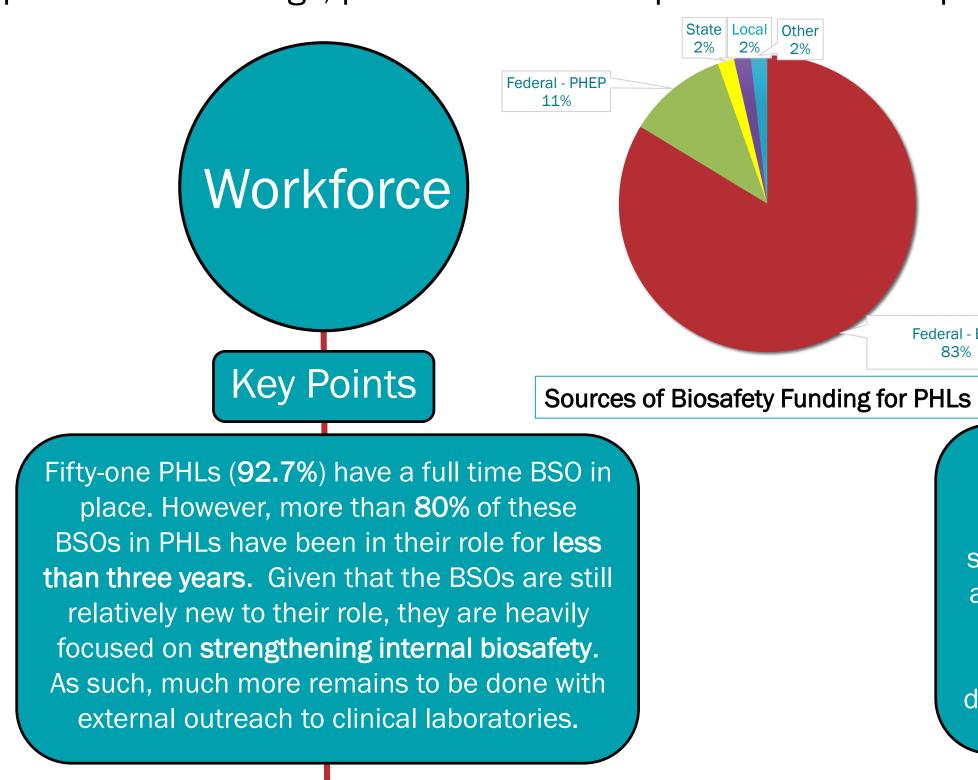
METHODS

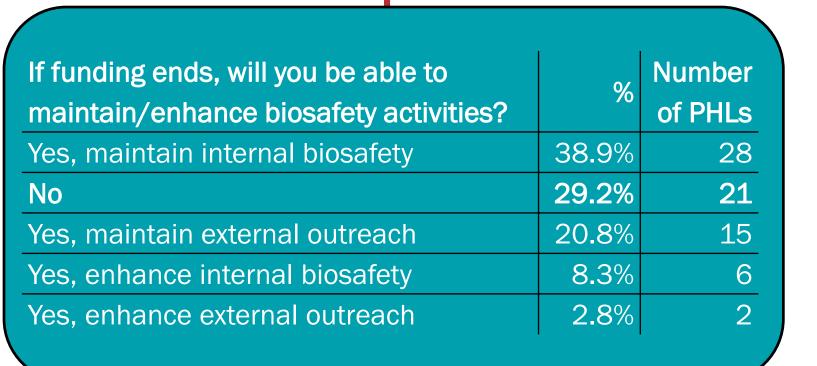
APHL conducted the 2016 and 2017 Biosafety and Biosecurity Surveys to the 62 state, local, territorial and US Affiliated Pacific Island (USAPI) PHLs that received \$21 million in March 2015 via the CDC ELC Domestic Ebola Supplemental for Enhanced Laboratory Biosafety and Biosecurity Capacity Cooperative Agreement to identify current biosafety and biosecurity practices and gaps. Questions from both surveys were solicited in the areas of funding, workforce, biosafety competencies, risk assessments, biosafety/biosecurity drills or exercises, clinical laboratory outreach training and related resource needs. Additional questions in the 2017 Biosafety and Biosecurity Survey included funding questions related to maintaining biosafety initiatives after the three year funding period is concluded along with the effectiveness of the APHL developed resources.

RESULTS

Key findings from both APHL Biosafety and Biosecurity Surveys include: (1) PHLs are utilizing the CDC funding to strengthen internal biosafety and biosecurity programs; (2) PHLS are reaching out to and engaging clinical labs but there is significant variability in this outreach; and (3) absent federal funding, sustainability of biosafety programs nationwide will be in jeopardy. Successes include implementing risk assessments, reaching out to sentinel clinical laboratories and delivering training courses to thousands of clinical laboratorians.

Through analysis of both surveys, the APHL Biosafety and Biosecurity Committee (BBC) has been addressing the identified gaps and continues to provide support to PHL directors and biosafety professionals. Since 2015, APHL has developed and delivered numerous tools (e.g. risk assessment templates), educational webinars and programs such as the Biosafety Peer Network, BioSafe 360, Biosafety Regional Workshops and Collaborate communities to strengthen biosafety practices within both the public health and clinical laboratory systems.





Challenges

External Outreach Key Points

BSOs **share resources** for performing risk

assessments and developing

biosafety/biosecurity plans and maintain

strong relationships to ensure rapid detection

and response to all threats. More remains to

be done with external outreach to clinical

laboratories. Forty-four PHLs (86.3%)

dedicated less than half of their time reaching

out to clinical labs.

55 PHLs: 5,249 clinical labs 47 PHLs performed 730 site visits 54 PHLs communicated with clinical labs 33 PHLs hosted meeting with clinical labs

Key Points

Traditionally, training is focused on strengthening technical skills of lab staff. With the unique role of BSOs ,that is, a **hybrid of** science, policy and practice; there is a need for training beyond technical procedures. 94% of BSOs rely on APHL Collaborate Platform for assistance and 90% of BSOs have used APHL courses.

Training

Challenges

- PHLs have to reach an average of **95** clinical laboratories per jurisdiction. Typically PHLs have hired only one full time staff devoted to perform this area of outreach (Biosafety Officer)
- There is a significant hurdle in gaining buy in for biosafety. Clinical lab staff have a heavy workload and are already tightly regulated by governmental agencies and accrediting bodies.
- Workforce turnover and geographic distance are posing challenges in some jurisdictions.

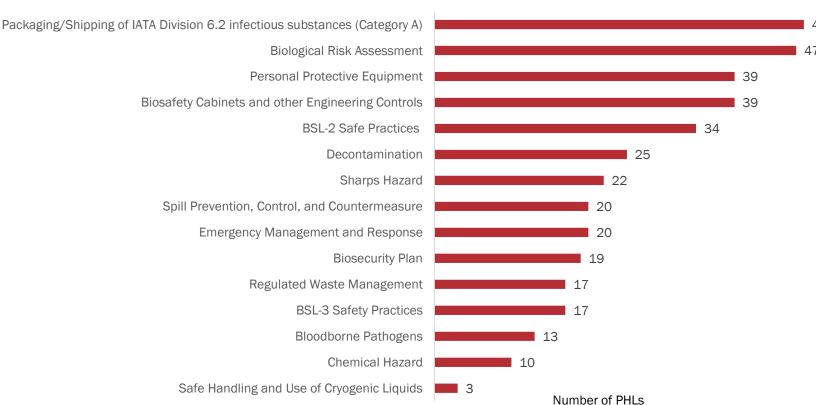
Acknowledgements / Sources

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PHLs Provide Training for Clinical Laboratories



CONCLUSION

There is much to be accomplished in the biosafety space for our nation's laboratories. APHL uses the survey data to identify successes, gaps and remaining challenges in biosafety and biosecurity. APHL also tailors its training programs to meet the needs of its members. Given the success from the cooperative agreement, biosafety programs are essential to a laboratory. A long-term, sustainable funding strategy is needed to continue to strengthen PHL and clinical biosafety and biosecurity programs. The funding will assist laboratories with maintaining and hiring highly skilled BSOs, improving outreach to clinical laboratories and increasing their buy-in, providing training to internal staff and external laboratories and ultimately ensuring a safe and secure place thus preventing laboratory-acquired infections.

For More Information

Please visit http://www.APHL.org/biosafety or contact us at biosafety@aphl.org



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