APHL Biosafety Peer Network: Pairing Biosafety Officers in Public Health Laboratories

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INTRODUCTION

Recent lapses in institutional biosafety and the 2014 Ebola outbreak have demonstrated the necessity to fill gaps and deficiencies that remain in the nation's biosafety apparatus. Established in 2016, the Biosafety Peer Network aims to strengthen biosafety and biosecurity by connecting state, local, and territorial public health laboratories (PHL) and laboratories in the US-affiliated Pacific Islands to facilitate mentoring and information sharing among biosafety official and officers (BSOs). The exchange is expected to advance and harmonize biosafety and biosecurity in laboratories, while fostering a collaborative community – and ultimately improving PHL biosafety and biosecurity nationwide.

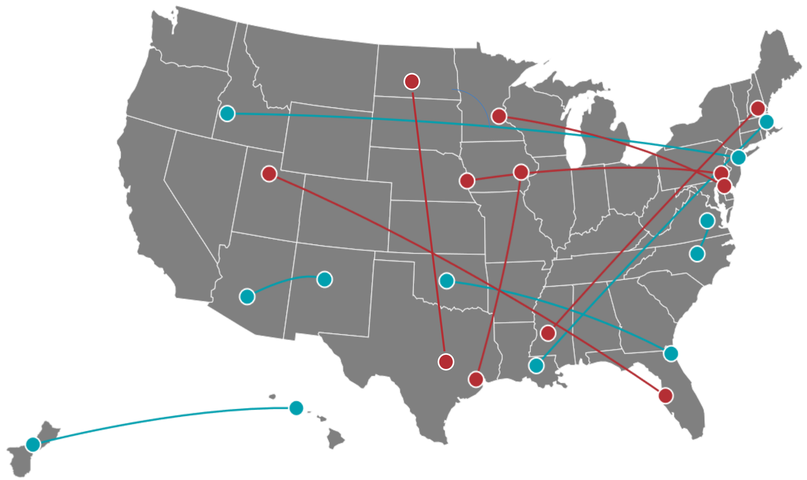
METHODS
The Network utilizes a twinning concept, pairing BSOs from two PHLs who alternately visit the other's institution. Laboratories are paired based on responses to an application. The application examines the laboratories' strengths and proficiencies in specified areas of biosafety and biosecurity as well as identifies their mentorship needs. In its initial year, applications were accepted from 12 PHLs that were eventually twinned for a total of six pairs (See Image 1 in blue).

Biosafety and biosecurity plans, occupational health programs, regulated waste management and sentinel clinical outreach are a few of the topics that are examined. The BSOs are expected to provide the following deliverables in conjunction with their participation in the Peer Network:

1. Two Weeks Following Site Visit: Visiting BSO utilizes an APHL template to develop a trip report describing notable outcomes from the site visit.
2. One Month Following Site Visit: Visiting BSO utilizes an APHL template to design a PowerPoint presentation explaining (a) purpose of the visit, (b) lessons learned/key take away messages and (c) what changes were implemented as a result of the visit.
3. Within 3 Months Following Site Visit: Roles are reversed – the initial host travels to the other's facility.

Visits from the first round of twinned laboratories began in January 2017 and concluded in June 2017. The second round was launched in August 2017 with another 6 pairings (See Image 1 in red).

Image 1: Map depicting the 24 paired laboratories through the two years of the Biosafety Peer Network. Blue circles represent the first 6 parings in 2016-2017 and the red circles represent the 6 pairings scheduled for 2017-2018.



Pairings from the first round of the Peer Network in 2016-2017 (blue)	Pairings from the second round of the Peer Network in 2017-2018 (red)
Massachusetts State PHL paired with Louisiana Department of Health, PHL	Florida Department of Health, Bureau of Public Health Labs – Tampa paired with Unified Utah State Laboratories: Public Health
Oklahoma State PHL paired with Florida Department of Health, Bureau of Public Health Labs – Jacksonville	Nebraska PHL-University of Nebraska paired with Pennsylvania Bureau of Laboratories
Virginia State PHL paired with North Carolina State PHL	New Hampshire PHL paired with Mississippi PHL
Guam Department of Public Health and Social Services paired with Hawaii State Laboratories Division, Department of Health	State Hygienic Laboratory at the University of Iowa paired with Houston PHL
Arizona Department of Health Services State PHL paired with New Mexico Department of Health Scientific Laboratory Division	Minnesota Public Health Laboratory Division paired with Delaware Public Health Laboratory
Idaho Bureau of Laboratories paired with New York City PHL.	Texas Department of State Health Services paired with North Dakota Department of Health

Image 2: Guam PHL BSO Anne Marie Santos utilized the lessons learned from Host Lab Hawaii State Laboratory Division to implement stronger biosafety practices in the GPHL.

RESULTS
Utilizing the site visits to their fullest from the initial round, each visiting BSO participated in extensive laboratory tours where they were presented with an overview of the host laboratory facility, introduced to the laboratory director and other laboratory managers and discussed the state-specific biological, chemical, and radiological work performed by the host laboratory. During their site visit, they were able to analyze the current biosafety processes and policies of the host laboratory, evaluate the sentinel laboratory outreach techniques the host BSO utilizes, as well as challenges faced, brainstorm ideas for improvement of internal and external trainings, and identify areas in the host laboratory that could utilize stronger biosecurity measures.

Some notable outcomes and takeaways expressed by the participating BSOs included:

- Shadowed host BSO during a visit of a nearby sentinel clinical laboratory in order to evaluate outreach techniques (*ID visits NYC*)
- Worked with host BSO to develop a Train-the-Trainer Biosafety and Biosecurity Workshop for sentinel clinical laboratories at their PHL (*LA visits MA*)
- Worked with host BSO to develop ideas on improving packing and shipping trainings both in-house and with sentinel clinical laboratories (*NC visits VA*)
- Identified the necessity to have a trained observer with laboratory staff during donning and doffing to assist in decontaminating with EPA-certified disinfectant wipes and hand sanitizers (*GU visits HI*)
- Developed strategies for maintaining biosafety after funding shortages (*AZ visits NM*)
- Shared with host BSO about BT BSL3 suite's ability to close separately from other BSL3 rooms for complete room decontamination procedures; Host BSO plans to implement into the planning stages of a new facility (*FL visits OK*)

Analyzing the trip reports from the 6 twinned labs, we have seen PHLs improve the implementation of their perspective biosafety and biosecurity programs. Labs have initiated changes in their biosecurity plans, donning and doffing procedures, waste management protocols and sentinel laboratory outreach program to name a few seen in Image 2. Finally, this program pools limited resources to strengthen biosafety and biosecurity nationwide as well as fostering an environment of collaboration and community among the relevant stakeholders.

Conclusion

The biosafety and biosecurity programs at several different PHLs are more harmonized due to their common source of guidance. This standardization among different organizations is beneficial in many aspects such as implementing new procedures and communication between partners. The trip report and PowerPoint presentation deliverables obtained from the first round of the Peer Network will be utilized to develop targeted training opportunities for BSOs, identify funding gaps and needs, and promote the importance of BSOs in PHLs. Due to the success of the first round of participating BSOs and the demand expressed by other PHLS, APHL has conducted a second round for the Peer Network. The second round of this program has commenced in August 2017 to partner additional PHLs and the site visits are currently underway to foster more harmonization in biosafety and biosecurity programs in pubic health laboratories

For More Information

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

Acknowledgements / Sources

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