

The Public Health Laboratory System Database: Findings from Pilot Implementation

D. Kim¹, K. Breckenridge¹, J. Ridderhof², R. Ned-Sykes², S. Adebola², S. Daher¹

¹Association of Public Health Laboratories, Silver Spring, MD; ²Centers for Disease Control and Prevention, Atlanta, GA.

BACKGROUND

The Public Health Laboratory System Database (PHLSD) was developed in collaboration with CDC and APHL and designed by Booz Allen Hamilton to improve management of public health laboratory (PHL) data and information. The current Access version of the database was redeveloped into a web form version. Each PHL will have their own database to manage information on their laboratory's infrastructure, regulatory compliance, testing capability and equipment. The database's reporting functionality will allow PHLs to:

- Keep an updated list of tests and methods;
- Access an electronic equipment inventory; and
- Prepare for inspections by accrediting and certification agencies.

Aggregation of data by APHL will enable creation of a national PHL test directory and make detailed test capability information available to PHLs in public health emergencies, during surge capacity needs, for exploring potential sharing of test services, and for identifying the test service expertise of PHLs.

METHODS

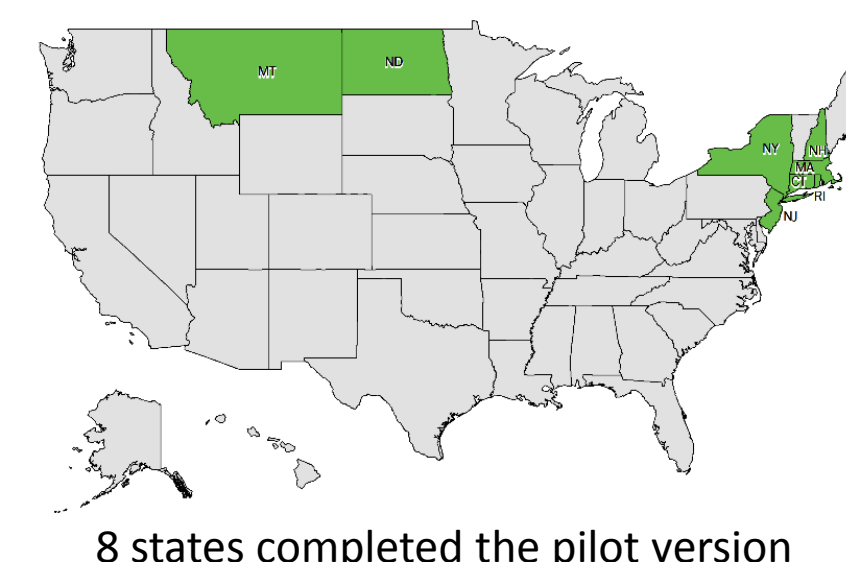
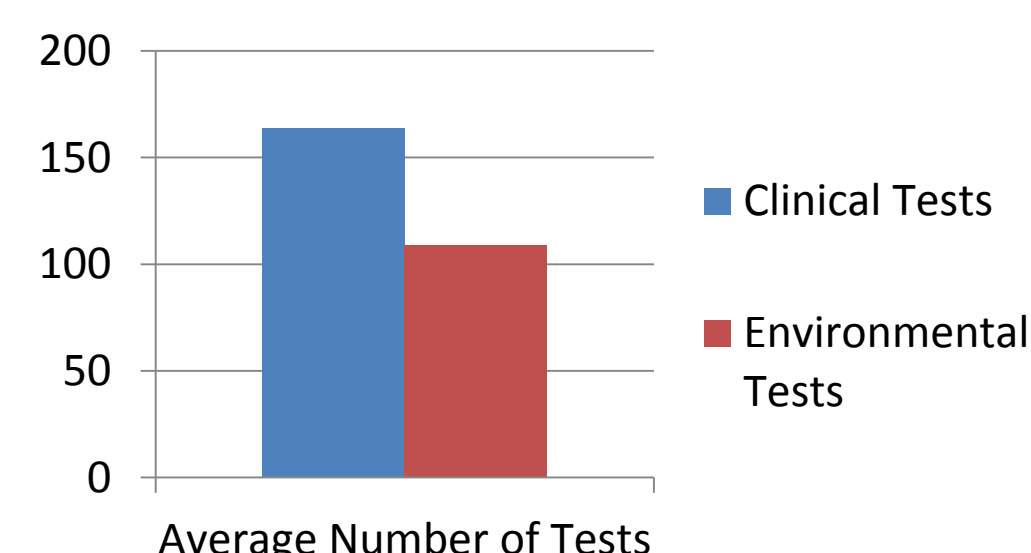
The PHLSD pilot project to test the database included a subset of PHLs that are members of regional consortia and the APHL board of directors. The 8 pilot laboratories were asked to enter their complete test and equipment information, providing a snapshot of their infectious disease and environmental testing capabilities and methodologies. The database was launched via a Share Point site with instructional materials and video tutorials.

RESULTS

The participants completed 90% of the database's data fields. The average number of equipment reported per site was 93. The average number of clinical tests per site was 164, and the average number of environmental tests was 109. Most PHLs had several people enter information. One PHL reported that completing the database took 10 hours.

The most commonly reported clinical tests and methods (7/8 PHLs) were:

- ❖ *Bacillus anthracis* culture
- ❖ *E. coli* O157 culture
- ❖ *Haemophilus influenzae* culture
- ❖ HIV Immunoassay (EIA)
- ❖ Norovirus PCR
- ❖ *Shigella* spp culture



These environmental matrices and methods were reported by 5 of the 8 PHLs:

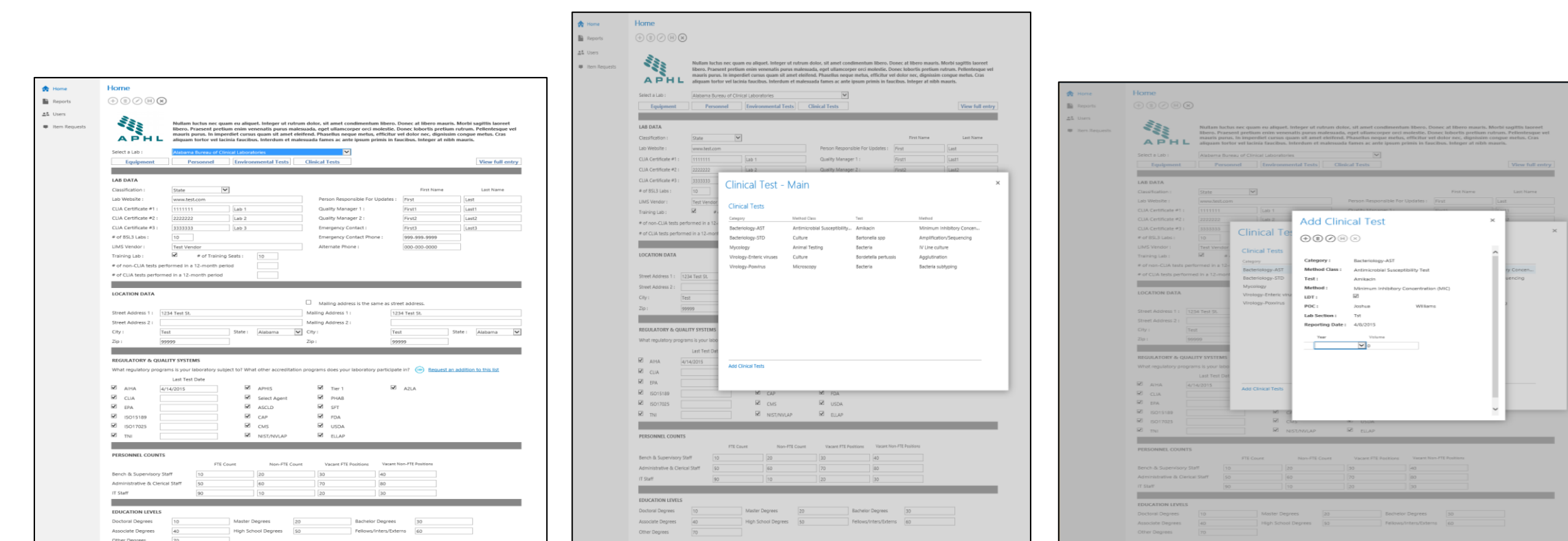
- ❖ Water - Metals in Waters by ICP/MS
- ❖ Water - Organics in Water Using GCMS

These environmental matrices and methods were reported by 4 of the 8 PHLs:

- ❖ Water - EDB,DCBP, and 123TCP in Water Using GCECD
- ❖ Water - Inorganic Anions by Ion Chromatography
- ❖ Water - Mercury by CVAA
- ❖ Water - Metals in Water by ICP-AES
- ❖ Water - Pesticides and PCBs in Water GC-ECD
- ❖ Water - VOCs in Water Using GCMS

These instruments and manufacturers were reported by 7 of the 8 PHLs:

- ❖ PCR, real-time systems - Applied Biosystems
- ❖ PCR, real-time systems - Cepheid



NEXT STEPS

- Finalize the web-form database and beta test it
- Update the database to allow easier data entry and navigation
- Add test data import functionality
- Create the ability to search for other labs' test data
- Include a variety of reports
- Launch in the summer of 2015 to APHL member labs

CONCLUSION

The PHLSD provides a strategic approach for organizing, reporting, and sharing information, as well as increasing the efficiency of PHL information management. The comprehensive national PHL test directory will allow for greater transparency, enhance opportunities for collaboration, inform interoperability efforts, and be a resource in times of emergency or surge.

For More Information

Deborah Kim
deborah.kim@aphl.org
240-485-2742

Jacob Rosalez
jacob.rosalez@aphl.org
240-485-3830

Sadira Daher
sadira.daher@aphl.org
240-0485-2702

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