

Laboratory Efficiencies Initiative (LEI) Public Health Laboratory Director Forums Meeting Summary

April 17, 2012 – Kansas City, MO

April 24, 2012 – Baltimore, MD

Purpose of the Meetings

The Laboratory Efficiencies Initiative (LEI) is a co-sponsored activity between the Association of Public Health Laboratories (APHL) and the Centers for Disease Control and Prevention (CDC) is designed to bring high-efficiency, evidence-based management practices to PHLs. In April 2012, two forums were hosted by APHL to obtain input from public health laboratory (PHL) directors on ongoing and emerging issues for PHLs. Twenty three PHL directors were able to participate at the forums and addressed the following questions:

- What immediate needs must be addressed to strengthen PHLs and the PHL system?
- What are the systems or practices necessary to sustain PHLs in the future that are not yet in place?
- What are the barriers to these systems and practices?
- What other stakeholders are needed to support the adoption of these systems and practices?

Background

States, localities, APHL, and CDC have a shared stake in sustaining public health testing services. The ability to maintain services is under severe stress and in some cases has impaired outbreak investigation, emergency response, surveillance, and public health prevention programs. The LEI is designed to help laboratories maintain their public health testing services despite decreased funding, which has resulted in staff reductions, reduction or elimination of testing services, and impacted the ability of PHLs to respond to emergencies and outbreaks.

High-Efficiency Management Practices

- Multi-state sharing of test services
- In state reorganization of testing services
- Contractual services
- Standardization of testing platforms
- Purchasing cost-savings
- New revenue streams
- Laboratory informatics capabilities
- Workforce preparedness
- Managing workflow

The LEI focuses on the identification and adoption of high-efficiency, evidence-based management practices. Since each PHL is unique, the practices that will meet the needs will have to be tailored to its unique circumstances. Key partners in this process include health departments, public health programs, partner associations and CDC programs.

In support of the LEI, APHL and CDC have initiated and engaged in various activities. These include:

- Developing a guide addressing service delivery changes, which will include case studies;
- Exploring strategies to standardize testing platforms;
- Exploring joint purchasing strategies through multi-state agreements;
- Exploring fee-for-service/billing issues in conjunction with other organizations (e.g., ASTHO, NACCHO, AMCHP, NASTAD);
- Consolidating data collection and reporting to allow PHLs to make full use of the data that are being collected;
- Identifying informatics needs of PHLs (e.g., integrating billing into LIMS); and
- Developing a workforce strategy (e.g., core competencies for the PHL workforce).

Another priority is streamlining CDC program support to states. This includes focusing on CDC program support to PHLs, standardization of testing platforms, and consolidation/availability of data (e.g., data sharing across CDC programs and PHLs).

APHL and CDC are convening a strategic planning process to shape the framework and future direction of the LEI in June 2012. Initial research will include an environmental scan and key informant interviews. Based on these findings, the planning group will develop a strategic plan, including recommended activities for the next three years.

APHL is also reaching out to other stakeholders around visioning and improving efficiencies. For example, APHL anticipates a joint project with the Council of State and Territorial Epidemiologists (CSTE) to explore the future of surveillance.

Examples of Strengthening PHLs

Participants provided examples of how their PHLs are already working toward becoming stronger and more efficient. Many of these activities could be models for others to use.

- **District of Columbia:** The PHL will be moving into a new building that will consolidate all of the City's laboratory services. This will allow for joint purchasing (e.g., service contracts, gases) and the consolidation of waste disposal and security. The PHL will be moving to the Department of Forensic Sciences which is under the authority of the Deputy Mayor (DM) for Public Safety & Justice. The DM has visited the PHL and expressed his strong support.
- **Kentucky:** The PHL has opened a business office that focuses on procurement and customer service. The laboratory has instituted an electronic ordering system, which has resulted in reducing the number of staff processing orders from 12 to two. Customers are also more satisfied with the services as it provides the same access to reports that physicians receive from the private sector. While there are upfront costs in implementing such an information management system, it pays off with increased customer satisfaction and cost savings in other areas (e.g., staffing). The PHL has developed a partnership with a local educational institution that requires students to complete an 11-week rotation in the laboratory. Not only does this increase staffing for the laboratory but it also helps to build capacity in the community. Also the PHL has determined that it is more economical to lease equipment than to purchase it.

- **Michigan:** As a result of a significant cut in general funds, the PHL is consolidating services. Lean tools were used to revise the regional lab system. For example, STD testing is now conducted by the state PHL instead of regional laboratories. The PHL is exploring restoring some services on a fee-for-service basis.
- **Minnesota:** The PHL has engaged in several Lean events—some have been successful, others have been less successful. For example, one Kaizen event resulted in the reconfiguration of sample accessioning from a batching to a flow-through process. The PHL relied on consultants to conduct these events. Now, state staff have been trained and are available as Lean facilitators and can coordinate the events. These activities have served to identify leadership skills among laboratory staff. A major challenge in conducting these type of events is staff time—it is very labor intensive.
- **New York:** NYS Commissioner of Health formed an external Task Force to review the Wadsworth Center and its activities and to make recommendations on how best to operate in the future. The laboratory is already actively involved in a number of public private partnerships and is exploring ways to expand the scope and number of these activities. It has also established a master's degree program in laboratory science and the first class will enter the program in September 2012. The state is in the process of instituting a single purchasing system for all state agencies.
- **South Dakota:** South Dakota participates in the Northern Plains Consortium, which is an alliance of states with large geographic areas and small populations. The consortium engages in regular phone calls and an annual meeting. The consortium has been most successful in supporting joint training opportunities. When they do share services, it is often done on an informal basis without formal agreements. South Dakota has provided services to members in the consortium as well as other states. For the most part, the SD laboratory charges for services (it does not receive any general funds) but has also provided pro bono services.
- **Tennessee:** The PHL is consolidating regional labs and has instituted a blended billing process. In response to an ongoing challenge in recruiting entry-level staff, the PHL was successful in working with the state HR program and used hard to fill entry level positions as training positions for micro students. After 18-months students are eligible to sit for the state licensure test and may be hired at the next level. There has been a great deal of interest in the program.
- **Vermont:** The PHL participates in collaborative activities with other laboratories in the region. There is some shared testing (e.g., meningitis, drinking water) and reagent sharing agreements. Most of the agreements are informal.
- **West Virginia:** The PHL has updated its environmental section to respond to activities such as hydraulic fracturing for natural gas (commonly known as fracking). The PHL bills for environmental testing services. West Virginia University is establishing a new school of public health (and will hopefully include microbiology). Students regularly tour the laboratory.

Defining the Role of PHLs

Participants discussed possible roles for PHLs in the immediate future. In particular, the discussion centered around whether PHLs should be focused on specific services (e.g., newborn screening) or if the focus should be on certain skills and expertise that a laboratory should possess.

Across the country, PHLs are engaged in a wide range of activities. Participants sought to identify core services for PHLs that could provide a framework as they seek to respond to the needs in their community with the available resources. Participants suggested that the Essential Public Health Services, developed by CDC's National Public Health Performance Standards Program (NPHPSP), could provide a framework for PHLs as they seek to identify which services they should provide.

Essential Public Health Services

The Essential Services describe the public health activities that should be undertaken in all communities. They provide a working definition of public health and a guiding framework for the responsibilities of local public health systems.

- Monitor health status to identify and solve community health problems.
- Diagnose and investigate health problems and health hazards in the community.
- Inform, educate, and empower people about health issues.
- Mobilize community partnerships and action to identify and solve health problems.
- Develop policies and plans that support individual and community health efforts.
- Enforce laws and regulations that protect health and ensure safety.
- Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
- Assure competent public and personal health care workforce.
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
- Research for new insights and innovative solutions to health problems.

Testing Menus

Participants discussed how the testing menus of PHLs are constantly evolving—which provides flexibility to respond to emerging needs. PHLs need to work with other programs such as epidemiology and tuberculosis to identify what should be included on the menu. There are various factors to take into consideration when working to reduce the number of tests offered by the PHL. For example, other programs need to be educated about the testing process and what drives the cost of tests (e.g., validation, CLIA regulations, and low volume). Decisions should be driven by data that reflect a need, not just because the tests have always been provided. Other programs can also assist in reducing the number of tests provided by helping to eliminate duplicative testing. For example, one participant reported that it uses LIMS to identify inmates that have already tested positive for HIV so that they do not need to be repeatedly tested.

Role of Private Sector in Providing Testing

Participants reported that some services eliminated by PHLs have been picked up by private-sector laboratories. Private laboratories are able to provide some services more efficiently than PHLs. For example, some tests are much less expensive when provided by private laboratories and are not part of the PHLs' core functions, so responsiveness is not compromised. However, there are some services that PHLs can provide more effectively than the private sector, such as rapid follow up to positive newborn screening tests. It is important to note that some PHLs are prohibited from competing with private-sector laboratories. In addition, there are some critical areas, such as parasitology, mycology, and bacteriology, where there may be little interest from the private sector. PHLs will have to ensure that they maintain capacity in these areas.

Increasing Efficiency: Possible Models

Sharing Services

While participants expressed an interest in sharing services, they agreed that there are some tests that each PHL should retain to ensure responsiveness. These might differ from state to state. In addition, participants acknowledged that there are many different factors that come into play when PHLs collaborate. For example, is geographic proximity critical in service sharing relationships or is it more important that collaborators are of similar size and capacity? Are similar testing platforms essential in service sharing relationships? Participants also suggested that PHLs could explore collaborating in other areas, such as joint trainings or shared storage.

The most significant barrier to sharing services was identified as the need to maintain certain capabilities within each PHL. Participants emphasized that in the event of an outbreak, no PHL would want to be reliant on another to provide testing services (i.e., fear that their samples would be tested last).

Participants identified additional barriers to shared testing services.

- Even if testing services are shared, there could still be low sample volume (i.e., insufficient volume to reduce cost of testing).
- Transportation of samples over large distances and maintaining the integrity of samples (e.g., cross contamination, etc.).
- Legal barriers (e.g., statutes requiring the PHL to provide specific tests).
- Need to maintain staff competencies.
- Willingness of epidemiologist and other state programs to work with PHLs in another state (e.g., resistance to calling a PHL in another state for test results).
- Impact on the ability to follow up on positive testing results in a timely and effective manner (e.g., referral). This gets even more complicated when residents from one state receive services in another state. Tracking and response could become very convoluted.

Building Relationships with Epidemiology

Strengthening relationships between the PHL and the epidemiology program present an opportunity to build efficiency. Participants acknowledge that it can take time and effort to build this relationship, which is facilitated when the PHL and the epidemiology program are co-located. Regular meetings between the PHL and the epidemiology program can support collaboration. Directing grant funding through the PHL can provide the laboratory more leverage when dealing with other programs. Training laboratory staff in epidemiology was also presented as a strategy for building a collaborative working relationship. Also suggested was working with other associations like CSTE to encourage epidemiologists to come to the laboratory, not just the laboratory staff reaching out to epidemiology.

Resources for Lean Activities

Participants reported that Lean-related activities have had a significant impact in their PHLs. In particular, LEAN events can play an important role when the PHL is undergoing significant changes such as designing a new facility or adopting a new LIMS. Working with APHL consultants to conduct a Lean event give staff confidence and the APHL mini grants were an important form of support.

Billing

Many PHLs engage in some form of billing for services. This includes billing Medicare, Medicaid, other state agencies, private insurance, and charging hospitals for screenings and or test kits. Compensation often does not cover the cost of the service. In some states, payments go directly into the general fund and do not return to the PHL. Some states have statutes prohibiting billing and/or competition with the private sector.

Participants identified multiple challenges to billing for services. They stressed that there are costs related to billing—and the money collected may not cover these costs. Many PHLs use third-party billing services, which they reported as working well. These Billing services whether done by health department staff or third-party billing services need to be familiar with CPT coding and provider enrollment processes and also must be able to extract key data for the PHL. Participants suggested that APHL could identify competent third-party billing services. In addition, participants suggested exploring reimbursement for PHL services.

Billing-related challenges identified by participants include:

- Many LIMS in PHLs do not have billing capability or are not compatible with billing software;
- Privacy considerations (e.g., STD testing and minors);
- Revenues not coming back to the laboratory, instead going to the general fund or similar;
- Often state stature does not allow for billing of laboratory tests;
- Determining charges or who to charge for testing during an outbreak situation;
- Setting fees could require legislative approval, if even allowed to charge;
- How to set prices for low volume tests when the reimbursement rate is less than the cost per test and
- Lack of staff with experience in billing and CPT coding.

As the Affordable Care Act is implemented, billing activities will have to be aligned with the new requirements.

Maintenance Contracts

Participants identified maintenance contracts as an ongoing challenge for PHLs. Participants expressed dissatisfaction with the services offered by third-party providers as opposed to manufacturers. Some states do not allow the PHL to purchase warranties on equipment—they must use a third-party provider. In addition, some states include liability provisions in service contracts that manufacturers will not accept. This makes it difficult to get coverage. However, some participants reported using the possibility of moving to a third party as a means to gain leverage with the manufacturer in negotiating a better price.

Workforce Development

Major workforce challenges identified by participants include recruiting qualified staff (e.g., many participants reported extended vacancies) and providing adequate compensation so that staff remained in their positions. In addition, participants identified a need to foster future PHL directors.

The compensation issue is significant. Participants noted that staff in the PHL are often paid less than other laboratorians in the state and there is a need to address pay inequities. Many states have not been able to offer any increases in salaries over multiple years. Within the PHL, salaries must also be harmonized and job classifications simplified. Participants reported that the salaries for supervisors are often similar to those of

the staff they supervise. Participants acknowledge that PHL compensation will probably never compare to salaries offered in other laboratory settings but that PHLs can increase job satisfaction by provide research opportunities and other opportunities for professional growth.

PHLs can provide on-the-job training through residency programs and internships. This helps develop the workforce but also provides the opportunity to evaluate potential employees. Online degree programs, such as a professional doctorate in laboratory services, would allow current laboratory staff to pursue additional training while on the job.

Participants also identified increase automation in the laboratory as a way to address staff shortages. Automating certain functions (e.g., sequencing, billing and reporting) allow for a more efficient deployment of staff resources.

Using Technology/IT to Increase Efficiency and Improve Services

Participants identified the use of technology and information technology (IT) as ways to improve PHL efficiency and the services provided. For example, electronic test ordering and resulting (providing real time information to customers) is widely used in the private sector. To initiate these activities it is necessary to use software compatible with LIMS. It is also important that other departments within the system embrace electronic ordering in order to achieve efficiencies (i.e., for it to be effective, customers must use it). Other areas where PHLs can use technology to gain efficiencies include bioinformatics and automation (e.g., use of sequencing equipment).

Developing Partnerships

PHLs can participate in a wider range of activities through partnerships with other stakeholders. For example, PHLs can collaborate with universities to develop and pilot innovations. Partnerships with industry can focus on beta testing instruments and validation studies. Several PHLs are already engaged in these types of activities.

Opportunities with Affordable Care Act

Implementation of the Affordable Care Act will drastically change the provision of health care services. These changes offer an opportunity to PHLs but they will need to position themselves to participate such as taking part in exchanges and preparing to meet meaningful use requirements.

Envisioning the PHL of the Future

Participants discussed how PHLs will need to evolve to meet emerging needs and challenges.

Improved Information Management

- Increased use of electronic test ordering and resulting, which will increase customer access to information and reduce the resources required to provide results to customers.
- More resources will be required to build up IT capacities.
- Greater emphasis on bioinformatics.

Increased Role for PHLs in Surveillance

- Guidance is needed in terms of the role of PHLs in surveillance activities.
- Compatible systems are needed (e.g., PulseNet)

Greater Focus on Customer Service

- Emphasis on meeting public health needs in a timely manner.

New Sources of Revenue

- Need to develop systems to support billing (e.g., billing software compatible with LIMS).
- Position PHLs to respond to the changes resulting from the Affordable Care Act (e.g., participation in exchanges, compliance with meaningful use).

Ongoing Staffing Challenges

- Develop more opportunities within the lab to compensate for lower salaries (e.g., participation in research activities).
- Develop training opportunities within the lab (e.g., residencies, internships).
- Develop professional development opportunities (e.g., online advanced degree programs).

Increased Partnering

- More research-focused collaborations with universities and the private sector.
- Greater collaborations with hospitals.
- Increase focus on environmental testing, food testing, preparedness, bioterrorism.
- Increase partnerships with the public health community.

Increased Visibility

- Position PHLs as the “local” version of CDC (i.e., CDC is well known and widely respected).
- Need for ongoing outreach to state health directors.

Next Steps

Participants identified possible next steps for APHL to move forward in support of the LEI.

- Communicate with health commissioners/health departments about what LEI is, with specific examples (such as billing) and efforts to improve efficiencies via a joint letter from APHL and the Association of State and Territorial Health Officials (ASTHO).
- Identify best practices for working with other programs and prioritizing lab services (e.g., development of test menu).
- Develop decision making tools for determining which tests to provide.
- Determine what skill sets are needed for the PHL workforce based on the testing needs (e.g., culture).
- Explore ways to identify future testing priorities and monitor developing technologies.
- Collect data on what tests are performed by each PHL and make this information available so that PHLs can explore sharing services. Data could also be collected on test methods used, what tests were eliminated, and why test were eliminated. An interactive database would allow states to update their information.
- Collect best practices from states and locals that have successfully implemented billing activities (e.g., Michigan, South Dakota, Tennessee and Colorado).

- Explore options for assisting PHLs in the implementation of billing.
- Investigate new partnerships especially with universities and industry for opportunities for new research and
- Investigate how the Affordable Care Act will affect laboratories.



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