CDC/APHL LEI Informatics Consultation Meeting

Meeting Summary Report

December 15th, 2011
Atlanta, GA

Booz | Allen | Hamilton

APHL

CDC

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Table 1: Participant list

	State and APHL Representatives		*CDC Representatives*
X	Wanda("Willie") Andrews (Virginia)	X	Steve Soroka (CDC/OID/NCEZID)
X	Garrett Peterson (Wisconsin)	X	James Tolson (CDC/OID/NCEZID
X	Jack Krueger (Maine-retired)	X	Judy Delaney (CDC/OSELS/OD)
X	Mark Conde (Emory University)	X	Laura Conn (CDC/OSELS/PHITPO)
X	Michelle Meigs (APHL)	X	Robert Pinner (CDC/OSELS/PHITPO)
X	Patina Zarcone (APHL)	X	Rene Ned (CDC/OSELS/LSPPPO)
X	Cassandra Hadley (APHL)	X	Tony Moulton (CDC/OSELS/LSPPPO)
X	Linda Cohen (APHL)	X	John C. Ridderhof (CDC/OSELS/LSPPPO)
X	Paul Duffy (California-retired)	X	Simon Adebola (CDC/OSELS/LSPPPO)
		X	Emory Meeks (CDC/OSELS/LSPPPO)
X	Jon Lipsky (J Michael Consulting)		*Booz Allen Hamilton*
X	Reshma Kakkar (The St. John Group)	X	Kakali Bandyopadhyay (CDC/OSELS/LSPPPO)
		X	Tony Barbagallo
		X	Tara Bubniak
			Deloitte Consulting
		X	Seth Gazes (CDC/OSELS/LSPPPO)

1. Executive Summary:

The Centers for Disease Control and Prevention (CDC) and the Association of Public Health Laboratories (APHL) hosted a joint meeting with representatives from state and local public health laboratories (PHLs) and other interested Subject Matter Experts (SMEs) within CDC, with a goal of identifying assistance methodologies to improve PHL informatics capabilities on a national level. The discussion centered on CDC's proposal to develop a business case that would support PHLs in their requests for investment in laboratory informatics, with the intent of focusing the business case on specific informatics enhancements within laboratories. During the meeting, there was nearly universal feedback from the state participants that rather than a 'business case' approach, they would prefer a guided self-assessment matrix/tool that could be used to evaluate their current informatics capabilities as compared to a defined baseline. This tool would assist the PHL in understanding areas in need of improvement (or otherwise) based on a national standard accepted by all PHLs. Ideally, such a tool would be designed in coordination with potential future funding sources to ensure the assessment results could appropriately support grant/funding applications.
The following summarizes the meeting activities and specific outputs from the meeting.

2. Introduction and Background:

CDC has developed the Laboratory Efficiencies Initiative (LEI) to support PHLs across the US, now operating under severe fiscal and human resource pressures, in providing critically important testing services to protect the public's health. The LEI is focused on adoption of high-efficiency management practices to help PHLs maintain critical testing services. The LEI hopes to help PHLs across the country improve long-term sustainability by identifying high-efficiency management practices and, through grants, assist states in the implementation of those processes. Laboratory informatics capability is one of the key strategies for the LEI. As a part of LEI, LSPPPO/OSELS/CDC has initiated a project with Booz Allen Hamilton to provide a business case analysis for informatics enhancements that increase efficiency in PHLs.

3. Purpose and Objectives:

On December 15th, 2011, members from APHL and CDC convened in Atlanta, Georgia to participate in a consultation meeting. Participants in the one-day event included informatics directors from PHLs, APHL and CDC Subject Matter Experts (SMEs). This group engaged in a facilitated, dynamic, participant-driven discussion sharing their knowledge, expertise, experiences and plans to help identify gaps and prioritize needs that would impact informatics capabilities within PHL's
The participants were asked to advise on the current state of informatics enhancements being implemented, and on the availability of electronic management systems in PHLs. The participants were also requested to focus on the key aspects of the business case as well as share their expectations of the final product to make it most relevant to their needs. The day's discussion was centered on three

objectives:
- ➢ **Objective 1: Identify informatics challenges, needs and gaps for SPHLs with a focus on increasing efficiency in the laboratory and supporting its business processes**
- ➢ **Objective 2: Advise on current state of informatics enhancements implemented and availability of electronic management systems in SPHL's.**
- ➢ **Objective 3: Prioritize informatics needs identified in objective 1 of the State Public Health Laboratories for improving efficiency of their processes and quality of data**

4. Methodology:

Prior to the meeting a conference call was held to brief participants about the purpose and expected outcome of the meeting. The attendees were provided with background information on LEI and the proposed objectives. (Appendix1). The meeting commenced with opening remarks by Dr. Steven Thacker, Director of the Office of Surveillance, Epidemiology and Laboratory Services (OSELS). Dr. Thacker welcomed the attendees and stated that the meeting's focus was on achieving efficiencies with respect to informatics capabilities in PHLs, thereby helping PHLs during budget constraints; understanding the current landscape of informatics in PHLs; discussing initiatives that have been successful or unsuccessful; and receiving ideas about how CDC/SPHLs can collaborate to develop a product that will enable the PHLs to demonstrate cost savings and efficiencies to state legislatures and government.

Dr. Thacker's introduction was followed by an overview of APHL informatics activities by Michelle Meigs, Senior Informatics Program Manager at APHL. She discussed APHL's informatics mission, core informatics activities, previous and ongoing APHL-PHL collaborative projects on interoperability (e.g. PHLIP project), StarLiMS gap analysis project, APHL engagements in projects around workforce and policy development, landscape of PHL informatics in general and implementation success stories.

This was followed by Dr. John Ridderhof's, Senior Advisor for LSPPPO, introduction to LEI objectives and activities, with a primary focus on LEI informatics. He mentioned that PHLs need to express what is most useful to them and that CDC is committed to providing decision support tools to the states, and sharing these across state lines. He stated the goals of the meeting and the expected outcomes and benefits of the project.

The introduction was followed by a facilitated discussion around the specific objectives including the current informatics capabilities of PHLs, the challenges, needs and gaps at different levels encountered by PHLs. At the conclusion, the group participated in an open discussion providing a list of possible solutions to address their needs, they suggested some next steps, and restated their expectation and comments on the outcome which should be an end product that could be used by PHLs to get the buy-in required for making the needed investment in and adoption of informatics.

4.1. Facilitated Discussions:

The meeting participants appreciated being brought to the table and included in this conversation. The attendees expressed that the purpose and the topics included in the agenda were relevant to their needs and PHLs would greatly benefit from a project of this nature that created an opportunity to support the states and their needs. The attendees expressed their full support and viewed this effort as their immediate priority, and committed to be engaged and contribute.

While the original purpose of the meeting was primarily to identify priority enhancements and provide a business case analysis, in the course of discussion all attendees came to a consensus about the need to sustain what has already been built, particularly those states that have invested significantly in capacity. The group was also unanimous in the need to assure that measures of interoperability related to meeting meaningful use objectives and mechanisms necessary for surveillance, and other programmatic activities are in place. The group agreed that it is key to identify 10-15 key components of the overall information system enterprise and rate these as minimal or optimal capabilities The objective should be to develop a tool to measure existing capabilities of a SPHL's information system and move them forward in critical areas, such as meeting meaningful use objectives, while providing rationales and guidance for maintaining current informatics investments. This measurement tool would also enable the "have not" states to get equipped with the minimum capabilities.

The group emphasized the need for informatics to be perceived as part of the core operations of a PHL. The discussion focused on:

4.1.1. Resources:

PHLs need to have appropriate informatics resources (hardware, software, equipment, trained informatics personnel) and systems that are interoperable with other types of public health data systems. There is also a dire need for management of appropriate resources especially in hiring and retaining of trained PH informatics personnel.

4.1.2. Funding:

There is a lack of understanding of informatics funding/resources allocation, funding source's objectives and expected outcomes, and requirements to secure funding. In addition PHL's cannot depend on sustained funding for informatics activities as they typically rely on program funds or episodic funding streams. PHLs would benefit from representation of both their informatics and testing needs in grant procurement endeavors. They also need to explore low cost ideas for achieving their billing priorities. Finally, it is critical for PHL's to get clarity on the impact of consolidation of laboratory services on operations, funding and resource allocation within a PHL.

4.1.3. Standardization:

Establishment of common standards for data exchange between hospitals/private laboratories and PHL's is critical, with emphasis on standards for data type, data quality, forms, messaging formats and message payload schemas. In addition, there needs to be agreement on common vocabulary and standards for exchanging laboratory data on clinical, animal and environmental specimens. All data exchange activities must support the business processes of a PHL. Engaging in messaging and data exchange efforts will maximize efficiencies in the PHL and thus enable them to truly benefit from automating their systems. It can also establish efficient practices to maintain data streams to and from their submitters. To further gain efficiency in their informatics and business processes, PHL's can

consider the adoption of LEAN methods.

4.1.4. Sustainability:

PHLs need to be able to sustain their current informatics enhancements and be able to leverage current and additional investment by creating metrics for assessing Return on Investment (ROI) for such informatics efforts. PHLs must sustain implemented LIMS and corresponding momentum and efficiencies gained in order to offset budget and resource cuts. They also need to be able to utilize their LIMS to spring board messaging activities. PHLs must factor in amortization of the cost of the equipment needed for sustaining informatics capabilities and document associated depreciation. Lastly, the cost of new modifications and updated versions/releases must be accommodated as well. For these purposes, PHLs need to identify, list and demonstrate the critical business processes that require resources to be sustained. Exploring cross program informatics solutions which may decrease cost and subsidize other operations could be beneficial as well.

4.1.5. Policies/Agreements:

PHL's require State level agreements and MOUs between PHLs across different states for data sharing as well as guidelines and policies for access and usage of data. These will ultimately guide data exchange efforts as well.

4.2. Proposed Solution/Opportunity:

PHLs require a tool that will enable them to conduct a self-assessment of current informatics capabilities that includes available functionality within an existing enterprise information system, an inventory of systems, hardware, and software, costs incurred over time, depreciating factors and ROIs. Moving forward, PHLs may have to explore different models for data collection and management e.g. centralized, privatized, cloud based, or networked approaches based on the solution that appropriately supports their business processes. They should simultaneously consider engaging in activities around 'meaningful use' objectives to establish a model for data exchange/messaging standards.
CDC will assist PHLs to identify a minimum set of requirements and standards for informatics capabilities within a PHL. In turn, PHLs need to develop plans and forge necessary relationships such as private sector partnerships to perform multiple coordinated tasks in the event of an emergency that will support new testing methods, surge testing and data exchange. PHLs can use the minimum requirements to develop issue memoranda for systems not performing to the desired expectation level, and create budget change proposals and justification to support the system changes needed.

5. Expected product/deliverable:

As stated above, the attendees were unanimous in their need for a self-assessment tool for PHLs that would enable laboratories to evaluate their existing informatics capabilities against a baseline, including the 16 core business processes as defined by APHL (http://www.aphl.org/aphlprograms/informatics/Documents/reqs_for_PHLIMS.pdf) The self-assessment tool/matrix should encompass major components of laboratory informatics like ETOR, LIMS etc. and include a semi-quantitative grading system based on key performance indicators

identified through published documents and standards, best practices, SME reviews and interviews. Use of this tool will also help identify key gaps, prioritize needs, provide links to established standards, best practices and policies. Ideally the self-assessment tool/measurement matrix will be coordinated with potential future sources of funding. Attendees stated they would like to see an output which could be used to support their requests for resources to improve capabilities in areas that show up as needing improvement through the self-assessment tool.

The following points summarize some of the key elements, to be considered in the development of a self-assessment tool kit.

- Identification of Key Performance Indicators (KPI) for PHLs. The output of each KPI could include classification categories (e.g. deficient, under development/in progress, meets, exceeds), associated questions and descriptors related to each of these categories.
- Identification and inclusion of indicators and performance matrices specifically for interoperability, MOUs, policy/practices, and COOP.
- Inventory of PHL's current systems, resources, applications
- Gap analysis report based on the above inventory.
- Identification of best practices across PHLs and evaluation of current systems' performance.
- Access to informatics capabilities and identification of business cost and implications (technical and business) of losing current capabilities.
- Inclusion of example cases of measures undertaken by PHLs to gain efficiency, the process, the gains achieved and system's current performance.
- Development of Scorecards (e.g. CMMI level) for keeping informatics systems up to date and sustain those for the next 10 years by accommodating changes in processes.
- The evaluation matrix needs to be broad enough to accommodate small and large PHLs with widely varying capabilities.
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An example that was discussed at the meeting for development of the self-assessment tool/matrix specifically related to ETOR

- Metrics: 0-No electronic interaction/ All paper; 1-Do electronic reporting/send pdf file of results; 2- web-based reporting; 3 – HL7; 4 – HL7 to EMR, meaningful use compliant.
  - Example of a best case scenario can be a State which has the ability to be compliant with meaningful use objectives and exchange data following established messaging (HL7) standards. Include gradation in each area to determine current levels of PHLs (high- low) and incorporation of enhancements implemented along with explanation of reason for deficiency.

6. Proposed Next Steps:

The proposed next steps are discussed below.

- Develop and establish work plan (Booz Allen, CDC and APHL).
- Establish working groups.
- Identification of other PHLs (by PHL members) for engaging in the project.
- Identify and establish KPIs, a process to identify and quantify a minimum standard for each capability, whereby the states can rate their current level.

- Interview the PHLs that are "haves". Gather information on lessons learned around informatics capabilities/efficiencies gained from states that have addressed major informatics issues and the ROI achieved by their organizations in terms of efficiencies, status and visibility.
- Interview the "have nots" and gather information on the resources needed in terms of laboratory informatics capabilities, major obstacles, and informatics areas they would like to address provided funding was not a constraint
- Define the process to maintain, sustain and ensure "future proof" efficient Lab Informatics activities at different levels of PHLs (small, medium, large, or local, regional, state, federal)
- Identification of strategies (funding, programmatic and long term sustainability plans) adopted by the PHLs that can be adopted as a best practice for other labs.
- Conduct a literature review/document search and compile a list of reference documents/resources that could be used by PHLs as they develop their strategies (policy documents, business/workflow analyses) along with a listing of best of breed templates (MOUs, SLAs, RFPs etc.)
- Convene mid-year meeting with stakeholders and participants to update on project progress