The State Public Health Laboratory System Improvement Program (L-SIP) Assessment Applied to a Local Public Health Laboratory System (LPHL System)

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Abstract

Objective

The Association of Public Health Laboratories (APHL) Laboratory System Improvement Plan (L-SIP) assessment, originally designed for state Public Health Lab (PHL) Systems, was applied to a Local Public Health Lab (LPHL) system for the first time in Milwaukee, Wisconsin in 2010. Model Standards, Key Indicators and Key Ideas from the APHL assessment tool were modified to reflect local system responsibilities. An LPHL System definition indicated that a local system is different from, but complements a state system.

Results

On November 18, 2010, 75 stakeholders representing over 35 agencies convened to assess the Milwaukee PHL System. A plenary session and 3 facilitated breakout groups assessed the system's effectiveness in fulfilling the 10 Essential Services of Public Health using the revised tool. Themes, ideas, strengths and weaknesses of the LPHL System were captured as were scores for each Key Idea and Essential Service.

Conclusions

APHL's L-SIP performance measurement tool can be applied to a local system. Scores indicated that the strength of Milwaukee's LPHL System lies in its ability to monitor health status through surveillance systems, disease diagnosis and investigations. Weakness within the system related to research. Education, assuring services to underserved populations and workforce development were identified with significant activity. The System's ability to mobilize partnerships, develop policies, enforce laws and regulations and evaluate its capacity and support public health efforts had only moderate activity.

Through the APHL-CDC Innovation Grant, specific system improvements via stakeholder strategic planning sessions will occur.

Introduction

What is L-SIP?

- A collaborative effort of the Association of Public Health Laboratories and Centers for Disease Control and Prevention
- Inspired and influenced by the National Public Health Performance Standards Program which was established in 2002
- Implemented by 25 state public health laboratories
- The City of Milwaukee Health Department Laboratory (MHDL) is the first local public health laboratory to adapt and implement L-SIP at the local system level

To implement the LSIP assessment for a Local Public Health Laboratory system (LPHL system), MHDL:

- Developed a definition of a Local Public Health Laboratory System
- Modified APHL's Laboratory System Improvement Program Performance **Measurement Tool (http://city.milwaukee.gov/lsipresults)** to reflect a local application
- Customized the visual depiction of a State Public Health Laboratory System to represent a Local System

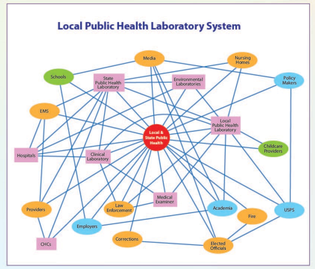
The LSIP Assessment is designed to measure the capacity of the system relative to the ten Essential Services (E.S.) of Public Health. Each E.S. is measured through one or more Indicators, each of which includes a Model Standard.

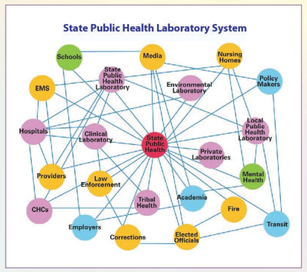
MHDL has secured an APHL Innovations in Quality Public Health Laboratory Practice grant for 2011 to implement the Strategic Planning follow-up steps of the LSIP Assessment.

A 59-page assessment report is posted on the MHDL webite at **http://city.milwaukee.gov/lsipresults.**

Laboratory Systems

Local vs. State Systems





Local PHL Systems differ, but complement State PHL Systems in several important ways, including:

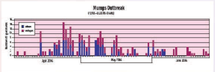
1. Provide and prioritize testing at the site of patient care and/or addressing local environmental issues;
2. Support the mission of local public health departments;
3. Serve as surge capacity for State PHLs, particularly for testing in support of emergency response;
4. Provide rapid and relevant responses to local community needs through leadership of a local public health lab, typically co-located within a local public health agency with a team of investigators, inspectors and community professionals;
5. Have strong ties and proximity to the community served.

Milwaukee's Local PHL System in Action

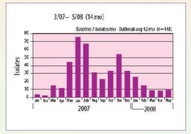
2004 Recall of Contaminated Children's Candy

2006 Falk Explosion – Site Testing

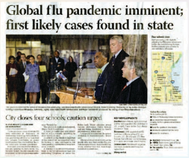
2006 Local and State Mumps Outbreak



2007 Local Shigella sonnei Outbreak



2009 Swine Flu Pandemic



2009–10 Internships with Academic Partners

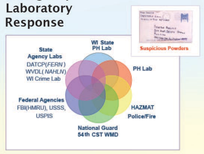
MHDL Public Health "e" Lab Network of metro-Milwaukee

- Monthly report of confirmed infections
- Laboratory surveillance tool
- Emergency preparedness information
- Continuing Education

Research with Stakeholders

- Multi-jurisdictional/EPA beach method studies
- Blood Research Institute – Influenza Collaboration
- Medical Examiner/CDC viral studies and SIDS

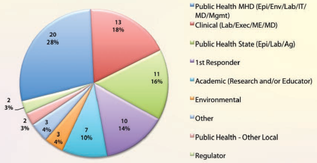
Emergency Laboratory Response



The L-SIP Process

Who Attended?

LSIP Assessment Participants by Category (n=71)



ACADEMIC

- Marquette University College of Health Sciences - Associate Professor, Clinical Laboratory Science
- Medical College of Wisconsin - Professor of Microbiology & Molecular Genetics
- Milwaukee Area Technical College, Health Operations - Clinical Coordinator, Clinical Laboratory Technician Program
- University of Wisconsin - Milwaukee Great Lakes Water Institute - Associate Scientist
- University of Wisconsin - Milwaukee representatives

FIRST RESPONDERS

- City of Milwaukee Department of Public Works - Security Operations Manager
- City of Milwaukee Fire Department Battalion Chief
- City of Milwaukee Police Department Lieutenant, Intelligence Fusion Center
- Department of Homeland Security Intelligence Officer
- FBI - Weapons of Mass Destruction, Special Agent
- Milwaukee County Emergency Management Coordinator
- Southeastern Wisconsin Threat Analysis Center Intelligence Officer
- U.S. Postal Service representatives

PUBLIC HEALTH

- City of Franklin Health Department - Health and Social Services Director
- City of Milwaukee Health Department and Health Lab representatives
- City of Wauwatosa Health Department - Environmental Health Manager
- Wisconsin Division of Public Health representatives
- Wisconsin State Laboratory of Hygiene representatives

CLINICAL

- Aurora Consolidated Laboratories Director of Microbiology
- Aurora Health Care Vice President of Research & Academic Relations
- Children's Hospital of Wisconsin representatives
- Columbia St. Mary's Hospital Microbiology Technical Specialist
- Dynacare Laboratories Microbiology Manager
- Midwest Clinical Laboratories Microbiology Director
- Planned Parenthood of Wisconsin Vice President of Patient Services
- STD Specialties Clinic Medical Director
- Waukesha Memorial Hospital Microbiology Lab Director
- Zablocki VA Medical Center Microbiology Supervisor

ENVIRONMENTAL

- City of Milwaukee Department of Neighborhood Services - Environmental Code Enforcement Manager
- Milwaukee Metropolitan Sewerage District Laboratory Manager
- Milwaukee Water Workds Linwood Plant - Water Quality Manager
- Wisconsin State Agriculture Laboratory Director

REGULATORY

- Wisconsin Department of Agriculture,Trade & Consumer Protection - Division of Food & Safety Laboratory Evaluation Officer
- Wisconsin Department of Health Services - Quality Assurance Program Specialist

OTHER

- Milwaukee County Medical Examiner's Office - Assistant Medical Examiner
- Milwaukee County Zoo Chief Veterinarian
- Wisconsin State Crime Lab Safety Officer & Forensic Science Supervisor, DNA

10 Essential Services of Public Health

1. **MONITOR** health status to identify and solve community health problems.
2. **DIAGNOSE** and investigate health problems and health hazards in the community.
3. **INFORM,** educate, and empower people about health issues.
4. **MOBILIZE** community partnerships and action to identify and solve health problems.
5. Develop **POLICIES** and plans that support individual and community health efforts.
6. **ENFORCE** laws and regulations that protect health and ensure safety.
7. **LINK** people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. **ASSURE** competent public and personal health care workforce.
9. **EVALUATE** effectiveness, accessibility, and quality of personal and population-based health services.
10. **RESEARCH** for new insights and innovative solutions to health problems.

These 10 essential services are further broken down into 25 indicators and 44 key ideas.

Performance

	Essential Public Health Service: 1	2	3	4	5	6	7	8	9	10
4 – Optimal Activity	83.4	89.0								
3 – Significant Activity			67.0				67.0	61.2		
2 – Moderate Activity				33.0	30.3	44.3			50.0	
1 – Minimal Activity										16.7
0 – No Activity										

Essential Service #1: Monitor Health Status		
Overall Rating: 83.4 – Optimal	Indicator Rating	Key Idea Ratings
1.1 Surveillance Information Systems	100.0	4, 4, 4
1.2 Monitoring Health Status	66.8	3, 4, 2, 3

Essential Service #2: Diagnose & Investigate		
Overall Rating: 89.0 – Optimal	Indicator Rating	Key Idea Ratings
2.1 State-of-the-Art Testing	100.0	4
2.2 Collaboration & Networks	100.0	4
2.3 Continuity of Operations	67.0	3

Essential Service #3: Inform, Educate, & Impower		
Overall Rating: 67.0 – Significant	Indicator Rating	Key Idea Ratings
3.1 Outreach & Communication	67.0	3
3.2 Public Information	67.0	3, 3
3.3 Education	67.0	3

Essential Service #4: Mobilize Partnerships		
Overall Rating: 33.0 –Moderate	Indicator Rating	Key Idea Ratings
4.1 Outreach & Communication	33.0	2
4.2 Public Information	33.0	2, 2
4.3 Education	33.0	2

Essential Service #5: Develop Policies & Plans		
Overall Rating: 33.0 –Moderate	Indicator Rating	Key Idea Ratings
5.1 Role in Policy Making	50.0	3, 2
5.2 Partnerships in Planning	36.0	3, 1
5.3 Dissemination & Evaluation	5.0	1, 1

Essential Service #6: Enforce Laws & Regulation		
Overall Rating: 44.3 – Moderate	Indicator Rating	Key Idea Ratings
6.1 Revision of Laws & Regulations	5.0	1
6.2 Encourage Compliance	83.5	3, 4

Essential Service #7: Link People to Services		
Overall Rating: 67.0 – Significant	Indicator Rating	Key Idea Ratings
7.1 Availability of Lab Services	67.0	3

Essential Service #8: Competent Workforce		
Overall Rating: 61.2 – Significant	Indicator Rating	Key Idea Ratings
8.1 Workforce Competencies	83.5	3
8.2 Staff Development	67.0	3, 3
8.3 Assuring Workforce	33.0	2, 2

Essential Service #9: Evaluation of Effectiveness		
Overall Rating: 50.0 –Moderate	Indicator Rating	Key Idea Ratings
9.1 System Mission and Purpose	67.0	3, 3
9.2 System Effectiveness	50.0	3, 2
9.3 System Collaboration	33.0	2

Essential Service #10: Research		
Overall Rating: 16.7 – Minimal	Indicator Rating	Key Idea Ratings
10.1 Planning & Financing	19.0	2, 1
10.2 Implementation & Dissemination	14.3	1, 1, 2

Participants were also asked to rate the meeting itself for effectiveness. All 14 points were heavily rated in the 'Very Good' to 'Superb' range. For the 2 overall rating questions, 88% felt the assessment meeting had been a helpful tool and process, and 90.4% said that they would participate in the process again.

Project Timeline

2010 — **2011**

- 5-11-10 Inital key meeting with consultant, administration, laboratory. Initially fund consultant through lab revenue.
- 6-1-10 Contracted consultant (6-1-10 – 9-30-10)
- 6-16-10 Consultant observes Minnesota's LSIP assessment. Lab Director presents LSIP informational seminar to lab staff.
- 9-27-10 APHL $4,000 mini-grant awarded for LSIP assessment.
- 10-8-10 Invitations to LSIP sent.
- 10-29-10 LSIP website ("LSIP Lab Communicator") goes live.
- 11-16-10 Received APHL Innovation Grant Award for LSIP (11/15/10 – 7/31/11); $20,000. Consultant can now continue with LSIP work post-assessment.
- 11-18-10 ASSESSMENT DAY !
- 2-25-11 Assessment report posted on LSIP website. Spike in website hits.
- 3-1-11 Assessment report sent to stakeholders.
- 3-30-11 Webinar: presented assessment results to stakeholders.
- 6-3-11 Laboratory Advisory Committee (LAC) to meet. Strategic planning with assessment results begins. Identify 1 to 3 priorities.
- 7-31-11 Innovation grant ends. Reports due.
- Future….? LAC continues strategic plan implementation (?)

Next Steps

These will be made possible through the APHL/CDC Innovations in Quality Public Health Laboratory Practice Award

1. A webinar of the assessment results presented to stakeholders.
2. A Laboratory Advisory Committee (LAC) of 13 stakeholders will, through a formal rating process, review and rate the priority areas into groups useful for action planning. Consensus, priorities will be identified that are practical, achievable, and within budget and staffing ability.
4. Subcommittee(s) will generate and sort possible root causes of weakness or problems in the system. P riority barriers will be identified for action.
5. Process improvement strategies identified by the LAC will strengthen the laboratory system in Milwaukee (pending funding availability)
6. Webinars and the LSIP website will inform stakeholders of continued progress.

Acknowledgements

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- Laura Vanderbilt and Nancy Hills – Poster design

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