

Public Health Laboratory System Improvement Plan

Strategic Direction

City of Milwaukee Public Health Laboratory



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Laboratory Director

December 14, 2011

Acknowledgements

- Bevan K. Baker, FACHE Commissioner of Health
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What is the Laboratory System?

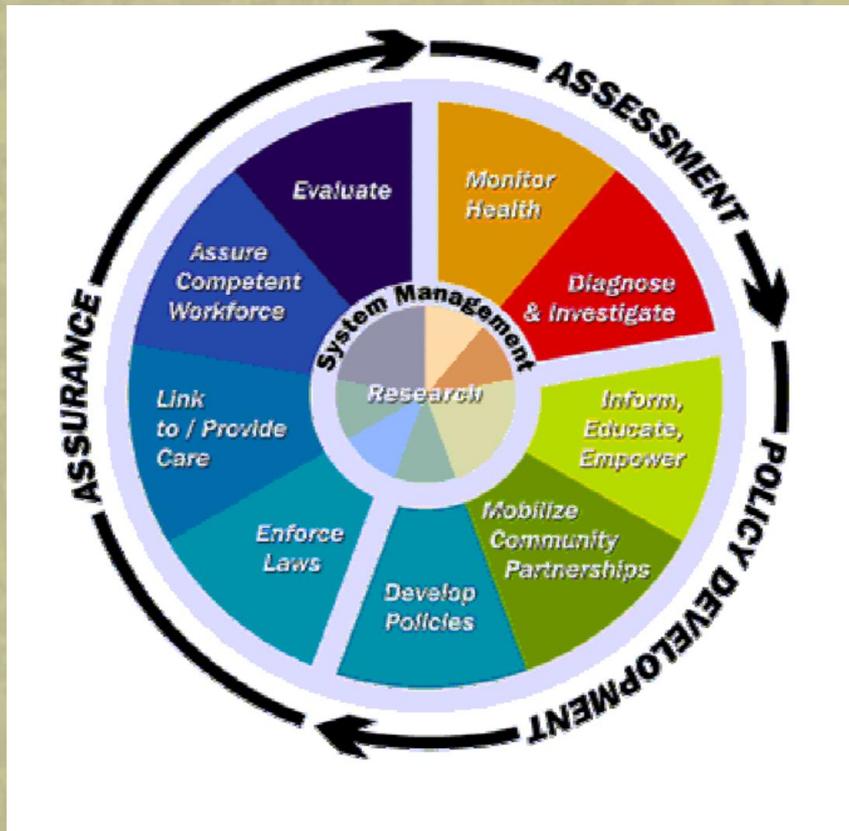
- All the organizations that participate in or otherwise support public health laboratory testing.
- Includes those who initiate testing and those who ultimately use the test results.
- The *system* is more than the public health laboratory

LSIP Origins

- since 2002, National Public Health Performance Standards Program (NPHPSP) measures :
 - *components,*
 - *activities,*
 - *competencies*
 - *capacities of* PH systems.
- 100's of LPHA assessed w NPHPSP
- Since 2006: PH Lab “Systems”

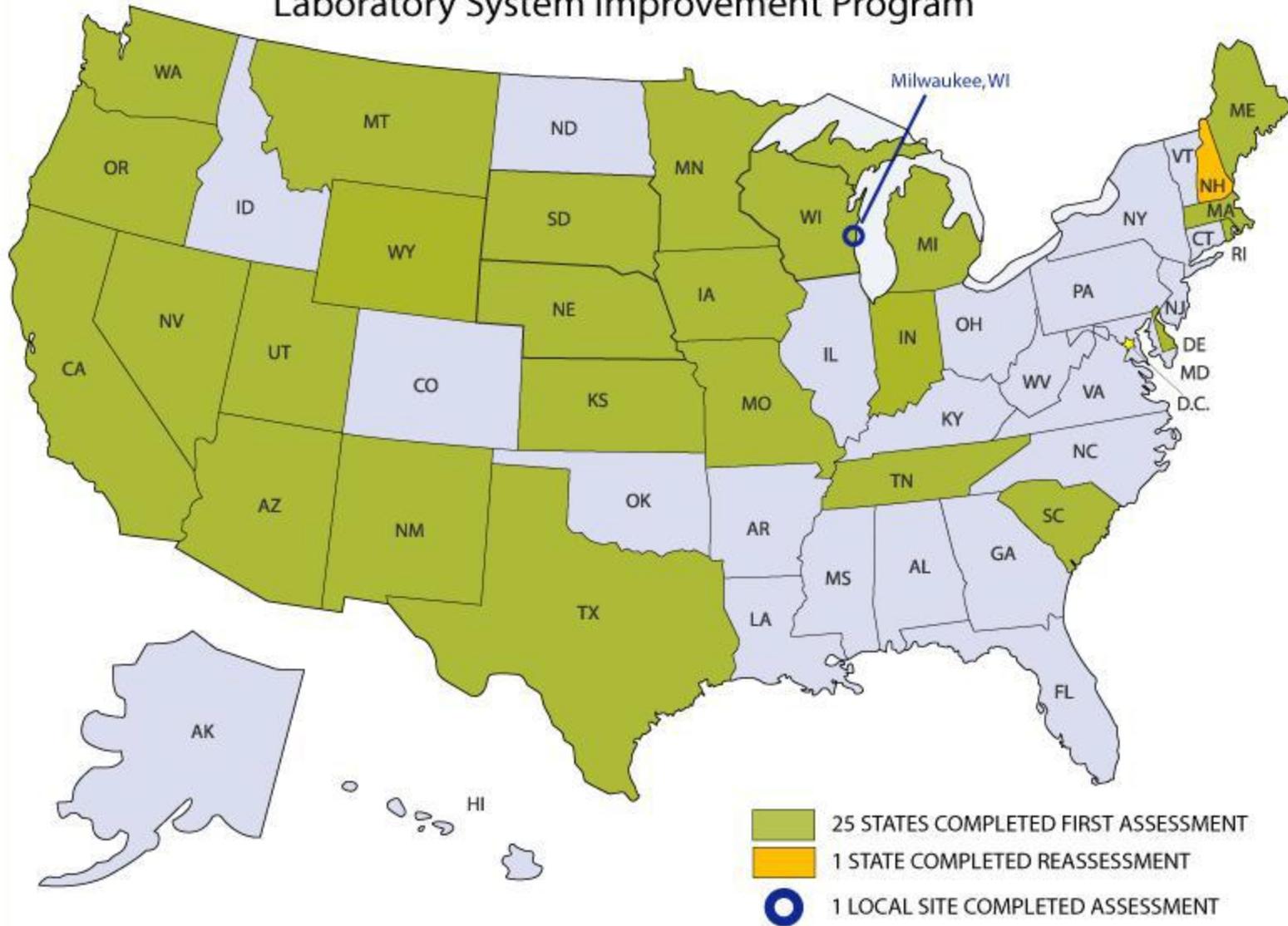
Concepts used in L-SIP State PHLs Assessment:

The 10 Essential Services of Public Health 1994



- **11 Core Functions of Public Health Laboratories**
- Disease Prevention, Control and Surveillance
- Integrated Data Management
- Reference and Specialized Testing
- Environmental Health and Protection
- Food Safety
- Laboratory Improvement and Regulation
- Policy Development
- Public Health Preparedness and Response
- Public Health Related Research
- Training and Education
- Partnerships and Communication

Laboratory System Improvement Program



Since 2007

Examples Milwaukee's Local PHL System in Action:

1. The E coli spinach outbreak
 - PFGE: identifying spinach infected individuals with 24 hours; messaging the clinical laboratory community
2. The Falk Explosion
 - Receiving specimens for testing at MHDL and forwarding to WSLH
3. Anthrax powder threats
 - Working with FBI, law enforcement, stated and federal agencies in testing and communicating results; Post office back up lab
4. The shigella outbreak
 - year long local-only outbreak of multi-drug resistant shigellosis
5. Pandemic H1N1 Influenza 2009
 - provided lab and informational service to 42 local providers; coordinating information with local, state, national and WHO partners.
6. Other: Mumps, pertussis, Norovirus, beach monitoring, lead poisoning,



Tom Barrett, Mayor
Bryan K. Baker,
Commissioner of Health
www.milwaukee.gov/health

Definition of a Local Public Health Laboratory¹ System or Network *(Within a State Public Health Laboratory System^{2,3})*

A public health laboratory system is an alliance of laboratories and other partners within a state or locality that supports the ten essential public health services. System members and stakeholders operate in an interconnected and interdependent way to facilitate the exchange of information, optimize laboratory services, and help control and prevent disease and public health threats.

LSIP Potential Benefits

1. **Improves organizational and community communication and collaboration**
2. **Educates partners of public health interconnectedness = higher appreciation and awareness**
3. **Strengthens the diverse network = more cohesion, resource coordination less duplication of services.**
4. **Identifies strengths and weaknesses**
5. **Provides a benchmark (gold standards) for practice improvements**

Assessment Day: Nov. 18th

76 attendees

(22 MHD staff)

- **35 agencies (examples)**

- Academia
 - 1st responders (police, Hazmat, FBI, security, USPIS)
 - Regulators
 - Clinical microbiologists
 - Crime lab
 - Researchers (medical, environmental)
 - Clinicians
 - Epidemiologists
 - Clinics
 - Ag Lab
 - Zoo veterinarian
 - Sewerage District
 - Water Works
 - State PH lab
 - Local health departments
 - Telecommunications
 - Medical Examiner
- **Missing**
 - Natural resources
 - CBO's

Plenary session followed by 3 breakout sessions





Stakeholders Scored 44 Key Ideas for Measuring System Capacity of the 10 Essential Services

Key Ideas Sorted by Score

Stakeholders Scored 44 Key Ideas for Measuring System Capacity of the 10 Essential Services
Key Ideas Sorted by Score

| ESSENTIAL SERVICE | INDICATOR | SCORE | KEY IDEA |
|-------------------|-----------|---|---|
| #5 | POLICIES | Indicator 5.2: Partnerships in Public Health Planning Indicator 5.3: Dissemination and Evaluation | 1 KEY IDEA 5.2.2: issues are represented in local and state-level plans and policies |
| | | | 1 KEY IDEA 5.3.1: widely disseminated to inform other stakeholders and public |
| | | | 1 KEY IDEA 5.3.2: evaluated and updated |
| #6 | ENFORCE | Indicator 6.1: Revision of Laws and Regulations | 1 KEY IDEA 6.1.1: recommends revisions |
| #10 | RESEARCH | Indicator 10.1: Planning and Financing Research Activities Indicator 10.2: Implementation, Evaluation, and Dissemination | 1 KEY IDEA 10.1.2: collaborates to finance |
| | | | 1 KEY IDEA 10.2.1: diverse perspectives and expertise to stimulate |
| | | | 1 KEY IDEA 10.2.2: evaluated |
| #1 | MONITOR | Indicator 1.2: Monitoring of Community Health Status | 2 KEY IDEA 1.2.4: generates reliable information |
| #4 | MOBILIZE | Indicator 4.1: Constituency Development Indicator 4.2: Communication | 2 KEY IDEA 4.1.1: develop and maintain positive relationships |
| | | | 2 KEY IDEA 4.2.1: communication plan is fully integrated with partners' and collaborators' communication plans |
| | | | 2 KEY IDEA 4.2.2: regular, timely, and accurate |
| | | Indicator 4.3: Resources | 2 KEY IDEA 4.3.1: share existing resources and/or to identify new resources |
| #5 | POLICIES | Indicator 5.1: Role in Laboratory Related Policy Making | 2 KEY IDEA 5.1.2: informed by science and data |
| #8 | ASSURE | Indicator 8.3: Assuring Laboratory Workforce | 2 KEY IDEA 8.3.1: attracts and retains exceptional staff |
| | | | 2 KEY IDEA 8.3.2: addresses workforce shortage issues |
| #9 | EVALUATE | Indicator 9.2: System Effectiveness, Quality, and Consumer Satisfaction Indicator 9.3: LPH Laboratory System Collaboration | 2 KEY IDEA 9.2.2: Quality is regularly determined |
| | | | 2 KEY IDEA 9.3.1: level and utility of collaboration measured and the results are shared |
| #10 | RESEARCH | Indicator 10.1: Planning and Financing Research Activities Indicator 10.2: Implementation, Evaluation, and Dissemination | 2 KEY IDEA 10.1.1: adequate capacity to plan research and innovation activities |
| | | | 2 KEY IDEA 10.2.3: disseminates research outcomes, best practices, and recognition |
| | | | |
| #1 | MONITOR | Indicator 1.2: Monitoring of Community Health Status | 3 KEY IDEA 1.2.1: system to gather data |
| | | | 3 KEY IDEA 1.2.5: integrated information management system |
| | | | 3 KEY IDEA 2.3.1: capacity, authority, and other preparations to assure rapid response to PH emerg. |
| #2 | DIAGNOSE | Indicator 2.3: Continuity of Operations Plan and Surge Capacity | 3 KEY IDEA 3.1.1: system of outreach and communication to inform |
| #3 | INFORM | Indicator 3.1: Outreach and Communication with Partners Indicator 3.2: Public Information | 3 KEY IDEA 3.2.1: creates and delivers targeted laboratory information to appropriate health partners |
| | | | 3 KEY IDEA 3.2.2: to appropriate non-health partners and the public |
| | | | 3 KEY IDEA 3.3.1: empower community partners |
| | | Indicator 3.3: Education | 3 KEY IDEA 5.1.1: contribute their expertise and resources to inform and influence policy |
| #5 | POLICIES | Indicator 5.1: Role in Laboratory Related Policy Making Indicator 5.2: Partnerships in Public Health Planning | 3 KEY IDEA 5.2.1: obtains input from diverse partners |
| #6 | ENFORCE | Indicator 6.2: Encourage Compliance | 3 KEY IDEA 6.2.1: has mechanisms in place to encourage or promote compliance |
| #7 | LINK | Indicator 7.1: Availability of Laboratory Services | 3 KEY IDEA 7.1.1: identifies laboratory service needs and collaborates to fill gaps |
| #8 | ASSURE | Indicator 8.1: Workforce Competencies Indicator 8.2: Staff Development | 3 KEY IDEA 8.1.2: tools to assess competency |
| | | | 3 KEY IDEA 8.2.1: identify staff development needs |
| | | | 3 KEY IDEA 8.2.2: promote the availability of resources for staff development |
| #9 | EVALUATE | Indicator 9.1: System Mission and Purpose Indicator 9.2: System Effectiveness, Quality, and Consumer Satisfaction | 3 KEY IDEA 9.1.1: services , as related to its mission and purpose, are evaluated |
| | | | 3 KEY IDEA 9.1.2: process in place for periodic review and evaluation of the test menus and technologies |
| | | | 3 KEY IDEA 9.2.1: accessibility and effectiveness is regularly determined |
| #1 | MONITOR | Indicator 1.1: surveillance information systems Indicator 1.2: Monitoring of Community Health Status | 4 KEY IDEA 1.1.1: identifies sentinel health events and trends |
| | | | 4 KEY IDEA 1.1.2: participates in surveillance |
| | | | 4 KEY IDEA 1.1.3: collaborate to strengthen surveillance systems |
| | | Indicator 2.1: Appropriate and State of the Art Testing | 4 KEY IDEA 1.2.2: identifies and detects infectious diseases and contributes to surveillance |
| #2 | DIAGNOSE | Indicator 2.2: Collaboration and Networks | 4 KEY IDEA 2.1.1: assures the diagnosis and investigation |
| | | | 4 KEY IDEA 2.2.1: actively involved in networks that collaborate in the epi. investigation of and response |
| #6 | ENFORCE | Indicator 6.2: Encourage Compliance | 4 KEY IDEA 6.2.2 comply with all applicable laws and regulations |
| #8 | ASSURE | Indicator 8.1: Workforce Competencies | 4 KEY IDEA 8.1.1: identify position requirements |

Assessment Captured:

109 comments as themes
72 suggested next steps

PERFORMANCE
Essential Public Health Services

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|
| Optimal Activity | 83.4 | 89.0 | | | | | | | | |
| Significant Activity | | | 67.0 | | | | 67.0 | 61.2 | | |
| Moderate Activity | | | | 33.0 | 30.3 | 44.3 | | | 50.0 | |
| Minimal Activity | | | | | | | | | | 16.7 |
| No Activity | | | | | | | | | | |

Milwaukee LSIP Laboratory Advisory Committee Meeting June 3, 2011

State Lab Dir
State Epi
Dean Hlth Sci
VP Comm Outr
Micro Dir
Fmr Commis.
Local HO
Dir MT School
Local MD PH
Dir FrshWtr Inst
LD Swrg Dist.
UPSIS-FBI



Possible directions:

- Communications
- Research
- Workforce development

*MLAC members and SME's in the areas of research and workforce development gathered on **August 2, 2011** at the Greater Milwaukee Foundation to brainstorm steps to strengthen LPHL system efforts in those areas. [Research SMEs pictured.]*

*MLAC met again on **September 26, 2011** to formulate Strategic Direction.*



Strategic Directions

← Workforce Development

| Milwaukee Laboratory Advisory Committee Laboratory System Improvement Program | | | |
|---|---|--|---|
| November 2011 | | | |
| Strategic Directions | | | |
| What innovative & substantial actions can we take to strengthen <u>workforce capacity</u> within the Local Public Health Laboratory (LPHL) system? | | | |
| Educate the public and health care professionals on the importance of the LPHL System | Attract a motivated & highly skilled workforce | Retain an engaged & competent workforce | Invest in innovative technology to improve efficiency & capacity |
| <p>Promote LPHL successes through the media and public information officers to communicate how the LPHL system impacts the public's health.</p> <p>Establish a legislative outreach and advisory committee</p> <p>Parking Lot Capitalize on outbreaks and public health emergencies to highlight the work of the public health laboratory system</p> | <p>Elementary, Middle & High School and College Level Outreach:</p> <p>Integrate laboratory competencies into curricula</p> <p>Provide a laboratory/health sciences career fair during Medical Lab Week</p> <p>Conduct outreach to high school science teachers & guidance counselors</p> <p>Create shadowing opportunities to raise awareness of laboratory careers</p> <p>Additional College Strategies: Systematize internship opportunities</p> <p>Develop and support inquiry-based research opportunities</p> <p>Professional Development: Create a system for notifying</p> | <p>Enumerate and define competencies of the LPHL workforce</p> <p>Invest in staff development:</p> <ul style="list-style-type: none"> Assure continuing education Develop and support distance learning programs Institute cross training Increase opportunities for field work <p>Assure workplace quality, compensation and flexibility for a diverse workforce through:</p> <ul style="list-style-type: none"> Competitive salaries Defined career trajectories Meaningful performance evaluations <p>Identify & access workforce development resources:</p> <ul style="list-style-type: none"> Share best practices through a LPHL system workforce development task force | <p>Conduct a needs assessment to determine infrastructure needs</p> <p>Stay current on automation and new technology</p> <p>Enhance the use of existing technology</p> <p>Pursue new technology for increased productivity</p> <p>Re-engineer workflow through continuous process improvement</p> |

Research →

| Milwaukee Laboratory Advisory Committee Laboratory System Improvement Program | | | | |
|--|---|--|--|---|
| November 2011 | | | | |
| Strategic Directions | | | | |
| What innovative & substantial actions can we take to enhance <u>research activities</u> within the Local Public Health Laboratory (LPHL) system? | | | | |
| Establish leadership & objectives to facilitate LPHL System research | Develop a network of scientists & infrastructure to support research | Assure sustained funding to empower research | Create mechanisms to train researchers | Communicate LPHL System research to the public |
| <p>Identify a research director and establish a steering committee</p> <p>Develop objectives that targets research that addresses the public's needs (i.e., applied science)</p> <p>Identify and share research agendas among lab organizations</p> <p>Parking Lot Conduct public health research on a global scale with international partners</p> | <p>Identify & network researchers, their expertise and agendas</p> <p>Create a database of research expertise (researchers & infrastructure)</p> <p>Develop mechanisms to share resources</p> <p>Facilitate inter-institutional & interdisciplinary approaches to conduct research</p> <p>Stimulate collaborative research activities through meetings, forums and seminars</p> | <p>Inventory funding sources & expertise</p> <p>Create a mechanism to support collaborative grant proposals</p> <p>Access biotech companies and other private sector partners</p> <p>Identify innovative ways to generate revenue and develop products</p> <p>Conduct pilot projects</p> | <p>Provide training in research to graduate students</p> <p>Provide research opportunities and resources for graduate students</p> | <p>Promote public health research to community, governmental and private sectors</p> <p>Enhance communication tools for sharing research outcomes such</p> <p>Communicate and translate research to the community (e.g., CBPR & Translational Research)</p> |

<http://city.milwaukee.gov/lcip>

LSIP - Home Page



Laboratory System Improvement

Program (L-SIP)

Home

Introduction

Assessment

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Improvement

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Greetings!

Welcome to the City of Milwaukee Health Department's web site dedicated to the [Laboratory System Improvement Program \(L-SIP\)](#) . The purpose of this site is to support our collective efforts to assess the performance of the Local Public Health Laboratory (LPHL) System in Milwaukee. The web site will also fulfill an ongoing role by providing a platform for communication about system improvement efforts that will follow the assessment.

2 - Strategic Directions

What innovative & substantial actions can we take to enhance research activities within the Local Public Health Laboratory (LPHL) system?

What innovative & substantial actions can we take to strengthen workforce capacity within the Local Public Health Laboratory (LPHL) system?

and supporting MHD(L) in becoming an Academic Health Department

STRATEGIC DIRECTION #1:

What innovative & substantial actions can we take to enhance **research** activities within the Local Public Health Laboratory (LPHL) system?

5 GOALS

1. Establish leadership & objectives to facilitate LPHL System research
2. Develop a network of scientists & infrastructure to support research
3. Assure sustained funding to empower research
4. Create mechanisms to train researchers
5. Communicate LPHL System research to the public

Goal #1

Establish leadership & objectives to facilitate LPHL System research
4 - objectives

1.1 Identify a research director and establish a steering committee

1.2 Develop objectives that targets research that addresses the public's needs (i.e., applied science)

1.3 Identify and share research agendas among lab organizations

1.4 Parking Lot: Conduct public health research on a global scale with international partners

Goal #2

Develop a network of scientists & infrastructure to support research
5- objectives

2.1 Identify & network researchers, their expertise and agendas

2.2 Create a database of research expertise (researchers & infrastructure)

2.3 Develop mechanisms to share resources

2.4 Facilitate inter-institutional & interdisciplinary approaches to conduct research

2.5 Stimulate collaborative research activities through meetings, forums and seminars

Goal #3
Assure sustained funding to empower research
5- objectives

3.1 Inventory funding sources & expertise

3.2 Create a mechanism to support collaborative grant proposals

3.3 Access biotech companies and other private sector
partners

3.4 Identify innovative ways to generate revenue and develop products

3.5 Conduct pilot projects

Goal #4

Create mechanisms to train researchers

2- objectives

4.1 Provide training in research to graduate students

4.2 Provide research opportunities and resources for graduate students

Goal #5

Communicate LPHL System research to the public

3- objectives

5.1 Promote public health research to community, governmental and private sectors

5.2 Enhance communication tools for sharing research outcomes

5.3 Communicate and translate research to the community (e.g., CBPR & Translational Research)

STRATEGIC DIRECTION #2:

What innovative & substantial actions can we take to strengthen workforce development within the Local Public Health Laboratory (LPHL) system?

4 GOALS

1. Educate the public and health care professionals on the importance of the LPHL System
2. Attract a motivated & highly skilled workforce
3. Retain an engaged & competent workforce
4. Invest in innovative technology to improve efficiency & capacity

Goal #1

Educate the public and health care professionals
on the importance of the LPHL System

2- **objectives** (1-parking lot)

1.1 Promote LPHL successes through the media and public information officers to communicate how the LPHL system impacts the public's health

1.2 Establish a legislative outreach and advisory committee

Parking Lot:

Capitalize on outbreaks and public health emergencies to highlight the work of the public health laboratory system

Goal #2

Attract a motivated & highly skilled workforce

8 - objectives

Elementary, Middle & High School and College Level Outreach:

2.1 Integrate laboratory competencies into curricula

2.2 Provide a laboratory/health sciences career fair during Medical Lab Week

2.3 Conduct outreach to high school science teachers & guidance counselors

2.4 Create shadowing opportunities to raise awareness of laboratory careers

Goal #2

Attract a motivated & highly skilled workforce

8 - objectives

Additional College Strategies:

2.5 Systematize internship opportunities

2.6 Develop and support inquiry-based research opportunities

Professional Development:

2.7 Create a system for notifying stakeholders about job openings

2.8 Develop mechanisms to support re-entry into workforce
(e.g. second careers)

Goal #3

Retain an engaged & competent workforce

4 - objectives

3.1 Enumerate and define competencies of the LPHL workforce

3.2 Invest in staff development:

- a. Assure continuing education
- b. Develop and support distance learning programs
- c. Institute cross training
- d. Increase opportunities for field work

Goal #3

Retain an engaged & competent workforce

4 - objectives

3.3 Assure workplace quality, compensation and flexibility for a diverse workforce through:

- a. Competitive salaries
- b. Defined career trajectories
- c. Meaningful performance evaluations

Goal #3

Retain an engaged & competent workforce

4 - objectives

3.4 Identify & access workforce development resources :

- a. Share best practices through a LPHL system workforce development task force

- b. Access national association resources
(e.g. APHL, National Society for Experiential Education (NSEE), American Society for Clinical Pathology (ASCP))

Goal #4

Invest in innovative technology to improve efficiency & capacity

5 - objectives

4.1 Conduct a needs assessment to determine infrastructure needs

4.2 Stay current on automation and new technology

4.3 Enhance the use of existing technology

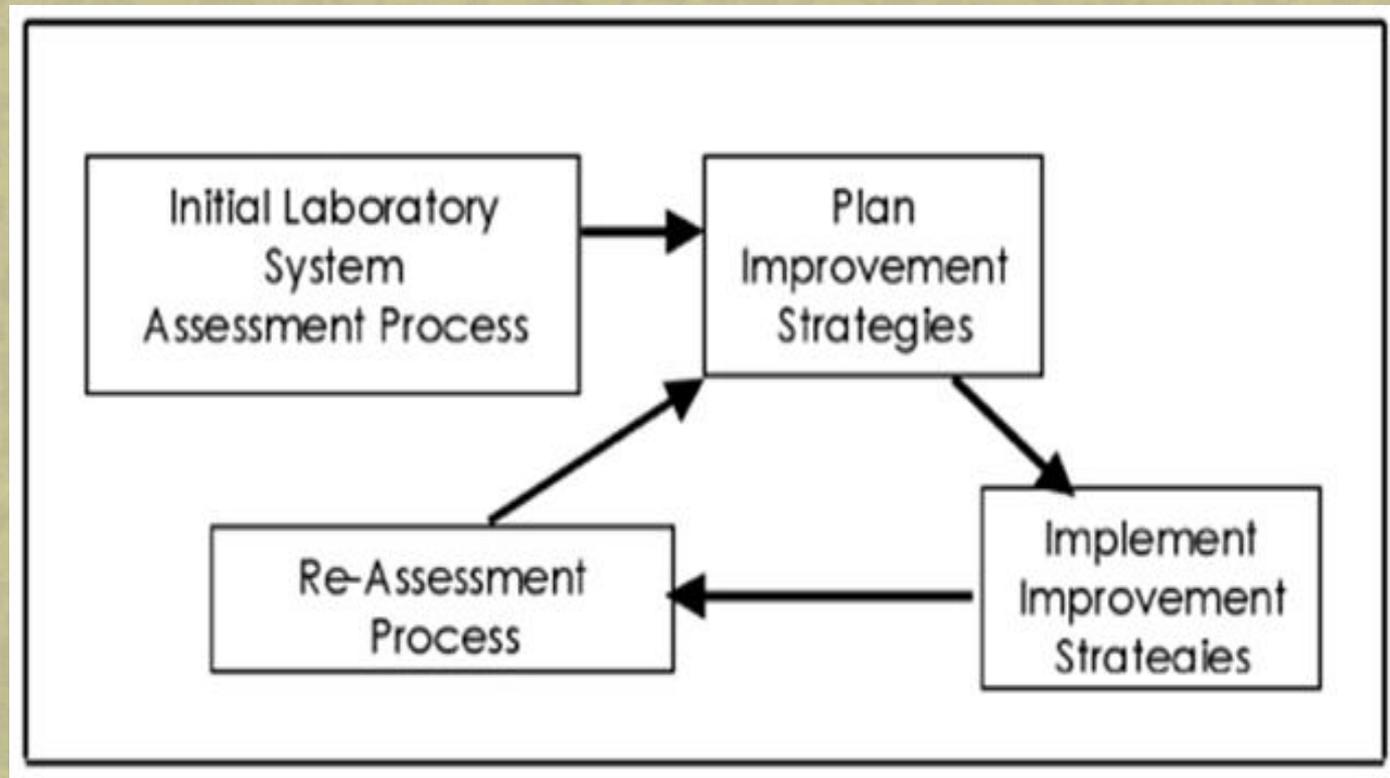
4.4 Pursue new technology for increased productivity

4.5 Re-engineer workflow through continuous process improvement

Long Range Goals

Improve stakeholder performance of the laboratory system supporting public health capacity in the Milwaukee area

Reassess the LPHL System over the next 3-4 years, after improvement efforts are underway.



<http://city.milwaukee.gov/LSIP>



Tom Barrett, Mayor
Bevan K. Baker,
Commissioner of Health
www.milwaukee.gov/health

Steve Gradus, Ph.D.
Laboratory Director

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Milwaukee.gov/healthlab

Date December 14, 2011

Next Steps

- Quarterly meetings
- Community co-chair
- Seeking funding
- Thank you !!
- Website: <http://city.milwaukee.gov/Isip>
- ***Happy Holidays !!***