

Colorado Department of Public Health and Environment Laboratory Services Division

Laboratory System Improvement Program (L-SIP)

EXECUTIVE ASSESSMENT SUMMARY 2013



**Colorado Department
of Public Health
and Environment**



The Colorado Department of Public Health and Environment’s Laboratory Services Division conducted a meeting in March 2013 with various agencies and partners from throughout Colorado to participate in the assessment of the quality of the Colorado Public Health Laboratory System. Participants reviewed laboratory services in 10 essential areas, a national performance scoring standard developed by the Association of Public Health Laboratories (APHL).



The State-Level Public Health Laboratory System consists of more than the state public health laboratory. It includes all public, private and voluntary entities that contribute to the public health laboratory practice in the state. A network of entities with differing roles, missions, relationships, and interactions. Assessment participants included representatives from various agencies, including state and local public health, healthcare organizations, public health safety, private laboratories, academic (researchers and/or educators), first responders, clinical, environmental and regulatory, all of which contribute to the Colorado public health laboratory system.

The Laboratory System Improvement Assessment Program (L-SIP) is a collaborative effort of APHL and Centers for Disease Control and Prevention (CDC). The primary goal of the L-SIP is to target improvement of the public health laboratory system through collaborative work of partners to

assess system performance, plan for system improvements, implement improvement strategies, and periodically evaluate and re-assess the system.

There are four concepts applied in the State Public Health Laboratory System Assessment.

1. Based on the 10 essential public health services and the 11 SPHL core functions;
2. Focuses on the overall state public health laboratory system;
3. Describes an optimal level of performance;
4. Supports a process of improvement.

Public Health Lab Core Functions	
1. Disease prevention, conduct and surveillance	7. Policy development
2. Integrated data management	8. Emergency response
3. Reference and specialized testing	9. Public health-related research
4. Environmental health and protection	10. Training and education
5. Food safety	11. Partnerships and communication
6. Laboratory improvement and regulation	

The Laboratory System Assessment’s intended results are to conduct an assessment of the state public health laboratory system which brings together key partners to determine system performance, measures capacity and performance of the state system in addressing national

The current Colorado Public Health Laboratory System was scored using the Laboratory System Improvement Program Performance Measurement Tool and the 10 Essential Services of Public Health. The following pages provide an overview of the scores for each essential service, a highlight of the discussions, parking lot issues and next steps identified during the meeting.

Scoring Tool/Activity Level:

Rating options consisted of None, Minimal, Moderate, Significant, and Optimal and ranged from 0% to 100% in 25% increments with None signifying 0% or absolutely none of the performance described is met within the public health laboratory system and Optimal signifying greater than 75% of the performance described is met within the public health laboratory system.

Results

Essential Service #1 Monitor Health Status to Identify Community Health Problems

Overview of scores:

Indicator	Activity Level
1.1.1 SPH Lab System identifies infectious disease and environmental sentinel events, monitors trends and participants in state and federal surveillance systems.	Significant
1.1.2 The SPH Lab System monitors congenital, inherited and metabolic diseases of newborns and participates in state and federal surveillance systems.	Optimal
1.1.3 SPH Lab System supports monitoring of chronic disease trends by participating in state and federal surveillance systems.	No vote taken, not enough information available
1.2.1. SPH Lab System has a secure, accountable and integrated information management system for data storage, analysis, retrieval, reporting and exchange.	Moderate
1.2.2. The SPH Lab System partners collaborate to strengthen electronic surveillance systems.	Moderate

Summary:

- Response training: challenges getting needed data.
- Environmental doesn’t have good systems for looking at data that isn’t reportable.
- The Integrated Data Repository (IDR) is located at the main campus; issues with LITS because it isn’t known if information is being captured and send to the IDR.
- Electronic lab reporting is costly and time consuming.

- Bacterial isolate submission is not mandatory for clinical labs; but there is still an excellent submission rate from these lab partners. Surveillance outbreak detection is recognized nationally.
- Gap information shared between Epidemiology and FDA is not trended or tracked on a consistent basis.
- Two main computer systems at the state lab: newborn screening (NBS) and LITS require a lot of IT support. Data reporting directly from the lab is challenging. Recent state centralization of IT services resulted in support that is not as real-time as it could be. Need to find a group that can connect labs, to obtain proper IT resources.
- Colorado was one of the first states to send flu data to CDC and LRNB data.
- NBS screening test data is in HL7 format and goes to the Health Information Exchange. Meaningful use is demonstrated as results are able to be received and sent out using the Colorado Regional Health Information Organization (CORHIO). Data is successfully transferred in the pilot program of sharing NBS results between Boulder County Hospital and CORHIO. Further sharing of information recommended so others can piggy back on that (Health Information Exchanges).
- Recommend giving regular updates on NBS successes.



Parking Lot Issues:

- Follow up to find out if there is a group that collects chronic disease data and if the public laboratory system can help with this essential service.
- Form a work group in order to evaluate whether all data are being captured on the lab test requisition.

Next Steps:

- Improvements in electronic reporting is needed.
- Follow up is needed regarding the Lean Event between Water Quality Control Division and Lab.
- Form a group to ensure key information is captured at the LITS level; when a change is propagated from the LITS to the IDR.

Essential Service #2 Diagnose and Investigate Health Problems and Health Hazards in the Community

Overview of scores:

Indicator	Activity Level
2.1.1 SPH Lab System assures provision of services at the highest level of quality to assist in the detection, diagnosis and investigation of all significant health problems and hazards.	Significant
2.1.2 The SPH Lab System has the necessary system capacity, authority, and preparations in place to rapidly respond to emergencies that affect the public’s health.	Significant

Summary:

- Public Health includes Public Safety and Environmental Health. Laboratory Systems include more than just the public health laboratory.
- Epidemiology works with clinical labs to assign outbreak numbers which makes it easier to submit outbreak samples and courier services are effective in transporting samples to the lab.
- Epidemiology/Animal Control has issues getting animal heads to lab, needs courier options.
- Communication between Epidemiology and the labs is good: open and timely communication.
- There is no system in place to track abnormal Newborn Screenings.
- Very good coordination when FBI sends unknown samples to lab. FBI rates lab as an optimal system based on response time and quality control.
- Excellent cooperation between the CDC and the state lab during overwhelming number of specimens received during the H1N1 outbreak, guidelines were sent to providers on samples and scientists were cross trained to do testing and a temp was hired.

Next Steps:

- Effective communication; marketing brochures of what the lab does, qualifications of staff, test list.

Essential Service #3 Inform, and Empower People About Health Issues

Overview of scores:

Indicator	Activity Level
3.1.1 SPH Lab System creates and delivers consistent information to community partners about relevant health issues associated with laboratory services.	Optimal
3.1.2 The SPH Lab System creates and provides education opportunities to health and non-health community partners.	Significant
3.2.1 The relationship-building opportunities are employed to empower community partners.	Significant

Summary:

- CDPHE NBS informs hospitals of changes, but information doesn't always get to the risk manager. NBS meets quarterly with representation from some of the hospitals.
- Need to consider HIPPA as CLIA regulations change.
- Health Alert Network (HAN) alerts are helpful.
- Encourage participation with NBS Advisory Group
- Courier expansion for NBS partners was a good step.



Parking Lot Issues:

- Health equity and environmental justice
- There are still some groups that are underserved

Next Steps:

- Links to educational tools for Newborn Screening
- Instructions (How To) for packing and shipping
- Maximizing and coordinating events for National Lab Week
- Instructions (How To) for a water test kit and interpretation of water testing lab results

Essential Service #4 Mobilize Community Partnerships to Identify and Solve Health Problems

Overview of scores:

Indicator	Activity Level
4.1.1 Partners in the SPH Lab System develop and maintain relationships to formalize and sustain an effective system.	Significant
4.2.1 SPH Lab System members communicate effectively in regular, timely, and effective ways to support collaboration.	Optimal
4.3.1 SPH Laboratory System works together to share existing resources and to identify new resources to assist in identifying and solving health issues.	Moderate

Summary:

- Define responsibilities by forming a forum that will integrate and formalize rules.
- Very good job with communications, good group of media experts, communications with other labs and partners.
- Good development and maintenance of relationships and sharing of resources.
- The state lab is good at sharing and helping. Lab system works well in this area.
- Identify resources to obtain funds; partnerships could help when applying for grants.

Next Steps:

- More funding from block grants is needed. Recommend exploring other partners who may be able to assist with funding.
- More national awareness would help with funding; possibly leverage APHL's influence.
- Improve external communications.

Essential Service #5 Develop Policies and Plans that Support Individual and Community Health Efforts

Overview of scores:

Indicator	Activity Level
5.1.1 The SPH Lab System obtains input from diverse partners and constituencies to develop new policies and plans and modifies existing ones.	Significant
5.2.1 The SPH Lab System and partners contribute their expertise and resources using science and data to inform and influence policy.	Moderate
5.3.1 The plans and policies that affect the Laboratory System are routinely evaluated, updates and disseminated.	Moderate

Summary:

- Toxicology completed a Lean process improvement event and are converting to electronic files for litigation packets.
- Collaboration between partners (courts, attorneys, lab) protocols are different for various counties, difficult to write a policy everyone can agree upon.
- The ultimate goal with the change in policy is for the district attorney to be able to access system and pull what is needed or to be able to file share with agencies.
- Fee schedules are based on state legislation. Lab is constantly revising policies as issues come up. MOUs, contracts and agreements have individual policies and rules.
- Policy changes are reflected on the lab website.
- Challenges are that there are no repercussions if policies are not followed.
- State guidance standards are not done at the lab. The state lab refers to published methods.

Parking Lot Issues:

- Some agencies outside of metro area may go to outside labs that may not follow policies because of convenience.
- Challenges include guidelines that become too long for agencies to follow.
- Need to improve communication regarding rabies’ submissions; costs, what part of animals to submit and what can be tested
- Need information about courier system for distant rabies submissions.

Next Steps:

- Collaborate with all district attorneys to ask what it is that they are looking for from the Toxicology Lab.
- Survey legal community.
- Meet with a representative from each judicial district.
- Presentation to outlying areas about courier service.
- Utilize technology for statewide training (web-based training for efficiency and effectiveness)
- CDPHE lab should showcase all of its good efforts.
- Figure out a way to disseminate policies, training and other information.

Essential Service #6 Enforce Laws and Regulations that Protect Health and Ensure Safety

Overview of scores:

Indicator	Activity Level
6.1.1 The SPH Laboratory System is actively involved in the review and revision of laws and regulations pertaining to laboratory practice.	Significant
6.1.2 The SPH Laboratory System encourages and promotes compliance by all laboratories in the system with all laws and regulations pertaining to laboratory practice.	Significant
6.2.1 The SPH Laboratory System has the appropriate resources to provide or support enforcement functions for laws and regulations.	Significant

Summary:

- The lab reviews rules and statutes on an annual basis.
- Explanations of some statutes and rules need to be revised to include layman’s terms.
- There is a mechanism in place to address community needs.
- CDPHE holds stakeholder meetings for rulemaking.

Parking Lot Issues:

- Epidemiology rules cover the lab. Authority rests with administrators of the department.
- CDPHE to be an ongoing accessible resource for requirements.

Next Steps:

- To be able to collaborate with all district attorneys to ask what it is that they are looking for from the Toxicology Lab.
- Survey
- Meet with a representative from each judicial district.
- Presentation to outlying areas about courier service.
- Utilize technology for statewide training (web-based training for efficiency and effectiveness)
- CDPHE needs to showcase what it does.
- How to disseminate policies, training and other information.



Essential Service #7 Link People to Needed Personal Health Services and Assure the Provision of Healthcare when Otherwise Unavailable

Overview of scores:

Indicator	Activity Level
7.1.1 The SPH Laboratory System identifies laboratory service needs and collaborates to fill gaps.	Optimal
7.1.2 The SPH Laboratory System provides timely and easily accessed quality services across the jurisdiction.	Optimal

Summary:

- The lab sends a survey with a lab service requests and lab results.
- Courier service is very helpful, a good, adaptive system is in place.
- Lab tours are open and available.
- More outreach needed on where to drop off specimens, what to do and how to do it.
- “How to” collect specimens is needed.

Next Steps:

- Develop guidance for specimen collection and drop off at the lab.
- Assessment of current courier service.

Essential Service #8 Assure a Competent Public Health and Personal Healthcare Workforce

Overview of scores:

Indicator	Activity Level
8.1.1 The SPH Laboratory System is actively involved in the review and revision of laws and regulations pertaining to laboratory practice.	Significant
8.2.1 The SPH Laboratory System encourages and promotes compliance by all laboratories in the system with all laws and regulations pertaining to laboratory practice.	Significant
8.3.1 The SPH Laboratory System has the appropriate resources to provide or support enforcement functions for laws and regulations.	Significant

Summary:

- Ensure staff have core competency; ability to promote people and help new staff understand what additional skills they may need to develop in order to be promoted.
- Three different levels of categories of expertise beyond basic requirements (beginning, intermediate and expert).
- Flexibility retains employees, even when pay increases are light.
- Difficult to retain younger workers because of lack of upward mobility opportunities and pay, losing them to private sector.

- Present more opportunities for participation in professional organizations for professional growth.
- Gratitude to state lab for offering APHL trainings
- Labs are running lean, so lack of time to attend trainings

Next Steps:

- Support science fairs, outreach and collaborate with community partners.
- Share expertise with smaller labs.
- Assess competency; Steps 1-4; 1)Written competency testing; 2)Proficiency testing; 3) Training check list; 4) At six months, then yearly
- Target colleges for internships
- Work with medical schools

Essential Service #9 Evaluate Effectiveness, Accessibility and Quality of Personal and Population-Based Services

Overview of scores:

Indicator	Activity Level
9.1.1 The SPH Laboratory System range of services, as defined by its mission and purpose, is evaluated on a regular basis.	Significant
9.2.1 The effectiveness of the personal and population based laboratory services provided throughout the state is regularly evaluated.	Significant
9.2.2 The availability of personal and population-based laboratory services throughout the state is regularly evaluated.	Significant

Summary:

- Lack of awareness of whole “laboratory system’s” mission and purpose.
- Individual labs have mission statements.
- Instead of one-sided communication, bring issues forward on an ad-hoc basis.
- Meet through various work groups so lab system can be better developed to see what needs are.
- Private labs are a big, key player in the laboratory system.
- Critical services need to be provided.
- Don’t want funding to be channeled to other states.

Next Steps:

- Form a forum or work groups to share communications in terms of testing providing, especially with funding issues.
- Get all partners who are not currently participating, especially the big, private labs involved, so we can know what the concerns are. Address concerns, create surveys.

Essential Service #10 Research for Insights and Innovative Solutions to Health Problems

Overview of scores:

Indicator	Activity Level
10.1.1 The SPH Laboratory System has adequate capacity to plan research and innovation activities.	Moderate
10.2.1 The SPH Laboratory System promotes research and innovative solutions.	Moderate

Summary:

- CDPHE lab primarily participates in studies, rather than research.
- State lab rapidly added a test during a *Legionella* outbreak in Durango, and the test is not on the standard test list.
- Children’s Hospital and NBS collaborate on tracking true positives in Newborn Screening.

Parking Lot Issues:

- On the state newborn screening level, an issue is that Children’s doesn’t hold its blood spots long enough to help centers develop new Newborn Screening studies.
- Parental consent is needed in order to utilize old blood spots for research.
- CDPHE does not have funding for true research. How can lab contribute information that is not currently provided to help a research study?
- Because of funding, the lab has to keep on target with seeking out grants.
- When new strains are announced, CDPHE may be able to purchase necessary kits to test prior to when samples start arriving.
- Information CDPHE gives back to clinical labs is valuable.

Next Steps:

- Clinical labs need to let CDPHE lab know what tests should be added to test list.
- Develop a procedure at CDPHE to clearly show external labs who to contact for recommending and evaluating research projects.
- Utilize existing or new technology.



Colorado Laboratory System Improvement Plan

Essential Service #1: Monitor Health Status to Identify Community Health Problems

1. Work with state Office of Information Technology (OIT) to implement electronic reporting using current LIMS.
Timeline: Implement electronic reporting by July 1, 2014.
2. Schedule meeting with personnel from the Water Quality Control Division (WQCD) and the laboratory that participated in the LEAN event. Document progress and issues identified during the LEAN process that still need to be addressed.
Timeline: Resolve data issues between WQCD and LSD by January 1, 2014.
3. Schedule meeting with OIT and LSD staff to develop standard communication chain between LSD and partners within other divisions to ensure that key information is captured in the LIMS and can be pulled from the IDR.
Timeline: Standard procedure developed by January 1, 2014.

Essential Service #2: Diagnose and Investigate Health Problems and Health Hazards in the Community

1. Update and maintain data within the web-based LSD compendium providing test list, testing information, etc.
Timeline: Identify key staff to monitor and ensure maintenance of the compendium by July 1, 2013.
2. Review current agreements/contracts with partners for emergency testing and develop standard agreement/contract format to simplify the process.
Timeline: Standard agreement/contract format developed and approved by January 1, 2014.

Essential Service #3: Inform and empower people about health issues

1. Update and maintain instructions for packing and shipping of specimens to LSD for testing (include test results interpretations, etc.).
Timeline: Identify key staff to monitor and ensure maintenance of the packing and shipping instructions and have updated instructions available for all testing by October 1, 2013.
2. Identify key staff to plan and coordinate events for National Lab Week and schedule planning meetings.
Timeline: Schedule planning meetings beginning January 1, 2014.

Essential Service #5: Develop policies and plans that support individual and community health efforts

1. Assess current courier service and develop and distribute updated information about the courier service and its routes etc.
Timeline: Distribute updated courier service information by November 1, 2013.
2. Revitalize a monthly laboratory communication to be distributed to all stakeholders highlighting activities at the laboratory.
Timeline: Identify key participants and develop template and distribution schedule by August 1, 2013.

Colorado Laboratory System Improvement Plan

Essential Service #6: Develop policies and plans that support individual and community health efforts

Covered under #5 above.

Essential Service #7: Link people to needed personal health services and assure the provision of healthcare when otherwise unavailable.

Covered under #3 and #5 above.

Essential Service #8: Assure a competent public health and personal healthcare workforce

1. Participate in departmental activities to develop standard recruitment processes with the school of Public Health and other schools and professional societies.
2. Continue to participate in lecture series and other activities with scientific programs within the community.

Essential Service #10: Research for insights and innovative solutions to health problems.

1. Develop and distribute an annual survey to stakeholders to identify testing needs not currently available at LSD.

Timeline: Distribute survey by January 1, 2014.