This document describes the results of the reassessment of the Montana Public Health Laboratory System, including strengths, challenges, and suggestions for improvement.

Montana Public Health Laboratory System Reassessment

A Summary Report

May 13, 2015

Overview

On May 13th, 2015 a meeting of laboratory partners was held to perform a State Public Health Laboratory System Performance (L-SIP) Reassessment. This reassessment was a follow up to the original Public Health Laboratory assessment that was performed in 2008. As a result of the 2008 assessment, several gaps were identified and steps for action recommended. One of the key components in this action plan was the development of the Montana Laboratory Forum. This forum is a voluntary network established to facilitate inter-laboratory system communication, collaboration and cooperation. In addition to providing a laboratory network essential for statewide preparedness and response, the Montana Laboratory Forum has been integral in addressing system improvement as identified in the original assessment.

The dialogue generated during the reassessment provided a means to measure our successes, highlight areas of progress and identify places where improvements still need to be made. The results of the reassessment will also tell us how we compare to the laboratory system "gold standards." Approximately 40 partners representing various parts of the Montana public health laboratory system attended the event. These partners represented clinical laboratories, environmental laboratories, state veterinary and agriculture laboratories, laboratory information technology specialists, physicians, clinical service providers, researchers, regulators, infection preventionists, and local and state health department officials, epidemiologists, public health nurses, and emergency preparedness staff.

A public health emergency scenario of a contaminated water supply was used as a means for the participants to introduce themselves. The scenario situation was the following: *Local drug stores and pharmacies notice a significant increase in the sale of anti-diarrheal medications. Citizens of all ages are seeking medical care with symptoms of abdominal cramping, severe diarrhea, and progressive fatigue. Those with private water sources do not report any health issues.* Each participant introduced themselves, and then said what their role would be in the response to this situation.

Karen Breckenridge, Director of Quality Systems at the Association of Public Health Laboratories (APHL), provided an orientation to the laboratory system assessment process and the facilitated the evaluation and voting for Essential Service #2 (Diagnose and Investigate Health Problems) with the entire group. After the plenary, participants were divided into three breakout groups and each were assigned three of the remaining nine essential services to evaluate during the course of the day. Each breakout group had a skilled facilitator knowledgeable in public health, but not a current member of the Forum. In addition to Karen Breckenridge, Julie Benson-Rosston and Anne Weber were facilitators. All were familiar with the process, as Julie had facilitated the 2008 L-SIP assessment, and Anne Weber was the Laboratory Director of the MT Public Health Laboratory (MTPHL) at the time of the previous assessment.

Each breakout session was assigned a theme taker: Angela Dusko, Crystal Fortune and Donna Jo Larson all work in the MTPHL Laboratory Systems Improvement section. Theme takers were charged with capturing the key points of each discussion group, recording the voting, and helping with the drafting of the summary report.

At the end of the assessment day, the participants gathered together for the closing plenary session where the overall scores for each of the Essential Services were revealed. Rather than discuss and compare results to the 2008 assessment during this plenary session, it was decided to hold an in-person meeting of the Montana Laboratory Forum in the summer, possibly July or August. At that meeting, participants will review the dialogue from the reassessment, compare and analyze the scores from 2008 to 2015, and develop a plan for next steps. It is anticipated that quality improvement initiatives will be prioritized, and opportunities for networking, coordination, cooperation and collaboration will be outlined, to better deliver the ten essential public health services, as it pertains to laboratory services, to the people of Montana.

Summary and Results

Essential Service #1: Monitor health status to identify community health problems

2015 Overall Score: 41.3 (Moderate Activity) 2008 Overall Score: 51.2

***Key idea 1.1.1:* The state public health laboratory system identifies infectious disease and environmental sentinel events, monitors trends, and participates in state and federal surveillance systems.**

Rating: 4 (Optimal)

Strengths: A good reportable system exists with multiple methods of collecting data. While progress has been slow, system partners feel we have done a good job.

Challenges: None noted.

***Key idea 1.1.2:* The state public health laboratory system monitors congenital, inherited and metabolic diseases of newborns and participates in state and federal surveillance systems.**

Rating: 4 (Optimal)

Strengths: Improvements have been made in abnormal referrals to medical consultants. The laboratory system always keeps current with federal recommendations.

Challenges: There is no formal mechanism in place for considering new testing.

Key idea 1.1.3: ***The state public health laboratory system supports the monitoring of chronic disease trends by participating in state and federal systems.***

Rating: 2 (Moderate)

Strengths: Cancer surveillance information is captured best.

Challenges: We could do more to handle chronic disease reporting and provide data for monitoring disease trends.

Suggestions: NAPA is one way of collecting information on nutritional and physical status of the community.

Key idea 1.2.1: ***The state public health laboratory system has secure, accountable and integrated information***

Rating: 1 (Minimal)

Strength: Places that have IT systems which support prompt reporting and real-time exchange is great (as long as they are using them). Security is regulated on all new hardware systems and two-way information exchange is a future endeavor.

Challenges: The centralized health information exchange system (Health Share MT) has lost its support and is no longer a viable option.

Key idea 1.2.2: ***The state public health laboratory system partners collaborate to strengthen electronic surveillance systems.***

Rating: 1 (Minimal)

Strengths: The water reporting system is linked successfully to the regulating bureau. There is a possibility of coordinating data systems of rural communities with their closest "hub". The partners could potentially strengthen and evaluate the electronic surveillance systems (MIDIS for reportable conditions and DEQ for drinking water violations) if the data provided is effective in monitoring health status.

Challenges: Resources are limited for updates to hardware and software.

Suggestions: There is potential to share local data systems as "meaningful use" does not work with every system.

Essential Service #2: Diagnose and investigate health problems and health hazards in the community

2015 Overall Score: 83.5 (Optimal Activity) 2008 Overall Score: 78.0

Key idea 2.1.1: ***The state public health laboratory system assures the effective provision of service at the highest quality to assist in the detection, diagnosis and investigation of all significant health problems and hazards.***

Rating: 4 (Optimal)

Strengths: Many laboratories in the state, especially the more rural areas, share services and resources very successfully. System partners do have faith that if a problem were to arise, they could rely on each other for help. MTPHL maintains a database of clinical laboratory capacities in regards to bio-preparedness and the courier system has been a plus. There are also agreements in place with neighboring states to accommodate for surge testing if needed to respond to public health emergencies.

Challenges: One Health Initiative coordination needs improvement. There are gaps in communication between the MTPHL and practitioners and would be an opportunity for improvement. Having only one BSL-3 laboratory (outside of Rocky Mountain Laboratories and Universities) may overwhelm the system. It was felt that biosafety in all laboratories is an area for improvement, along with sharing of surveillance data more readily with the Forum and the system as a whole.

Suggestions: An exercise or drill to capture matrices and collect actual data in bringing together animal, environmental, clinical and public health aspects of the system might be helpful to determine how well the state system is performing.

***Key ideas 2.1.2:* The state public health laboratory system has the necessary capacity, authority, and preparations in place to rapidly respond to emergencies that affect the public's health.**

Rating: 3 (Significant)

Strengths: DPHHS holds regional preparedness meetings, and MTPHL contributes to these meetings. The recent Ebola drill conducted in two jurisdictions was very successful in identifying gaps in the response system. The LPX survey is very helpful as is the Bioterrorism workshop and training provided by MTPHL. HAN messages and weekly CDEpi Updates provide communication about current threats/emergencies.

Challenges: The system has very limited capacity to test for radiological threats, which can affect timeliness in making decisions. Improved communication and better planning is key, but hard to do with limited resources and funding.

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

2015 Overall Score: 50.0 (Moderate activity) 2008 Overall Score: 67.0

***Key idea 3.1.1:* The state public health laboratory system delivers consistent information to community partners about relevant health issues associated with laboratory services.**

Rating: 3 (Significant)

Strengths: The stakeholders feel that the public health laboratory system communicates well especially after performing drills and in educating the Infectious disease physicians. It is also felt that the Environmental Tier notification system is working well. The Department of Environmental Quality and the Department of Agriculture also aid in format design when

writing Public Water Reports and the processes needed when contaminants are found in feed at the Agricultural Laboratory.

Challenges: In regards to Emergency Response, staff turn-over and timely training of new staff needs to be addressed. There can be inconsistencies between state and local advisory alerts. The Ebola drill pointed out that there are still reporting gaps.

Suggestions: There needs to be more consistency between state and local advisory alerts.

Key idea 3.1.2: ***The state public health laboratory system creates and provides educational opportunities to health and non-health community partners.***

Rating: 2 (Moderate)

Strengths: Using data generated from statewide laboratory testing, epidemiology infographics provide good visuals and helpful information in the CDEpi Weekly Update electronic newsletter; the infographics are helpful and used during different workshops.

Challenges: It is felt that the public does not understand the regulations and rules that laboratories are required to follow. The pieces are in place for educational opportunities, but these are not always being used effectively.

Suggestions: It was suggested that the laboratory system engage the services of a Public Information Officer.

Essential Service #4: Mobilize community partnerships and solve health problems

2015 Overall Score: 55.3 (Significant Activity) 2008 Overall Score: 61.3

Key idea 4.1.1: ***Partners in the state public health laboratory system develop and maintain relationships to formalize and sustain an effective system.***

Rating: 4 (Optimal)

Strengths: The Montana Laboratory Forum meets at least annually in-person to discuss issues and has a good roster of diverse partners. A defined mission statement has been created, but could be better distributed to the group.

Challenges: Each partner needs to better understand their role in the public health laboratory system. There is also a need for a better definition of the partnerships required to deliver essential services.

Suggestions: Need to try and include more partners from smaller organizations, tribal communities, legislators and lobbyist groups.

Key idea 4.2.1: ***State public health laboratory system partners communicate effectively in regular, timely and effective ways to support collaboration.***

Rating: 2 (Moderate)

Strengths: The Montana Laboratory Forum has a listserv for member communication. Regular in-person meetings provide some contact amongst the group. System partners especially appreciated the epidemiology e-newsletter and the Laboratory Sentinel that are regularly published and circulated to clinical laboratories and other system partners.

Challenges: Need to find better ways to market the Forum and present issues to members in a more timely fashion. Need to engage the public more. Availability of staff to attend routine meetings is an issue, many have to use personal time to attend out-of-town meetings and it can cause stress on the work force.

Suggestions: Engage the public with an updated website, Facebook page or other social media outlets.

***Key idea 4.3.1:* The state public health laboratory system works together to share existing resources and to identify new resources to assist in identifying and mitigating health issues.**

Rating: 2 (Moderate)

Strengths: MTPHL is a good resource for testing requirements and epidemiology information.

Challenges: Finding new ways to involve more people with the Forum activities.

Suggestions; It would be helpful to devise a way to share information between facilities about inventory and testing capabilities when back orders occur, or when there are surges in testing. Having a list of vendors on the list serve would be helpful for the forum members.

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

2015 Overall Score: 55.7 (Significant Activity) 2008 Overall Score: 39.7

***Key idea 5.1.1:* The state public health laboratory system obtains input from diverse partners and constituencies to develop new policies and plans and to modify existing ones.**

Rating: 3 (Significant)

Strengths: Local public health jurisdictions and counties use community assessment data, some of which is provided by the state public health laboratory. Rules for reportable conditions are heard by the public and have a comment period before they become official. These rules then determine policies to later determine the reportable conditions.

Challenges: Policies are not always vetted through the laboratory system prior to enactment.
Suggestions: Community assessment data could be evaluated to determine the laboratories specific role.

***Key idea 5.2.1:* The state public health laboratory system and partners contribute their expertise and resources using science and data to inform and influence policy.**

Rating: 3 (Significant)

Strengths: The laboratory system provides data that influences plans and policies. For example, the legislators will often ask for data to support certain requests. The forum is willing to share information with each other across organizational boundaries.

Challenges: None noted.

Suggestions: The laboratory system should continue to improve communication within itself and outside entities.

Key idea 5.3.1: ***The plans and policies that affect the state public health laboratory system are routinely evaluated, updated and disseminated.***

Rating: 2 (Moderate)

Strengths: The State of Montana and DPHHS is required to review rules every two years and any changes made in rules, policies, etc. are communicated to partners via email and a newsletter. The Public Health Accreditation Board dictates communication.

Challenges: System partners felt there is a gap in communication and there is currently no way of knowing if policies have been updated. There is a continued need to improve communication and identifying better methods of communicating updates to partners.

Essential Service #6: Advocate for laws and regulations that protect health and ensure safety

2015 Overall Score: 83.5 (Optimal Activity) 2008 Overall Score: 36.0

Key idea 6.1.1: ***The state public health laboratory system is actively involved in the review and revision of laws and regulations pertaining to laboratory practices.***

Rating: 3 (Significant)

Strengths: There is an ongoing process of reviewing administrative rules that impact the laboratory and its partners. The system partners understand that best practice guidelines are derived from federal and national standards. The laboratory system partners provide input and expert recommendations regarding proposed regulations. Many times partners are called upon to help evaluate the appropriateness of laws and regulations and can speak in favor or against them during legislation.

Challenges: Laboratories are often not approached until after rules are changed, and this could affect laboratory practice without laboratory input.

Key idea 6.1.2: ***The state public health laboratory system encourages and promotes compliance by all laboratories in the system with all laws and regulations pertaining to laboratory practice.***

Rating: 4 (Optimal)

Strengths: Packaging and shipping training is now being provided to partners every two years so that shipping regulations are met. MTPHL participates in compliance programs through CLIA and EPA inspections. MT DPHHS employs a CLIA laboratory surveyor whose job is to make sure

all clinical laboratories that provide patient testing in the state are in compliance. The state veterinary laboratory provides animal rabies and brucellosis testing and is also inspected and accredited.

Challenges: None noted.

Suggestions: Share proposed regulations or legislation that could affect the public health laboratory system via the list serve or website, so that all stakeholders could share their ideas, input, opinions, and suggestions.

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

2015 Overall Score: 50.0 (Moderate Activity) 2008 Overall Score: 67.0

***Key idea 7.1.1:* The state public health laboratory system identifies laboratory service needs and collaborates to fill gaps.**

Rating: 2 (Moderate)

Strengths: Assessments of availability of services has occurred. Partners know who to turn to when something unusual happens.

Challenges: Transport of specimens in this large geographic area is challenging, and courier service is a very important issue to address in regards to specimen receipt and timely testing.

Suggestions: System partners felt it would be helpful to collaborate on deciding what the future capacity needs will be and how to address them.

***Key idea 7.1.2:* The state public health laboratory system provides timely and easily accessed quality services across the jurisdiction.**

Rating: 3 (Significant)

Strengths: The MTPHL online laboratory testing manual is available for everyone to view.

Challenges: Food testing is limited and stake holders are unsure of the demand for this test and what resources are available. Access to laboratory services for rural areas may not be as timely as would be liked, as testing may be referred to outside reference laboratories or to their nearest "hub" hospital laboratory. Timely transport is a challenge, especially for environmental samples.

Suggestions: DEQ would like to see a narrative along with the spiked environmental QC results to help interpret data.

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

2015 Overall Score: 50 (Moderate Activity) 2008 Overall Score: 50.0

Key idea 8.2.1: *The state public health laboratory system maintains an environment to attract and retain highly qualified staff.*

Rating: 2 (Moderate)

Strengths: MTPHL regularly hosts students from the Montana University System Medical Laboratory Science program as part of their clinical laboratory training. System partners noted that they are always trying to promote the profession and emphasize the positives about working in the laboratory field. DEQ offers college courses for free to employees in exchange for a work time commitments of two years.

Challenges: When compared to other organizations, system partners felt that little is being done in terms of work-related advanced educational programs specifically geared for the laboratorian.

Suggestions: Develop a consolidated job database or post jobs on the Forum website to promote public health system laboratory positions in MT. It would be great to collaborate and have an open dialogue with other states to find out how they do things. Other organizations offer college courses and education opportunities in exchange for work time commitments. Along with student loan repayment programs, this could be a great retention and recruitment tool.

Key idea 8.3.1: ***The state public health laboratory system works to assure a competent workforce by encouraging and supporting staff development through training, education and mentoring.***

Rating: 2 (Moderate)

Strengths: MT DPHHS is participating in a public health leadership class available through the University of Washington that is open to employees including public health laboratory staff. The MTPHL offers several continuing education opportunities for staff throughout the year. DEQ is currently trialing a step system or milestone system to offer employees who may not meet all qualifications of the job upon hire. This allows for on-the-job training and incentive for advancement once milestones are accomplished.

Challenges: Currently there are no standardized set of positions descriptions or career ladders available for the system. System partners felt there is limited training and outside education opportunities in the system, or ways to promote staff. There is also severe need for newer skills in the laboratory such as informatics and advanced molecular detection.

Suggestions: Sharing of recruitment tools, ideas, and ways of retaining qualified staff was highly suggested to keep employees engaged and interested in their positions. It is important not only to recruit highly qualified employees but also to make sure and keep the current trained employees as well.

Key idea 8.3.2: ***The state public health laboratory system identifies and addresses current and future workforce shortage issues.***

Rating: 2 (Moderate)

Strengths: System partners feel that they do try to promote the field whenever possible. They also felt that advocating for expansion of capacity for colleges in educating and training laboratory professions is a great idea, but beyond the scope of the Forum.

Challenges: Everyone is aware of the huge shortage of medical laboratory professionals but it is not clear how to fix the problem. Current clinical laboratory employers do not have a lot of succession planning in place, and few positions have room for advancement. While it is good to share stories and information, people do not feel empowered in their current positions and are unsure how to change this culture.

Suggestions: System laboratory partners should continue to advocate for their attendance and active involvement in meetings such as the Forum to keep abreast of what is going on in the state. Everyone should get involved with a professional society and continue to stress the importance of succession planning in the workplace.

Essential Service #9: Evaluate effectiveness, accessibility, and quality of personal and population-based services

2015 Overall Score: 28.5 (Moderate Activity) 2008 Overall Score: 5.0

Key idea 9.1.1: The state public health laboratory system range of service, as defined by its mission and purpose, is evaluated on a regular basis

Rating: 2 (Moderate)

Strengths: The results of this reassessment will be the most recent evaluation of the system, when compared to the original L-SIP assessment. The Montana Laboratory Forum has a mission and objectives. The group is working to improve the laboratory system and have determined the most important key essential services to work on. The Forum meeting in 2014 produced measurable goals. Surveys have been done by MTPHL to determine clinical laboratories' capabilities and reporting of conditions of public health significance. Labs certified (according to 40 CFR methods) for environmental drinking water testing are posted on the state website, along with their capabilities.

Challenges: Although the Forum has a mission and objectives, methodology is not in place. The existing list serve and website are not well maintained. In addition to assessing the system it needs to be challenged.

Suggestions: Need to provide a descriptive evaluation of the Forum and the system on the website. A drill to challenge the system would provide at least subjective data for evaluation. Sharing clinical laboratory capability survey results on the MLF website would be very beneficial.

Key idea 9.2.2: The availability of the personal and population-based laboratory services provided throughout the state is regularly evaluated.

Rating: 1 (Minimal)

Strengths: There needs to be one entity that leads the system, and MTPHL has taken on this role.

Challenges: System partners feel there is no process for evaluation of what services are available, or the capacity of the system, and this evaluation is a needed step before determining physician need and test utilization. There are no current standardized methods for a baseline collection of environmental, chemical, and clinical testing services and capacity.

Suggestions: Develop a method (survey?) for determining services and capacity of the system, and maintain a database that would be updated regularly. Need to determine how this information would be shared with stakeholders. LOINC codes could be used to standardize methods among clinical laboratories.

Key idea 9.2.3: The quality of the personal and population-based laboratory services provided throughout the state is regularly evaluated.

Rating: 3 (Significant)

Strengths: Quality is the bread and butter of laboratories. Laboratories have to be accredited, and this ensures that they meet standards and are producing quality results.

Challenges: Although opportunities for improvement have been identified, there has been little follow through.

Suggestions: Opportunities for improvement should be prioritized as to importance (immediate, high, medium, low) and a contact person designated to spearhead the project.

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

2015 Overall Score: 19 (Minimal Activity) 2008 Overall Score: 4.2

Key idea 10.1.1: The state public health laboratory system has adequate capacity to plan research and innovation activities.

Rating: 2 (Moderate)

Strengths: There is good collaboration between research system partners and the MTPHL. The state public health laboratory, epidemiology section and other MT DPHHS Public Health and Safety Division (PHSD) sections currently reach out to Carrol College for project collaboration. There is an institutional review board process in place to protect human research subjects. MT DPHHS PHSD Bureau Chiefs have a process for recommending and evaluating research projects involving staff.

Challenges: The system partners do not always publish research findings. Identifying potential research projects is problematic.

Suggestions: Engage academia, since Master's level students need to perform research projects, and may come with small pockets of funding. Develop a program that would generate a list potential research projects and match them with students looking for projects. Work

more closely with professional organizations (APIC, ID Doc Network, MNA, MHA, Residency programs) and vendors (including EMR vendors for data mining) to identify collaborative opportunities, and possible funding. Need to encourage the publication of applied research. The Forum could work with the Northern Plains Consortium Emerging Leaders Program on a leadership project researching availability of tests and usefulness to the public health laboratory system. The Forum should link with the person in charge of research at the Office of the Commissioner of Higher Education.

Key idea 10.2.1: ***The state public health laboratory system promotes research and innovative solutions.***

Rating: 1 (Minimal)

Strengths: Research projects do not have to be large to be effective.

Challenges: The system struggles with being able to address all ten essential services, and research is not given high priority compared to other essential services.

Suggestions: A newsletter should be developed to share research and innovation projects and findings. Continue to work with the Forum and MT DPHHS strategic plan. Investigate whether there could be research around the One Health Initiative.

Evaluation

An electronic evaluation was sent to the participants to assess their satisfaction with the reassessment meeting.

Over 85% of the respondents stated that the dialog was useful and that they supported the efforts being made. Approximately half of the respondents did not feel that they received advance materials in time for review prior to the meeting, although 70% felt the advance materials were useful. Over 90% of the respondents were satisfied with the flow of the meeting, to include effective facilitation, and having the right people at the meeting. Almost all the respondents felt this process and meeting was a good use of their time.

Some free text comments included:

- Definitely was energized and moved to do my part in improving the Montana Public Health Laboratory System.
- Extremely well thought out with key people being part of the process for improvement.
- I felt the participation of the group was wonderful and people stayed on subject keeping the topics flowing in a timely manner.

- Breaking into workgroups to tackle all 10 service areas- I thought that worked great. It also seemed to be "strategically selected" groups- our group had a diverse mix, and I am assuming the others were similar, so that each group had perspectives from private, healthcare, local and state govt.
- So many things worked great at this meeting. It was organized, well attended, thought provoking, and very useful. The facilitators were helpful, the agenda was efficient and well thought out, and participation was high.
- Representation of smaller communities/tribal would be a big benefit. Identification of direct action items and work group formation might continue momentum generated by the meeting.

Next Steps

Assessing the ten essential public health services using the APHL Assessment Tool for State Public Health Laboratory Systems allowed stakeholders in the system to identify relative strengths and weaknesses compared to the gold standard or ideal system. The discussion of key ideas and voting on the level of performance for each key idea shed light on the areas of high performance and those most in need of improvement. When compared to the scores from 2008, Essential Services (ES) #2, 5, 6, 9, and 10 had an overall score higher than the original assessment, ES #1, 3, 4 and 7 had an overall score lower, and ES #8 remained the same. Areas of highest (optimal or significant) performance were ES #2, #4, #5, and #6, and are seen as system strengths. The lowest performing Essential Service was #10, Research, which is not surprising because with limited staff and limited resources, the Montana Laboratory Forum opted in previous years not to put efforts toward improving this Essential Service.

The reassessment included participants that would not normally be an active participant in the Montana Laboratory Forum improvement activities. The next steps for this reassessment process will be to hold an in-person Montana Laboratory Forum meeting in July or August 2015 to analyze the reassessment findings, compare them to the original assessment done in 2008, and develop an action plan with priorities for continuing to move the public health laboratory system forward through improvement activities.