Saint Louis Local Public Health System Assessment

November 2017

Prepared by the Illinois Public Health Institute

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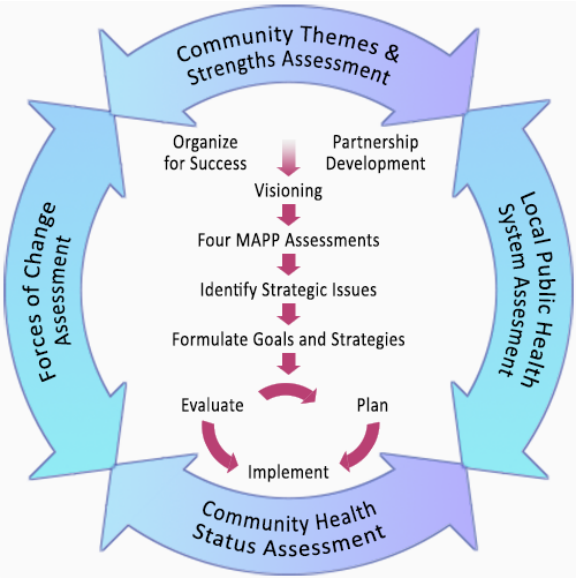
Introduction

The St. Louis Local Public Health System Assessment (LPHSA) was conducted on May 22, 2017 as one of the four assessments in the Mobilizing for Action through Planning and Partnerships (MAPP) process. MAPP is a community-driven strategic planning framework that guides communities in developing and implementing efforts around the prioritization of public health issues and identification of resources to address them as defined by the 10 Essential Public Health Services. The MAPP process includes four assessment tools, including the Local Public Health System Assessment.



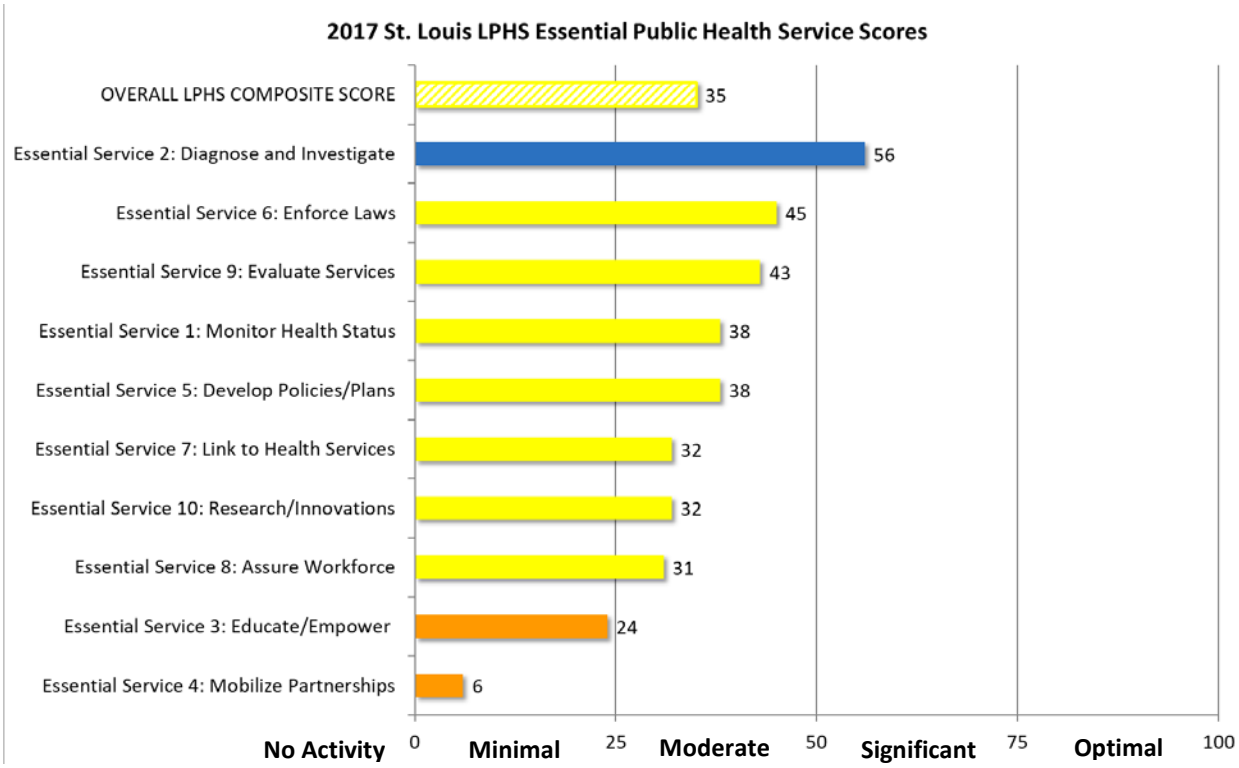
The **Local Public Health System (LPHS)** is defined as the collective efforts of public, private, and voluntary entities, as well as individuals and informal associations that contribute to the public's health within a jurisdiction.

Source: NPHPS

The LPHSA, described in detail in the following section, is used to understand the overall strengths and weaknesses of the local public health system based on the 10 Essential Public Health Services. Results from the LPHSA will be analyzed with the reports from the other three assessments in the MAPP process, which include the Community Health Status Assessment (CHSA), Community Themes and Strengths Assessment (CTSA), and the Forces of Change Assessment (FOCA). Strategic analysis of these assessment results will inform the identification of prevailing issues impacting the health of St. Louis. Issues will be strategically prioritized with consideration of a variety of factors, including the current progress and action on the priorities identified from the last assessment and planning cycle. Goals and action plans will be developed or updated for each of these priority health issues. These action plans will be implemented and aligned to improve the local public health system and ultimately the health and wellbeing of the St. Louis community.

Executive Summary: Cross-Cutting Themes from the St. Louis Local Public Health System Assessment

The average scores by Essential Public Health Service (EPHS) from the May 22, 2017 St. Louis LPHSA are pictured below. The highest score was EPHS 2, Diagnose and investigate health problems and health hazards in the community. The lowest score was EPHS 4 – Mobilize community partnerships to identify and solve health problems. The overall system performance composite score was 35 (moderate).[1]



Throughout the discussions regarding how well St. Louis addresses the 10 Essential Public Health Services, a number of cross-cutting themes emerged in the dialogue across groups. The themes arose as strategic areas to address for improved functioning, capacity, and effectiveness of the local public health system (LPHS) in St. Louis. These themes are detailed on pages 7 through 9.

[1] The Health Equity Measures were not incorporated into the 2017 EPHS composite scores. Please see page 19 for further explanation.

Assessments and Data Collection

LPHS organizations conduct many assessments. As Community Health Assessments (CHAs) are a required activity for governmental public health department accreditation and Community Health Needs Assessments (CHNAs) are required for non-profit hospitals under the Affordable Care Act (ACA), more people are participating in the process, gaining expertise, and making the process and data more meaningful. Unfortunately, the required timelines differ with health departments being on a 5-year timeline and hospitals on a 3-year timeline. This creates a challenge for coordinating assessments. The LPHS lacks a system-wide assessment of the public health workforce. LPHS partners collect a great deal of data for data-driven decision making. However, even with an abundance of data the LPHS is not seeing the level of desired improvement over time. Furthermore, the data lack disaggregation beyond a few variables such as age and race, which can inhibit the ability to assess smaller populations that may experience health disparities. Opportunities for improvement include: coordinating LPHS assessments; connecting “boots on the ground” to data; improving the stratification of data and the linkage of traditional health indicators to social determinants data; conducting a system-wide workforce assessment; and creating a community resource dashboard to compile data and research findings from the community.

Community Engagement and Communication

LPHS partners engage community members and stakeholders, and regularly gather input from community members. Community partnerships between research and practice are strong. Risk communication and emergency preparedness communication is well coordinated at the organizational level, though the information does not filter down to the small community organizations and residents as well as it could. Constituency development is somewhat weak and largely based on “who you know” as opposed to cultivating new relationships; the LPHS lacks a comprehensive list of community partners and thus key people are left out of decision-making. Furthermore, inclusion of marginalized populations is often a one-time event rather than a systematic process. Opportunities for improvement include: engaging community

members outside of the public health sector; creating reports tailored to different audiences; being more inclusive and accessible when engaging constituents; and giving community members more authentic voice in decision-making.

Partnership and Collaboration

LPHS organizations partner and collaborate in many ways, including data collection and sharing, health promotion and education, policy development, service provision, and research. The increased city and county collaboration is notable and there is momentum for increased collaboration across sectors outside of what is considered traditional public health. While these developments are promising, the LPHS remains highly fragmented and siloed, resulting in a great deal of duplicative work. An area of weakness is partnering and collaboration in implementation of shared solutions. Areas of opportunity include: expanding the role of smaller LPHS organizations and community members in a variety of EPHSs; incentivize collaboration in grants; increasing joint publications between academic and public health practice; and promotion of the public health system to the business and innovation community.

Action and Accountability

As described above, the LPHS conducts many assessments, but the data are not translated into action. Likewise, a weakness for partnership and collaboration is moving from individual to collective action and implementation. Areas of opportunity include: scaling projects to pilot at the community level; maintaining the ThinkHealthSTL dashboard to improve accountability; improving integration of plans that already exist and harmonizing plans with funders; and better employing professional knowledge and expertise to drive action and accountability.

System-wide Workforce Development

The LPHS has knowledgeable public health staff, good leadership, and high potential for the existing talent in the region. The LPHS lacks workforce capacity in several areas, such as service provision (particularly behavioral health) and emergency preparedness. Other areas of weakness include lack of diversity and difficulty with recruitment and retention. Areas of opportunity include: reviewing barriers to hiring; partnering with local academic institutions to conduct a comprehensive public health workforce assessment; increasing continuing education and professional development opportunities; more intentional connections between Human Resources and hiring directors; and increase the ability (time) of public health staff to contribute to research and innovation.

Determinants of Health/Health Equity

The LPHS has gaps in access to care due to inadequate language and interpretation services, lack of access to transportation, and lack of behavioral health services. Lack of trust from marginalized groups is a barrier to engagement in many EPHSs including assessment, constituency development, policy development, service provision, evaluation, and research, among other areas. Opportunities for improvement include: addressing the language we use to talk about health inequities; promoting a common understanding of the scope of public health and the EPHSs that includes social and structural determinants of health; utilizing existing racial

equity tools; and not only talking about health equity but actually changing the systemic and structural issues that create avoidable disparities.

Elevate Public Health as a Priority

Public health captures the public's attention during emergencies but can quickly fall off the public's radar when the emergency is over. When there is a budget crisis, public health is often the first area to be cut. Dependence on grant funding rather than consistently being part of the normal budget process threatens the sustainability of the public health organizations, which are subject to the ebbs and flows of grant periods. This reactionary approach negatively affects funding and sustainability for public health activities. Opportunities include building a culture of health to make public health a priority; telling the narrative of why we engage in public health activities; and elevating the innovative work that is occurring in the LPHS.

Policy

The LPHS has demonstrated willingness to take on policy reforms and has had some recent successes. However, the LPHS is short on resources for policy and therefore much of the work is reactive rather than proactive. Opportunities for improvement include conducting health impact assessments to measure the impact of current policies and procedures; and involving more community partners and residents early in the policy development process. The LPHS should also allocate time and resources to the review of existing policies.

Resources

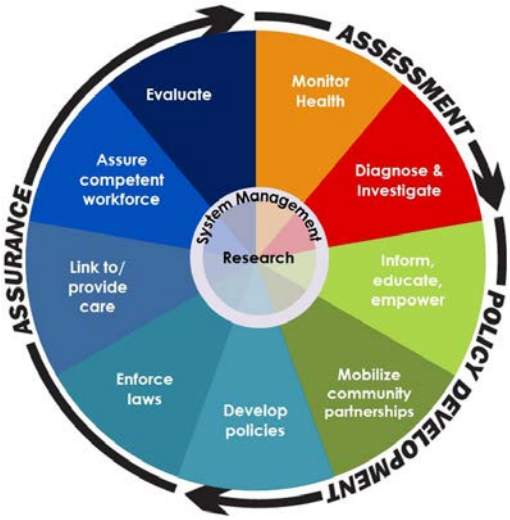
Academic institutions are an important source of funding, expertise, research, and training for the LPHS. The assets and resources that do exist in the LPHS are not well documented or coordinated. Organizational silos prevent the efficient use of resources. The LPHS lacks adequate funding for public health infrastructure development; assessment and evaluation; community engagement; mergers/alignment; policy review and compliance; data capacity; CHIP implementation; and health equity research. Funding sustainability is a concern for many LPHS organizations. Areas of opportunity include: being more intentional about resource documentation as part of the CHA; being more explicit about critical funding gaps; raising public awareness about the importance of funding public health; and aligning funders and organizations to reduce duplication.

The Assessment Instrument

The National Public Health Performance Standards (NPHPS) was a national initiative that developed a set of standardized goals for state and local public health systems and boards of health. This effort was coordinated by the Centers for Disease Control and Prevention (CDC) and six national partners.[2] The NPHPS includes three instruments to assess the performance of public health systems throughout the country. The local instrument is called the **Local Public Health System Assessment (LPHSA)**.

The LPHSA measures the performance of the local public health system – defined as the collective efforts of public, private, and voluntary entities, as well as individuals and informal associations that contribute to the public's health within a jurisdiction. This includes organizations and entities such as the local health department, other governmental agencies, healthcare providers, human service organizations, schools and universities, faith institutions, youth development organizations, economic and philanthropic organizations, and many others. Any organization or entity that contributes to the health or wellbeing of a community is considered part of the local public health system. Ideally, a group that is broadly representative of these public health system partners participates in the assessment process. By sharing diverse perspectives, all participants gain a better understanding of each organization's contributions, the interconnectedness of activities, and how the public health system can be strengthened. **The LPHSA does not focus specifically on the capacity or performance of any single agency or organization**.

The LPHSA is framed around the **10 Essential Public Health Services (EPHSs)** that are utilized in the field to describe the scope of public health. The 10 EPHSs support the three core functions of public health: assessment, policy development, and assurance.



[2] For more information, see "Overview About the National Public Health Performance Standards (NPHPS)."

The 10 EPHSs are defined as:

1. Monitor health status to identify 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 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 services.
8. Assure a competent public and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal/population-based health services.
10. Research for new insights and innovative solutions to health problems.

For each EPHS in the LPHSA, the **Model Standards** describe or correspond to the primary activities conducted at the local level. The number of Model Standards varies across each EPHS; while some include only two Model Standards, others include up to four. There are a total of 30 Model Standards in the LPHSA. For each Model Standard in each EPHS, there are a series of **Discussion Questions** and **Performance Measures** that further define the intent of the Model Standard.

All **Performance Measures** are designed to be scored based on how well participants perceive that, collectively, all members of the local public health system meet the standard within the local jurisdiction. Results are reached through group consensus, and the following scale is used for scoring:

Optimal Activity (76-100%)	The public health system is doing absolutely everything possible for this activity and there is no room for improvement.
Significant Activity (51-75%)	The public health system participates a great deal in this activity and there is opportunity for minor improvement.
Moderate Activity (26-50%)	The public health system somewhat participates in this activity and there is opportunity for greater improvement.
Minimal Activity (1-25%)	The public health system provides limited activity and there is opportunity for substantial improvement.
No Activity (0%)	The public health system does not participate in this activity at all.

The LPHSA results are intended to be used for quality improvement purposes for the local public health system and to guide the development of the overall public health infrastructure. Analysis and interpretation of data should also take into account variation in knowledge about

the local public health system among assessment participants: this variation may introduce a degree of subjectivity not capable of objective comparison. On a different day, a different group could conduct the assessment and the results could be different. For this reason, it is not advisable to compare scores from one assessment to another. Rather, the scores reflect the perceptions of the group participating at the time, the style of the facilitator, and the rationales shared by participants through discussion, which helps to understand the scores arrived at by participants. The important purpose of the measures is to use them as one tool to determine opportunities for improvement as part of a continuing process of quality improvement.

The Assessment Methodology

The assessment retreat was held on May 22, 2017 and began with a brief plenary presentation to welcome participants, provide an overview of the process, introduce the staff, and answer questions. Following the plenary presentation, participants reported to one of five breakout groups. Each breakout group was responsible for conducting the assessment for two Essential Public Health Services, as follows:

	LPHSA Breakout Groups	
Group	**EPHS**	**Topics**
A	EPHS 1	Monitor health status to identify community health problems.
	EPHS 2	Diagnose & investigate health problems & health hazards in the community.
B	EPHS 3	Inform, educate, and empower people about health issues.
	EPHS 4	Mobilize community partnerships to identify and solve health problems.
C	EPHS 5	Develop policies and plans that support individual and community health efforts.
	EPHS 6	Enforce laws and regulations that protect health and ensure safety.
D	EPHS 7	Link people to needed personal health services and assure the provision of health services.
	EPHS 9	Evaluate effectiveness, accessibility and quality of personal/population-based health services.
E	EPHS 8	Assure a competent public and personal health care workforce.
	EPHS 10	Research for new insights and innovative solutions to health problems.

Each group was professionally facilitated, audio recorded, and staffed by a note taker. The program ended with a plenary session where highlights were reported by members of each group. Event organizers facilitated the end-of-day dialogue, and outlined next steps in the MAPP process.

The 2017 St. Louis LPHSA included supplemental questions for each EPHS to identify how well the LPHS acknowledges and addresses health inequities. The LPHSA supplement is called "System Contributions to Assuring Health Equity," from the National Association of County and City Health Officials (NACCHO) MAPP User's Handbook. A copy of the supplement is in the appendix of this report. This event was the first time the health equity supplement was used for the St. Louis LPHSA. The event organizers (listed on page 15) chose to use this tool to further health equity work in their community, in alignment with the St. Louis CHA/CHIP vision and guiding principles (see page 14).

2017 St. Louis CHA/CHIP Vision and Guiding Principles

Our Vision is: St. Louis, an equitable community achieving optimal health for all.

Equity: Racial equity is an essential component of health equity. We prioritize allocation of resources to remedy disparities and to achieve equity.

Respect: We respect everyone in the community, valuing all cultures and recognizing strengths, needs, and aspirations without judgment.

Integrity: We use the highest standards of ethics and professionalism to maintain integrity and build community trust through honesty and commitment.

Data + Results Driven: We are committed to a transparent, data-driven process, including community feedback, actionable data, and evolving priorities, that results in measurable improvements/outcomes.

Community Engagement + Inclusion: Through intentional inclusion, engagement, and empowerment, we foster a culture of equity that respects and values the contributions of every individual toward a healthy community.

Systems level change + regional shared plan: We achieve systemic change and policy solutions locally and within a regionally shared plan to improve population-level health.

Resources: We collaborate regionally, coordinate existing resources, and develop new resources to accomplish healthy outcomes for all.

Assessment Participants

The City of St. Louis Department of Health (DOH), the Saint Louis County Department of Public Health (DPH), and the St. Louis Community Health Advisory Team (CHAT) developed a list of agencies to be invited to participate in the full day assessment retreat. The event organizers carefully considered how to balance participation across sectors and agencies and how to ensure that diverse perspectives as well as adequate expertise were represented in each breakout group.

The event drew 96 public health system partners that included public, private, and voluntary sectors. The composition of attendees reflected a diverse representation of partners that was apportioned as follows:

Attendees	Constituency Represented
2	City and county governmental agencies
3	Community based organizations
1	Community development organizations
1	Community health planners
1	Economists
1	Environmental health agencies
2	Epidemiologists
1	Foundations
2	Health officer/public health director
2	Health service providers
7	Healthcare systems
2	Health-related coalition leaders
7	Hospitals
1	Local businesses and employers
3	Local chapter of national health-related group
1	Media
1	Ministerial alliances
4	Non-profit organizations/advocacy groups
1	Parks and Recreation
3	Primary care clinics, community health centers, FQHCs
3	Professional associations
1	Public and private schools
1	Public health laboratories
4	Public safety and emergency response organizations

5	Social service providers
2	State health department
6	Substance abuse or mental health organizations
1	The local board of health or other local governing entity
16	The local health department or other governmental public health agency
10	Universities, colleges, and academic institutions
1	Waste management facilities
96	**TOTAL**

Results of the 2017 St. Louis Local Public Health System Assessment

The table below provides an overview of the Local Public Health System's performance in each of the 10 Essential Public Health Services. The average of all EPHS scores resulted in a composite score of **moderate** for LPHS performance.

Composite EPHS Scores for St. Louis			
EPHS	**EPHS Description**	**2017 Score[2]**	**Overall Ranking**
1	Monitor health status to identify community health problems.	38 Moderate	4th
2	Diagnose and investigate health problems and health hazards in the community.	56 Significant	1st
3	Inform, educate, and empower people about health issues.	24 Minimal	9th
4	Mobilize community partnerships to identify and solve health problems.	6 Minimal	10th
5	Develop policies and plans that support individual and community health efforts.	38 Moderate	5th
6	Enforce laws and regulations that protect health and ensure safety.	46 Moderate	2nd
7	Link people to needed personal health services and assure the provision of health services.	32 Moderate	6th
8	Assure a competent public and personal health care workforce.	31 Moderate	8th
9	Evaluate effectiveness, accessibility, and quality of personal/population-based health services.	43 Moderate	3rd
10	Research for new insights and innovative solutions to health problems.	32 Moderate	7th
	Overall LPHS Performance Score	**35 Moderate**	

Each EPHS score is a composite value determined by the scores breakout group participants assigned to the Performance Measures for those activities that contribute to each EPHS.[3] The scores range from a minimum value of 0% (no activity is performed pursuant to the standards) to maximum of 100% (all activities associated with the standards are performed at optimal levels). See page 11 for an explanation of the score values.

[3] The Health Equity Measures were not incorporated into the 2017 EPHS composite results. Please see page 19 for further explanation.

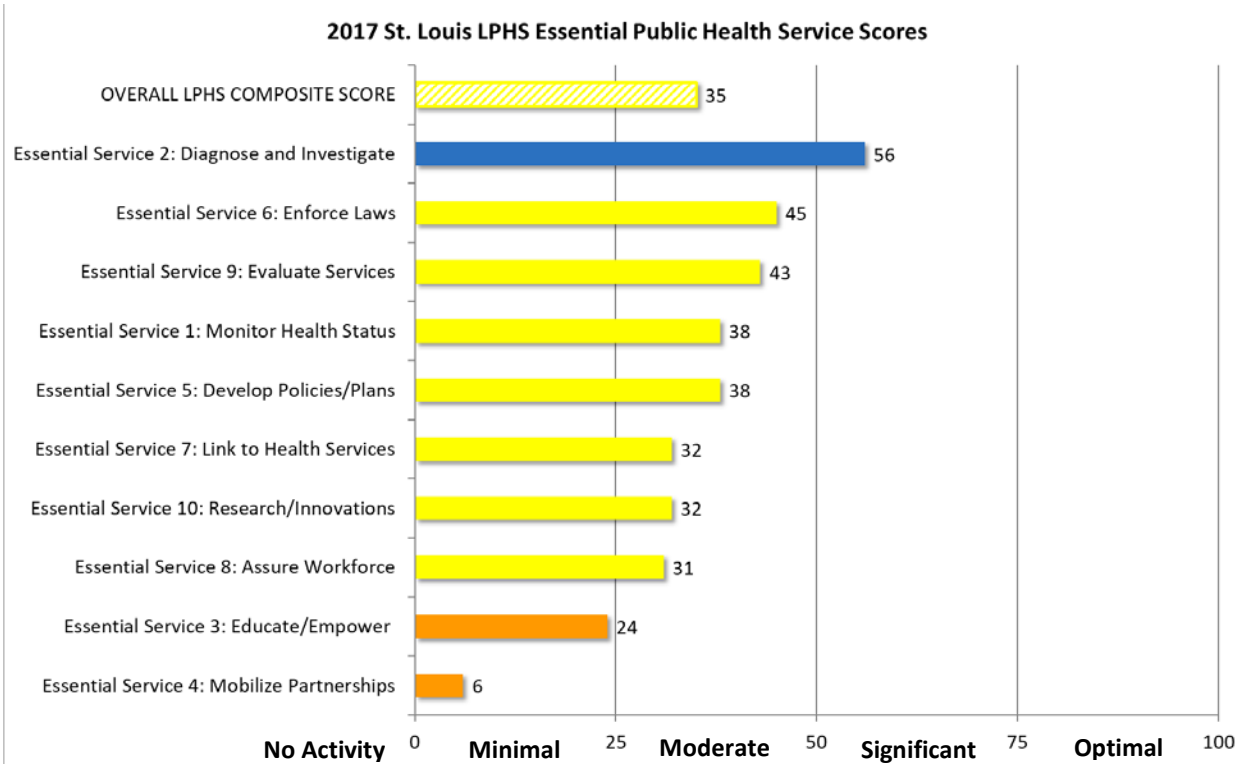
The St. Louis LPHSA participants gave the highest composite scores to the following three areas:

- EPHS 2 - Diagnose and investigate health problems and health hazards in the community (significant)
- EPHS 6 - Enforce laws and regulations that protect health and ensure safety (moderate)
- EPHS 9 - Evaluate effectiveness, accessibility, and quality of personal/population-based health services (moderate)

The participants gave the lowest composite scores to the following three areas:

- EPHS 4 - Mobilize community partnerships to identify and solve health problems (minimal)
- EPHS 3 - Inform, educate, and empower people about health issues, as the three strongest areas of performance for the LPHS (minimal)
- EPHS 8 - Assure a competent public and personal health care workforce (moderate)

The chart below provides a graphic representation of the 2017 Essential Public Health Service scores for St. Louis, from highest to lowest, without the Health Equity Measures factored into the average.[4] Each bar represents a composite score based on the Model Standards for each EPHS.



[4] See page 19 for information on Health Equity Measures.

System Contributions to Assuring Health Equity

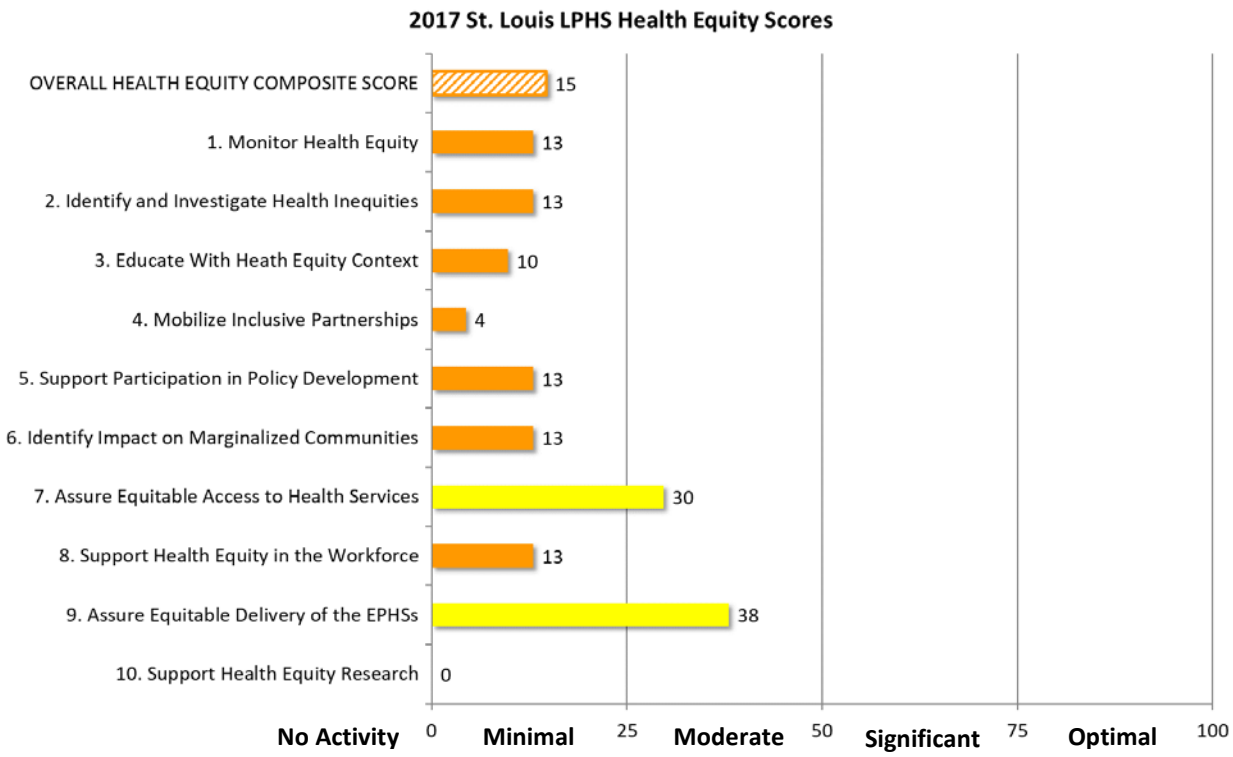
The St. Louis LPHSA included supplemental questions for each EPHS to identify how well the LPHS acknowledges and addresses health inequities. The LPHSA supplement is called "System Contributions to Assuring Health Equity," from the National Association of County and City Health Officials (NACCHO) MAPP User's Handbook. A copy of the supplement is in the appendix of this report. Health equity may be defined as:

> …the realization by all people of the highest attainable level of health. Achieving health equity requires valuing all individuals and populations equally and entails focused and ongoing societal efforts to address avoidable inequalities by ensuring the conditions for optimal health for all groups, particularly those who have experienced historical or contemporary injustices or socioeconomic disadvantage.[5]

City of St. Louis Department of Health (DOH) and St. Louis County Department of Public Health (DPH) organizers selected 1-3 health equity questions for each EPHS. This subset of questions is highlighted in the appendix. Like the Model Standards, each Health Equity Score is a composite value determined by the scores breakout group participants assigned to the Health Equity Measures.

The chart on the next page provides graphic representation of the Health Equity Scores by EPHS, and an overall Health Equity Score for the LPHS. The overall Health Equity Score for St. Louis was in the **moderate** range. The group conversation and findings for the Health Equity Measures are incorporated within the discussion summary for each EPHS.

[5] Adewale Troutman in *Health Equity, Human Rights and Social Justice: Social Determinants as the Direction for Global Health*. Retrieved from the National Association of County and City Health Officials (NACCHO) MAPP User's Handbook.



Health equity is a relatively new consideration for many public health systems. However, there are clearly opportunities to apply health equity to the delivery of the 10 Essential Public Health Services. The partners that comprise the LPHS are at different stages of integrating a health equity lens into their work. Many of the Health Equity Measures score far lower than the Performance Measures because this work is new and unfamiliar to many LPHS partners. The event organizers (listed on page 15) chose to use the System Contributions to Assuring Health Equity Supplement for the 2017 LPHSA to further health equity work in their community, in alignment with the St. Louis CHA/CHIP vision and guiding principles (see page 14).

Scores and Common Themes for each Essential Public Health Service

The following graphs and scores are intended to help the St. Louis Local Public Health System gain a better understanding of its collective performance and work toward strengthening areas for improvement. Each EPHS section contains:

- a table depicting group composition;
- a table with Performance Standard and Model Standard scores;
- a bar graph depicting the average score for each Model Standard and a composite score for the EPHS;
- discussion summaries for the Model Standards;
- a table with the Health Equity Measure scores;
- discussion summaries for the Health Equity Measures; and
- a summary of strengths, weaknesses, and opportunities for immediate and long-term improvement.

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

To assess performance for Essential Public Health Service 1, participants were asked to address two key questions:

What's going on in our community?
Do we know how healthy we are?

Monitoring health status to identify community health problems encompasses the following:

- Accurate, ongoing assessment of the community's health status.
- Identification of threats to health.
- Determination of health service needs.
- Attention to the health needs of groups that are at higher risk than the total population.
- Identification of community assets and resources that support the public health system in promoting health and improving quality of life.
- Use of appropriate methods and technology to interpret and communicate data to diverse audiences.
- Collaboration with other stakeholders, including private providers and health benefit plans, to manage multi-sectorial integrated information systems.

EPHS 1 Group Composition

Partners who gathered to discuss the performance of the local public health system in monitoring health status to identify community health problems included:

#	Organization Type
1	Community health planners
1	City and county governmental agencies
2	Epidemiologists
1	Healthcare systems
1	Local businesses and employers
1	Non-profit organizations/advocacy groups
1	Primary care clinics, community health centers, FQHCs
1	Professional associations
1	Community health planners

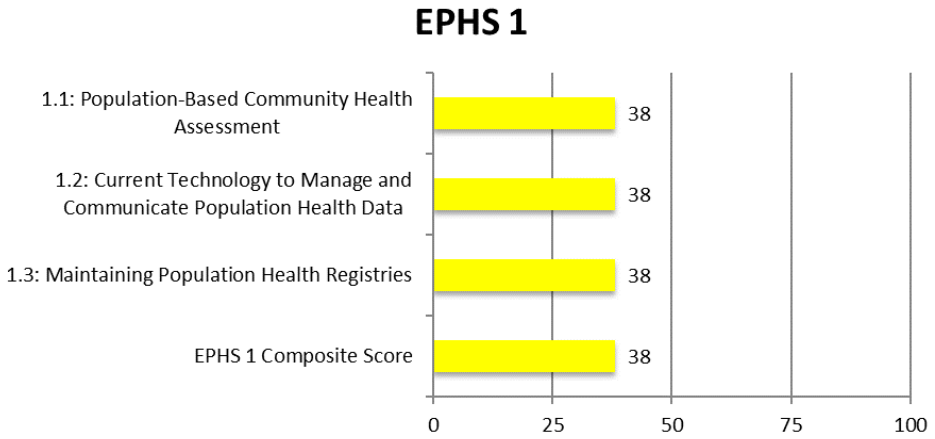
#	Organization Type
1	Public safety and emergency response organizations
1	Social service providers
2	State health department
1	Substance abuse or mental health organizations
1	The local board of health or other local governing entity
4	The local health department or other governmental public health agency

EPHS 1 Model Standard Scores

EPHS 1. Monitor Health Status To Identify Community Health Problems			
The LPHS completes a detailed community health assessment (CHA) to allow an overall look at the community's health. A CHA identifies and describes factors that affect the health of a population and pinpoints factors that determine the availability of resources within the community to adequately address health concerns. This provides the foundation for improving and promoting the health of the community and should be completed at least every three years. Data included in the CHA are accurate, reliable, and interpreted according to the evidence base for public health practice. CHA data and information are shared, displayed, and updated continually according to the needs of the community. By completing a CHA, a community receives an in-depth picture or understanding of its health. From the CHA, the community can identify the most vulnerable populations and related health inequities, prioritize health issues, identify best practices to address health issues, allocate resources where they are most needed, and provide a basis for collaborative efforts to promote the public's health. The CHA also tracks the health of a community over time and compares local measures to other local, state, and national benchmarks.			
1.1.1	Conduct regular CHAs		63
1.1.2	Update the CHA with current information continuously		38
1.1.3	Promote the use of the CHA among community members and partners		13
1.1	Population-Based Community Health Assessment (CHA)	MODERATE	38
The LPHS provides the public with a clear picture of the current health of the community. Health problems are looked at over time and trends related to age, gender, race, ethnicity, and geographic distribution. Data are shown in clear ways, including graphs, charts, and maps, while the confidential health information of individuals is protected. Software tools are used to understand where health problems occur, allowing the community to plan efforts to lessen the problems and to target resources where they are most needed. The CHA is available in both hard copy and online, and is regularly updated. Links to other sources of information are provided on Web sites.			
1.2.1	Use the best available technology and methods to display data on the public's health		38
1.2.2	Analyze health data, including geographic information, to see where health problems exist		38
1.2.3	Use computer software to create charts, graphs, and maps to display complex public health data (trends over time, sub-population analyses, etc.)?		38
1.2	Current Technology to Manage and Communicate Population Health Data	MODERATE	38
The LPHS collects data on health-related events for use in population health registries. These registries allow more understanding of major health concerns, such as birth defects and cancer, and tracking of some healthcare delivery services, such as vaccination records. Registries also allow the LPHS to give timely information to at-risk populations. The LPHS ensures accurate and timely reporting of all the information needed for health registries. Population health registry data are collected by the LPHS according to standards, so that they can be compared with other data from private, local, state, regional, and national sources. With many partners working together to contribute complete data, population registries provide information for policy decisions, program implementation, and population research.			
1.3.1	Collect timely data consistent with current standards on specific health concerns in order to provide the data to population health registries		38
1.3.2	Use information from population health registries in CHAs or other analyses		38
1.3	Maintaining Population Health Registries	MODERATE	38

EPHS 1 Discussion Summary

Dialogue in the EPHS 1 breakout session explored LPHS performance in monitoring community health status through community health assessment (CHA), using technology to manage and analyze population health data, and maintaining population health registries. Overall performance for EPHS 1 was scored **moderate** in St. Louis and ranked fourth out of the 10 EPHSs. The three Model Standards for EPHS 1 were all scored moderate.



Participants described extensive data collection on the part of many LPHS partners, and many efforts to link various data sets. As CHAs and CHNAs are mandated, more people are participating in the process, gaining expertise, and making the process and data more meaningful. Areas of improvement noted by the group include coordination of different entities doing assessments at different times; engagement of community members outside of the public health sector; sharing assessment results between LPHS partners; and implementing ways improved ways to disseminate the information for different audiences.

Model Standard 1.1, Population-Based Community Health Assessment (CHA), explores the extent to which the LPHS regularly assesses community health and uses the findings to inform the community and to drive future policy and planning. The participants scored the Performance Measures from minimal to significant, resulting in a composite Model Standard score of moderate.

Participants described extensive data collection on the part of many LPHS partners. Data sets include demographics; socioeconomic indicators; communicable disease; mental health; death/illness and injury; and built environment, among many others. LPHS partners reported using a health equity lens for collecting and analyzing data.

The Community Health Assessment (CHA) is conducted at minimum every 5 years and provides comparison of national, state, and local health status trends. Hospitals in the LPHS conduct a Community Health Needs Assessment (CHNA) every 3 years. Hospital representatives reported that they compare hospital data to the community stakeholders' input. Hospitals are starting to

collaborate more on their CHNAs and are expanding collaboration beyond stakeholder meetings. The Promise Zone[6] is conducting crosswalks to show where there are alignments and divergences among health related reports.

Respondents noted several opportunities to produce a better CHA. First, the LPHS should align disparate assessment timelines among its partners to be more efficient with time and resources. Second, the LPHS needs to do a better job of asking the community about their perception of health status and then circle back to report on the findings.[7] Third, the CHA should be written in a way that connects with residents, using appropriate language tailored for different audiences. The *For the Sake of All* (FSOA) report was cited as an example of data paired with good narrative. In general, the group agreed that the CHA is promoted among organizations in the public health sector but awareness of the CHA is lacking among community members. Finally, the LPHS would benefit from more comprehensive documentation of community assets and resources for the CHA.

The group had difficulty defining the terms in the second model standard, "Update the CHA with current information continuously." After discussion, the group agreed that the CHA document is a snapshot in time but the implementation plan developed from the CHA is continuously monitored, evaluated, and updated.

According to participants, the LPHS has improved in the identification of needs and issues and the LPHS uses data to drive decision-making; however, participants agreed the data can be made even more useful, meaningful, and actionable. For example, the LPHS can improve the integration of data sets to show the inter-relatedness of social determinants of health with health outcomes. FSOA was cited as a good example of this. Respondents noted that the academic community can facilitate a more robust understanding of the data.

Participants voiced their concern about a variety of health status trends in the LPHS, including: an alarming increase in sexually transmitted infection (STI) rates in the last 5 years; gun violence; the pedestrian fatality rate; and the lack of access to behavioral health services. One participant desired more discussion about the disparities in health care quality for people living in poverty.

Model Standard 1.2, Current Technology to Manage and Communicate Population Health Data, explores the extent to which the local public health system uses the best technology and methods to combine, analyze, and communicate data on the public's health. The participants scored all Performance Measures as moderate, resulting in a composite Model Standard score of moderate.

[6] Visit St. Louis Promise Zone for more information.

[7] For the current round of CHA/CHIP, the organizers have designed the process to improve collection of community perceptions through the Community Strengths and Themes Assessment (CTSA). Organizers will return to the community groups that participated in the CTSA to report on the findings.

The participants reported that data providers are linking many types of data including clinical, mental health, outpatient, oral health, and social determinants, among many others. An area of opportunity is to continue to link "non-health" data to health data to enrich the understanding of health outcomes and to drive the development of innovative upstream interventions. Hospitals and vendors are working to enhance the collection of social determinants of health data through electronic medical records (EMR). The respondents reported improved standardization of data in the LPHS. For example, there is a greater degree of internal and interagency agreement on geographic parsing of data. The highly fragmented nature of the region is a barrier to data sharing and interpretation, but overall, participants reported greater willingness from data providers to share across care systems and providers. For example, the county health department signed a data use agreement with BJC and other partners to gain access to data on overdoses, and they want to extend this partnership. The Regional Health Commission's Access to Care Databook Workgroup is working on expanding data partnerships. Greater interoperability across systems is also an area of opportunity for the LPHS.

The health departments reported that they are looking at data with a health equity lens. Data are provided by age, race, and geographic distribution. Participants noted that data quality could be improved for some sub-populations. The Robert Wood Johnson Foundation funded an expansion of the County Health Rankings Model[8] to the zip code level across the state of Missouri, utilizing hospital data and principle components analysis. Participants found this to be a valuable data set, especially for monitoring trends in small geographies. LPHS partners are building a dashboard (ThinkHealthSTL.org) to make these data publicly available and city data will be added to the dashboard in 6-8 weeks.[9] Some members of the group were concerned about privacy issues related to collecting and disseminating health data. Group members noted that there are protections (e.g. HIPAA (Health Insurance Portability and Accountability Act of 1996), data suppression) in place to protect privacy.

LPHS organizations analyze health data, including geographic information, to see where health problems exist and use computer software to display complex public health data. The health departments worked with the county GIS (Geographic Information Systems) office to assess which areas in the region have the highest STI burden. Using these data, they developed a web application to show where the sexual health resources are located (testing, treatment, condoms, etc.) in the community. A respondent described how the FSOA report inspired LPHS partners to work with St. Louis University and Washington University to create a life-expectancy map by zip code in 2012.

Participants noted that the data consumers in the LPHS do not have access to state-of-the-art data visualization technology. The St. Louis data dashboard could have better visualization, greater ease of use, and better means for users to give feedback. There are efforts to document GIS usage in the LPHS and several open data groups meet regularly. Many LPHS organizations

[8] For more information, visit County Health Rankings and Roadmaps.
[9] This timeline was true at the time of the assessment. City data have been published on the ThinkHealthSTL dashboard since the event.

analyze health data, though some of the smaller partners (e.g. Community-Based Organizations (CBOs), civic groups), especially those in poorer communities, lack technology to access data systems or lack staff capacity for analysis.

LPHS health departments, hospitals, and other partners are working to make information more accessible for residents. For example, the county health department is developing “story maps” which combine maps with narrative text, images, and multimedia contents. The city incorporates health data into communications on billboards, buses, radio, and television.

Model Standard 1.3, Maintenance of Population Health Registries, explores the extent to which data are regularly collected to update population health registries and the extent to which data from these health registries is used to inform the CHA and other health analyses. The participants scored all Performance Measures as moderate, resulting in a composite Model Standard score of moderate.

The Missouri Department of Health and Human Services (DHSS) has reporting standards for health departments entering information into registries. The participants acknowledged the importance of population health registries for data integrity and the ability to validate data over time. LPHS partners utilize data from population health registries for the CHA and other analyses. Registries need to be maintained and assessed periodically to determine if the data are still relevant. Many community health centers in the LPHS lack the ability to report electronically to state registries (e.g. vaccinations), which can affect timeliness and completeness of data.

EPHS 1 Health Equity Measures

EPHS 1 Health Equity Measures			
These questions explore the use of the CHA and other assessments to monitor differences in health and wellness across populations, and the level to which the LPHS monitors social and economic conditions that affect health in the community. At what level does the LPHS…			
1A	Conduct a community health assessment that includes indicators intended to monitor differences in health and wellness across populations, according to race, ethnicity, age, income, immigration status, sexual identify, education, gender, and neighborhood?		55
1B	Monitor social and economic conditions that affect health in the community, as well as institutional practices and policies that generate those conditions?		50
HE 1	Monitor Health Equity Via CHA and Other Community Assessments	SIGNIFICANT	53

Participants scored Health Equity Measures 1A and 1B as minimal, resulting in a composite Health Equity score of minimal. The CHA contains indicators according to race, ethnicity, age, and income, but does not include information by sexual identity or immigration status, among other variables. An opportunity for improvement is to disaggregate results for more populations and additional variables for use in the CHA and other analyses. The group agreed that the LPHS monitors social and economic conditions that affect health in the community, as well as institutional practices and policies that generate those conditions, but there is substantial room for improvement in these activities.

EPHS 1 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• CHAs and CHNAs are mandated, though the level of quality varies.
• The LPHS is creating CHAs, even if the reports are not promoted as extensively as desired.
• Leadership is involved and understands the need for a high quality CHA.
• High potential of the existing talent in the region.
• 3-5 year cycles give time to validate data and assess impact/outcome of programs and intervention (clear benchmarking).
• The LPHS displays data in a variety of ways: smart phone apps, online dashboard, health communications (e.g. buses, billboards, TV, radio).
• Population health registries are in place.
• More people are looking at data through a health equity lens (e.g. FSOA, *Forward Through Ferguson* report, racial equity tools).

Weaknesses
• The LPHS is not allocating enough resources based on the needs of community.
• The LPHS uses resources inefficiently; too many organizations work in silos.
• Lack of awareness of where to go for updates on CHA and CHIP.
• CHA language is not always tailored to various literacy levels and cultural needs.
• There are gaps in CHA reach; better dissemination is needed among community members and those outside of public health.
• Difficult to use one CHA document for public health professionals vs. community at large.
• Dashboard users are unable to provide feedback.
• Gaps in sub-population data.
• Inconsistent capacity across agencies for data collection and analysis.
• Data systems are not all connected, and some use old technology (interoperability).
• Registries are not complete – data are missing.
• Minimal awareness among LPHS partners about existence of registries and how to use the data.

Short-Term Opportunities
• Continual discussions among CHA partners (not just once every five years).
• Launch discussions with federal partners to align assessment timelines.
• Develop dual reports – for public health professionals and general public.
• Identify the next level of stakeholders and organizations who could use the data.

• Improve data visualization and ease of use.
• Look at other public health systems for ideas and best practices for sharing data.
• Identify available resources to improve data capacity.
• Collaborate with residents through community advisory boards to understand data needs and align data collection.
• Co-create solutions to improve data access for the community.
• Assess and enhance how the community uses technology.
• Share training opportunities between LPHS organizations (e.g. GIS, story mapping, etc.)
• Document who is using GIS data and in what way.
• Identify concerns around sharing data (e.g. privacy).
• Enhance EMR data collection to include social determinants of health.
• Increase understanding of population health – what it is/is not.
• Improve abstract for birth defect rates.
• Increase understanding of what population health registries are/how to utilize the data.
• Stratify CHA indicators by additional health equity variables.
• Review institutional policies through health equity lens.

Long-Term Opportunities
• Increase collaboration (formal/informal) between hospitals and community. Implement standard processes for hospital and public health collaboration.
• Sync timing of assessments – LPHS partners should appeal to IRS/CDC/HRSA to align CHA timeframes.
• Region-wide score card to measure progress on regional priorities.
• Improve data visualization and ease of use.
• Utilize story maps.
• Utilize and link to non-public health data (e.g. education) to understand health outcomes and identify interventions.
• Create a regional governance structure around data stewardship.
• Collaborate with residents through community advisory boards to understand data needs and align data collection.
• Increase interoperability of databases.
• Co-create solutions to improve data access for the community.
• Assess and enhance how the community uses technology.
• Enhance EMR data collection to include social determinants of health.
• Increase understanding of population health – what it is/is not.
• Increase understanding of what population health registries are/how to utilize the data.
• Improve abstract for birth defect rates.
• Identify and implement social registries (beyond traditional health information).

• Assess who is contributing to health registries; identify gaps and barriers to contributing.
• Enhance systems to collect more demographic data (e.g. immigration status).
• Determine ways to measure institutional policies and practices that lead to inequities.
• Review institutional policies through health equity lens.

Essential Public Health Service 2: Diagnose and Investigate Health Problems and Health Hazards

To assess performance for Essential Public Health Service 2, participants were asked to address three key questions:

Are we ready to respond to health problems or health hazards in our county?
How quickly do we find out about problems?
How effective is our response?

Diagnosing and investigating health problems and health hazards in the community encompasses the following:

- Access to public health laboratory capable of conducting rapid screening and high-volume testing.
- Active infectious disease epidemiology programs
- Technical capacity for epidemiologic investigation of disease outbreaks and patterns of infectious and chronic diseases and injuries and other adverse health behaviors and conditions.

EPHS 2 Group Composition

Partners who gathered to discuss the performance of the local public health system in diagnosing and investigating health problems and health hazards included:

#	Organization Type
1	Community health planners
1	City and county governmental agencies
2	Epidemiologists
1	Healthcare systems
1	Local businesses and employers
1	Non-profit organizations/advocacy groups
1	Primary care clinics, community health centers, FQHCs
1	Professional associations
1	Community health planners

#	Organization Type
1	Public safety and emergency response organizations
1	Social service providers
2	State health department
1	Substance abuse or mental health organizations
1	The local board of health or other local governing entity
4	The local health department or other governmental public health agency

EPHS 2 Model Standard Scores

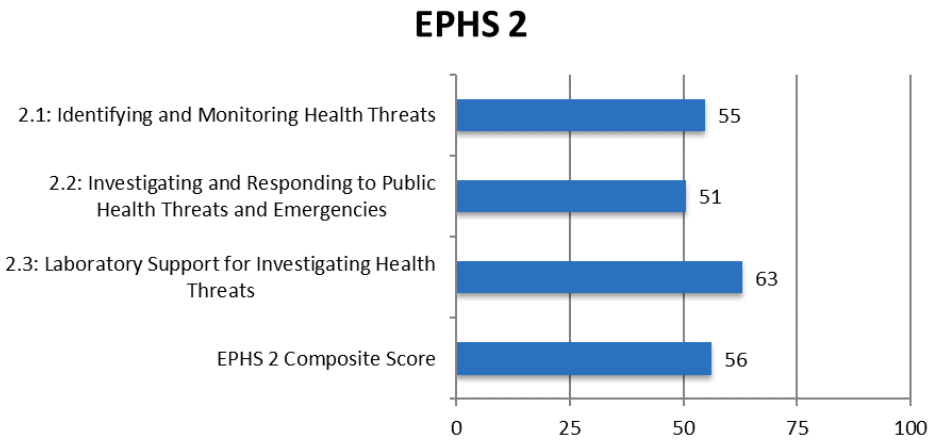
EPHS 2. Diagnose and Investigate Health Problems and Health Hazards			
The LPHS conducts surveillance to watch for outbreaks of disease, disasters, and emergencies (both natural and manmade), and other emerging threats to public health. Surveillance data include information on reportable diseases, potential disasters and emergencies, or emerging threats. The LPHS uses surveillance data to notice changes or patterns right away, determine the factors that influence these patterns, investigate the potential dangers, and find ways to lessen the effect on public health. The best available science and technologies are used to understand the problems, determine the most appropriate solutions, and prepare for and respond to identified public health threats. To ensure the most effective and efficient surveillance, the LPHS connects its surveillance systems with state and national systems. To provide a complete monitoring of health events, all parts of the system work together to collect data and report findings.			
2.1.1	Participate in a comprehensive surveillance system with national, state, and local partners to identify, monitor, and share information and understand emerging health problems and threats		63
2.1.2	Provide and collect timely and complete information on reportable diseases and potential disasters, emergencies, and emerging threats (natural and manmade)		63
2.1.3	Ensure that the best available resources are used to support surveillance systems and activities, including information technology, communication systems, and professional expertise		38
2.1	Identifying and Monitoring Health Threats	SIGNIFICANT	55
The LPHS stays ready to handle possible threats to public health. As a threat develops—such as an outbreak of a communicable disease, a natural disaster, or a biological, chemical, nuclear, or other environmental event—a team of LPHS professionals works closely together to collect and understand related data. Many partners support the response, with communication networks already in place among health-related organizations, public safety, rapid response teams, the media, and the public. In a public health emergency, a jurisdictional Emergency Response Coordinator leads LPHS partners in the local investigation and response. The response to an emergent event is in accordance with current emergency operations coordination guidelines.			
2.2.1	Maintain written instructions on how to handle communicable disease outbreaks and toxic exposure incidents, including details about case finding, contact tracing, and source identification and containment		63
2.2.2	Develop written rules to follow in the immediate investigation of public health threats and emergencies, including natural and intentional disasters		63
2.2.3	Designate a jurisdictional Emergency Response Coordinator?		63
2.2.4	Prepare to rapidly respond to public health emergencies according to emergency operations coordination guidelines		38
2.2.5	Identify personnel with the technical expertise to rapidly respond to possible biological, chemical, or and nuclear public health emergencies		38
2.2.6	Evaluate incidents for effectiveness and opportunities for improvement (such as After Action Reports, Improvement Plans, etc.)		38
2.2	Investigating and Responding to Public Health Threats and Emergencies	SIGNIFICANT	51

(continued on next page)

The LPHS has the ability to produce timely and accurate laboratory results for public health concerns. Whether a laboratory is public or private, the LPHS sees that the correct testing is done and that the results are made available on time. Any laboratory used by public health meets all licensing and credentialing standards.			
2.3.1	Have ready access to laboratories that can meet routine public health needs for finding out what health problems are occurring		38
2.3.2	Maintain constant (24/7) access to laboratories that can meet public health needs during emergencies, threats, and other hazards		63
2.3.3	Use only licensed or credentialed laboratories		88
2.3.4	Maintain a written list of rules related to laboratories, for handling samples (including collecting, labeling, storing, transporting, and delivering), determining who is in charge of the samples at what point, and reporting the results		63
2.3	Laboratory Support for Investigation of Health Threats	SIGNIFICANT	63

EPHS 2 Discussion Summary

Participants in EPHS 2 explored LPHS readiness to diagnose and effectively respond to health problems and health hazards. Overall performance for EPHS 2 was scored **significant** in St. Louis and ranked first out of the 10 EPHSs. The three Model Standards for EPHS 2 were all scored significant.



Participants acknowledged that the LPHS follows regulations that govern reportable disease surveillance and public health laboratories. LPHS partners participate in an Incident Command System (ICS) and engage frequently in emergency drills. The group noted that there are gaps in public awareness about LPHS emergency preparedness and response capacity. The LPHS would benefit from involving smaller organizations and lay community members in emergency dills and After Action Reporting (AAR).

Model Standard 2.1, Identification and Surveillance of Health Threats, explores LPHS performance to monitor and identify outbreaks, disasters, emergencies, and other emerging threats to public health. Participants scored the Performance Measures from moderate to significant, resulting in a composite Model Standard score of low significant.

The group agreed that the LPHS participates in a somewhat comprehensive surveillance system with national, state, and local partners to identify, monitor, and share information and understand emerging health problems and threats. There are statutes that govern mandatory public health reporting. Respondents indicated that medical providers could be better informed about mandatory reporting regulations. According to the group, the LPHS is somewhat behind the curve in reporting technologies; many surveillance systems are still paper-based (e.g. STIs) though some surveillance is electronic (e.g. Zika). Paper-based systems were regarded as both a strength and a weakness for the LPHS; paper-based systems cannot be hacked, but reporting is slower.

In general, the LPHS is good at establishing interventions once a threat is recognized, but there is room for improvement in anticipating and identifying emerging threats. Participants noted

that there are sometimes gaps in surveillance communication between federal, state, and local partners. One respondent noted the LPHS needs more intelligence input (e.g. law enforcement) to increase situational domain awareness.

The group discussed the "cycle of complacency" in which public health receives funding when there is an emergency but is otherwise overlooked. There is room for improvement in raising public awareness about public health and the need for sustainable funding to prepare for health threats. The group noted a barrier to proper surveillance is public skepticism and the fear that information collected by the government could be manipulated for political purposes.

Model Standard 2.2, Investigation and Response to Public Health Threats and Emergencies, explores LPHS performance in collecting and analyzing data on public health threats and responding to emergencies. Participants scored the Performance Measures from moderate to significant, resulting in a composite Model Standard score of low significant.

The participants agreed that the LPHS maintains written instructions on how to handle communicable disease outbreaks and toxic exposure incidents. Law enforcement agencies have instructions and brief employees on how to respond during an incident. The LPHS has developed written rules to follow in the immediate investigation of public health threats and emergencies, including natural and intentional disasters. Public health agencies identify what resources are available and conduct exercises so that during an emergency, resources are deployed in a timely manner. The group agreed that emergency drills occur frequently in the LPHS and many partners participate. Respondents noted that the LPHS completes improvement plans and AARs after emergency drills, but expressed concern that the improvements are not implemented.

The group reported there is a regional unified health command agreement and an emergency operations plan. If an incident is localized, partners will assist but the local agency becomes the lead agency during the response. The group reported that the health departments and other LPHS partners (Emergency Management Agency (EMA), law enforcement) follow ICS protocol. Participants expressed concern that the LPHS has written plans but they would not work well in an actual emergency. The LPHS has a jurisdictional Emergency Response Coordinator but participants did not know who it was.

An area of improvement would be to expand the awareness and involvement of LPHS partners and community residents that are not traditionally involved in emergency planning and response. The respondents noted that small LPHS partners (such as CBOs and residential facilities) are ill-equipped to respond during emergencies. Community organizations are invited to participate in drills but their participation is not mandatory. Additionally, CBOs are not involved in the AARs, which is a gap. The participants reported that public awareness is lacking – many LPHS partners are linked through the Federal Emergency Management Agency (FEMA) organizational structure but most people do not realize what goes on behind the scenes.

Model Standard 2.3, Laboratory Support for Investigation of Health Threats, discusses the ability of the LPHS to produce timely and accurate laboratory results for public health concerns. Participants scored the Performance Measures from moderate to optimal, resulting in a composite Model Standard score of significant.

The group agreed that the LPHS has ready access to laboratories that can meet routine public health needs for finding out what health problems are occurring. The Department of Health and Senior Services (through the state) provides 24/7 access to laboratories that can meet public health needs during emergencies, threats, and other hazards. Respondents reported that the LPHS uses only licensed or credentialed laboratories; these laboratories maintain a written list of rules related to handling samples, determining who is in charge of the samples at what point, and reporting the results. The participants noted that the group did not have representation from any LPHS laboratories for further details on this model standard.

EPHS 2 Health Equity Measures

EPHS 2 Health Equity Measures			
These questions explore participation in surveillance systems designed to monitor health inequities, collection of reportable disease information about health inequities, and resources available to investigate the social determinants of health inequities. At what level does the LPHS…			
2A	Operate or participate in surveillance systems designed to monitor health inequities and identify the social determinants of health inequities specific to the jurisdiction and across several of its communities?		13
2C	Have the necessary resources to collect information about specific health inequities and investigate the social determinants of health inequities?		13
HE 2	Identify and Investigate Health Inequities Through Surveillance and Reporting	MINIMAL	13

Participants scored Health Equity Measures 2A and 2C as minimal, resulting in a composite Health Equity score of minimal. The group agreed that the LPHS performs at a minimal level in operating or participating in surveillance systems designed to monitor health inequities. They also agreed that the LPHS has some resources to collect information about specific health inequities and investigate the social determinants of health inequities, though there is significant room for improvement. One participant noted that the Deaconess Foundation has a grant for hospitals that are interested in identifying and investigating the social determinants of health inequities.

EPHS 2 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• Communicable disease reporting is mandated.
• Paper-based systems are not susceptible to hacking.
• St. Louis Area Agency on Aging (SLAAA) hosts a functional needs registry and collaborates with the public health departments regarding emergencies (mostly the older adult population and people with disabilities).
• The LPHS trains volunteer emergency personnel.
• The Emergency Response Coordinator is designated through the emergency plans.
• The LPHS has the Unified Health Command document.
• After Action Reports/Improvement Plans (AARs/IPs) are required for public health, EMA, hospitals, law enforcement, etc.
• The LPHS utilizes the Incident Command System (ICS).[10]
• Many institutions that make the system are represented in training.
• The LPHS has a Medical Reserve Corp and Radiological Response Medical Reserve Corp.
• Emergency Management Agencies (EMAs), law enforcement, and public health labs all have written plans and procedures for incidents.

Weaknesses
• Sometimes there are gaps in communication of health threats between national, state, and local levels.
• Lack of funding and sustainability for public health.
• We only fund public health when it is an emergency ("a cycle of complacency").
• General public fears that information that is collected by the government could be manipulated for political purposes.
• Paper based reporting systems are slow.
• Emergency response may be the least impactful area of public health but it is the most funded.
• CDC funding is dependent on federal political agenda; they are currently facing a $50 million cut in their budget.
• Written plans may not be successfully operationalized in an actual emergency.
• Lack of staffing for emergency preparedness.
• AARs/IPs improvements are not being addressed in a timely fashion.

[10] ICS is a standardized approach to the command, control, and coordination of emergency response providing a common hierarchy within which responders from multiple agencies can be effective. For more information, visit the ICS Resource Center.

- Civilian awareness and readiness is lacking.

Short-Term Opportunities
• Improve communication between participating agencies.
• Increase awareness among medical providers; sometimes they do not know the mandatory reporting requirements.
• Increase public awareness about the importance of funding public health.
• Improve communications back to providers about surveillance (e.g. STIs).
• Written instructions should be available in both digital and hard copy.
• Increase civilian emergency response training.
• Improve the emergency public speaker system so the audio is clear.
• Work with people who have been involved with an emergency.
• Review manuals annually and time stamp to ensure plans reflect best practice.
• Improve use of digital technology (ex. SMS text messaging to communicate threats).
• Implement Continuous Quality Improvement (CQI) for AAR documentation.

Long-Term Opportunities
• "Big data" and advances in computing power may open opportunities we cannot even imagine right now.
• Increase information input from law enforcement and intelligence partners to improve situational awareness and domain awareness.
• Ensure plans can be operationalized for threats at a local level.
• Practice for emergencies.
• Increase community training, education, and awareness of emergency preparedness.
• Increase governmental support for community-based agency response.
• Involve CBOs in emergency preparedness exercises.
• Utilize racial equity tools in identifying and monitoring health threats.

Essential Public Health Service 3: Inform, Educate, and Empower People about Health Issues

To assess performance for Essential Public Health Service 3, participants were asked to address the key question:

How well do we keep all segments of our community informed about health issues?

Informing, educating, and empowering people about health issues encompasses the following:

- Community development activities.
- Social marketing and targeted media public communication.
- Provision of accessible health information resources at community levels.
- Active collaboration with personal healthcare providers to reinforce health promotion messages and programs.
- Joint health education programs with schools, churches, worksites, and others.

EPHS 3 Group Composition

Partners who gathered to discuss the performance of the local public health system in informing, educating, and empowering people about health issues included:

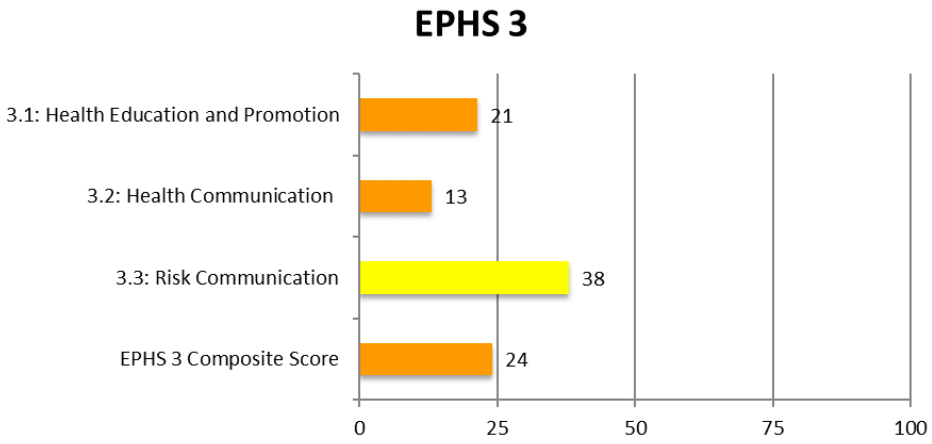
#	Organization Type
1	Local chapter of national health-related group
1	Community based organizations
1	Community development organizations
4	Healthcare systems
3	Hospitals
2	Local chapter of national health-related group
1	Media
1	Ministerial alliances
1	Non-profit organizations/advocacy groups
1	Parks and Recreation
2	Social service providers
2	Substance abuse or mental health organizations
2	The local health department or other governmental public health agency
1	Universities, colleges, and academic institutions
1	Local chapter of national health-related group

EPHS 3 Model Standard Scores

EPHS 3. Inform, Educate and Empower People about Health Issues			
The LPHS designs and puts in place health promotion and health education activities to create environments that support health. These promotional and educational activities are coordinated throughout the LPHS to address risk and protective factors at the individual, interpersonal, community, and societal levels. The LPHS includes the community in identifying needs, setting priorities, and planning health promotional and educational activities. The LPHS plans for different reading abilities, language skills, and access to materials.			
3.1.1	Provide policymakers, stakeholders, and the public with ongoing analyses of community health status and related recommendations for health promotion policies		38
3.1.2	Coordinate health promotion and health education activities at the individual, interpersonal, community, and societal levels		13
3.1.3	Engage the community throughout the process of setting priorities, developing plans, and implementing health education and health promotion activities		13
3.1	Health Education and Promotion	MINIMAL	21
The LPHS uses health communication strategies to contribute to healthy living and healthy communities that include the following: increasing awareness of risks to health; ways to reduce health risk factors and increase health protective factors; promoting healthy behaviors; advocating organizational and community changes to support healthy living; increasing demand and support for health services; building a culture where health is valued; and creating support for health policies, programs, and practices. Health communication efforts use a broad range of strategies, including print, radio, television, the Internet, media campaigns, social marketing, entertainment education, and interactive media. The LPHS reaches out to the community through efforts ranging from one-on-one conversations to small group communication, to communications within organizations and the community, and to mass media approaches. The LPHS works with many groups to understand the best ways to present health messages in each community setting and to find ways to cover the costs.			
3.2.1	Develop health communication plans for media and public relations and for sharing information among LPHS organizations		13
3.2.2	Use relationships with different media providers (e.g., print, radio, television, the Internet) to share health information, matching the message with the target audience		13
3.2.3	Identify and train spokespersons on public health issues		13
3.2	Health Communication	MINIMAL	13
The LPHS uses health risk communications strategies to allow individuals, groups, organizations, or an entire community to make optimal decisions about their health and well-being in emergency events. The LPHS recognizes a designated Public Information Officer (PIO) for emergency public information and warning. The LPHS organizations work together to identify potential risks (crisis or emergency) that may affect the community and develop plans to effectively and efficiently communicate information about these risks. The plans include pre-event, event, and post-event communication strategies for different types of emergencies.			
3.3.1	Develop an emergency communications plan for each stage of an emergency to allow for the effective dissemination of information		38
3.3.2	Make sure resources are available for a rapid emergency communication response		38
3.3.3	Provide risk communication training for employees and volunteers		38
3.3	Risk Communication	MODERATE	38

EPHS 3 Discussion Summary

Participants in EPHS 3 explored LPHS performance in keeping the community informed and empowered about public health issues. Overall performance for EPHS 3 was scored **high minimal** in St. Louis and ranked ninth out of the 10 EPHSs. The three Model Standards for EPHS 3 were scored from minimal to moderate.



LPHS health education strengths include good models of collaboration and a desire to partner and achieve optimal health in the community. However, participants reported that LPHS collaboration is weak in the implementation phase. The LPHS has health communication infrastructure but organizations do not use it in a coordinated way. The group suggested that LPHS organizations improve coordination of talking points before issues go public. Additionally, public health issues sometimes take a back seat to other news. Participants suggested that building a "culture of health" in the LPHS will help keep public health a priority. The LPHS performs slightly better in risk communication than general health communication, but there are opportunities to share more at the community level.

Model Standard 3.1, Health Education and Promotion, explores the extent to which the LPHS successfully provides policy makers, stakeholders, and the public with health information and related recommendations for health promotion policies, coordinates health promotion and education activities, and engages the community in setting priorities and implementing health education and promotion activities. Participants scored the Performance Measures from minimal to moderate, resulting in a composite Model Standard score of high minimal.

Participants described a wide range of health education and promotion activities in the LPHS, and noted that organizations do these activities independently and collaboratively. Partners share community health status data (through CHAs and other assessments), prevention and risk factor data (such as the opioid epidemic), and community health needs (through CHNAs and other assessments). Information is shared among public agencies, private agencies, volunteer organizations, non-profit organizations, community groups, businesses, and policy makers. The

group identified many formal coalitions in the LPHS that do education and promotion such as Generate Health, Early Childhood Council, and United Way, among others.

Participants reported that organizations work together to plan, conduct, and implement activities in a variety of ways. Hospitals often give charitable donations to support organizations that do health education in the community. National associations train stakeholders to become board members and develop leadership skills. LPHS organizations can receive training to develop accessible health messaging. LPHS partners help align direct service organizations or support community coalitions to strategically expand their partnerships beyond their typical scope. The group reported several examples of working beyond typical LPHS partners on specific health promotion activities, including "Walk with a Doc" to improve physician-patient communication; nutrition education at supermarkets; dollar matching programs to purchase healthy foods; and medication take back programs.

The LPHS provides health education on many topics including STI prevention (Get Tested STL), nutrition, worksite wellness, mental health and toxic stress (Alive and Well Campaign), and self-care, among many other topics. Education occurs in a variety of settings including personal healthcare delivery locations (e.g. Walk with a Doc), worksites, schools (e.g. Healthy Schools, Healthy Communities), neighborhoods (e.g. grocery stores, health fairs, community events), recreational facilities, and places of worship (e.g. potlucks after religious service). The group described health promotion activities that have occurred through television and radio, including Alive and Well St. Louis, Radio One promoting communicable disease education and summer meal programs, and the St. Louis Cardinals promoting a wellness campaign for diabetes.

The group agreed that the LPHS bases campaigns on a combination of evidence-based approaches and evidence of effectiveness. Some LPHS organizations strive to meet established health literacy standards or they do research on what resonates/connects with targeted populations to make messaging more effective. Participants reported that LPHS organizations tailor campaigns based on income level, risk factors, language, and literacy; some organizations test materials with focus groups to confirm it meets the population's needs. Campaigns are evaluated through participation rates, pre- and post- tests to measure knowledge gain, and qualitative feedback. The group noted that the campaigns are lacking in outcome data, particularly in measuring behavior change. In general, the group agreed there was room for improvement in adequate and correct measurement to be able to compare evidence-based practices and the impact of programs. Participants said that funders are demanding more outcome data but are not adequately funding evaluation for programs.

Model Standard 3.2, Health Communication, explores the extent to which the LPHS uses health communication strategies to increase awareness of health risk factors, promote healthy behaviors, advocate for organizational and community changes to support healthy living, build a culture of health, and create support for health policies and programs through development of relationships with the media, information sharing among LPHS partners, and identification and training of spokespersons on public health issues. Participants scored all Performance Measures as minimal, resulting in a composite Model Standard score of minimal.

The group agreed that health communication in the LPHS is not comprehensive and is loosely coordinated at a system level. The participants reported that most LPHS organizations have issue specific communications plans, but they may or may not include health issues. The county health department has an emerging health communication program built out of interdepartmental teams. The city health department has Public Information Officers (PIOs) and coordinates some communication with the county (e.g. joint press releases). There is some system level coordination through the Missouri Department of Health and Senior Services (DHSS). Some organizations in the LPHS are seen as subject matter experts and there are spokespersons for certain subjects, however they are not formally recognized in this capacity.

Respondents agreed that LPHS could improve coordination with different media providers. LPHS organizations are good at sharing events individually via social media but could do more in other media forms. Participants also voiced that health information is not always tailored to the target audience. The participants identified a few health information campaigns that were well coordinated and publicized: Alive and Well St. Louis, and information campaigns about the opioid epidemic. For the opioid campaign, the LPHS had many non-traditional health partners come together to discuss solutions to the problem. In general, health communication in the LPHS is reactive rather than proactive.

Some participants suggested that it is unrealistic to have a centralized health communications system, while other participants cited examples of regions that have a system approach to health communications. The group agreed that it would be helpful to get the perspective of media stakeholders for this Model Standard.

Model Standard 3.3, Risk Communication, specifically explores LPHS performance in communicating health information in emergencies. Participants scored all Performance Measures as moderate, resulting in a composite Model Standard score of moderate. Overall the LPHS is more coordinated at the system level in risk communication than in other areas of EPHS 3, though the respondents identified areas for improvement.

Hospitals in the LPHS are well aware of emergency communication plans and have access to the functional needs registries. Some organizations are enrolled in the Rave Alert system, which is described as "a mass notification system for routine messaging and emergency communications."[11] However, participants noted that awareness may be limited to certain LPHS organizations that participate in emergency planning. For groups that are involved, there is an established process for emergency communication but the plans are not comprehensive enough for all events or all partners that should be involved. The group noted a gap in risk communication planning for violence and community unrest. The LPHS also lacks coordinated planning for emergencies resulting from service termination (e.g. recent homeless shelter closure).

[11] For more information, see Rave Alert website.

Certain employees at the health departments and hospitals receive ICS training for emergencies. However, the group participants said risk communication training is not widely available among LPHS organizations. The participants suggested that direct service organizations and community members need to be more directly involved in health communication and risk communication planning. The group agreed that the LPHS would benefit from a shared scope of public health that includes ensuring basic needs before and after emergencies. The participants noted that it would be helpful to get the perspective of emergency preparedness personnel for this Model Standard.

EPHS 3 Health Equity Measures

EPHS 3 Health Equity Measures			
These questions explore how the general public, policymakers, and private stakeholders are informed about community health status and needs in the context of health equity and social justice, whether health promotion and education campaigns are culturally competent, and whether the LPHS plans campaigns to identify the structural and social determinants of health inequities. At what level does the LPHS…			
3A	Provide the general public, policymakers, and public and private stakeholders with information about health inequities and the impact of government and private sector decision-making on historically marginalized communities?		13
3B	Provide information about community health status (e.g., heart disease rates, cancer rates, and environmental risks) and community health needs in the context of health equity and social justice?		13
3C	Plan and conduct health promotion and education campaigns that are appropriate to culture, age, language, gender, socioeconomic status, race/ethnicity, and sexual orientation?		13
3D	Plan campaigns that identify the structural determinants of health inequities and the social determinants of health inequities (rather than focusing solely on individuals' health behaviors and decision-making)?		0
HE 3	Inform, Educate, and Empower People About the Social Determinants of Health	MINIMAL	10

Participants scored Health Equity Measures 3A-3D from no activity to minimal, resulting in a composite Health Equity score of minimal. The participants reported that the LPHS is making some progress in health equity but substantial improvement is needed; as one participant described, "people are talking the talk, but not walking the walk." There is a lot of information available regarding health equity (e.g. FSOA) and awareness has increased in the LPHS, but participants scored these measures minimal due to lack of action on health equity issues. The group agreed that the LPHS provides information about community health status and health disparities, but not necessarily in the context of health equity and social justice. The respondents reported no activity around campaigns that identify structural and social determinants of health. The group agreed there is good energy around health equity (for example, every health system in the city has signed the American Hospital Association "Equity Pledge") and momentum must continue.

EPHS 3 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• The system understands the need for health education and promotion.
• There is strong programming in the LPHS.
• There is willingness to partner and collaborate among LPHS organizations.
• There are pockets and models of great collaboration.
• Individuals are willing to collaborate.
• Non-traditional partnerships are expanding.
• The LPHS can take advantage of academic partnerships; they have time, talent, and resources.
• The Community Health Worker (CHW) model is growing in popularity.
• Infrastructure of health communications exists: social media, news outlets.
• Organizations in the community are informally recognized as subject matter experts.
• The LPHS has access to health literacy experts.

Weaknesses
• Lack of coordinated planning and implementation of efforts in health communication.
• Lack of systemic leadership and visioning.
• Assessment timelines vary.
• Not enough work on community improvement plans.
• Poor access to health outcome data.
• Need to build trust in the community. We ask what the community needs but do not work with them on the solutions.
• We do not meet people where they are. Some community members may not consider health information a priority when they have more pressing needs.
• Lack of future focus for efforts.
• The LPHS is fragmented and organizations can be territorial, especially if it means giving up sole ownership of a project.
• Lack of robust racial equity lens and trauma informed care.
• Lack of political will to make key changes.
• Lack of formal subject matter experts and spokespeople for health communication.
• No coordinated effort around health communication; media use is not coordinated.
• Health communication is reactive, not proactive.
• Health communication is not seen as a priority.
• Health literacy level of current communication is not always appropriate.
• Lack of/need for health communication to the policy makers.
• Lack of common scope of what public health is.

- Lack of coordinated efforts to address closure of services.

Short-Term Opportunities
• Move current efforts through planning and implementation (e.g. city and county coordinate the assessment process.)
• Combine similar and like efforts for financial resource development.
• Raise awareness of who constitutes the LPHS and their contact information.
• Market and promote other organizations' programs using institutional resources.
• Coordinate with current one-stop resource guides to share resources (e.g. United Way).
• Continue work with Accountable Health Communities.
• Create a notification system in the LPHS for health communication messages and share talking points.
• Formally recognize subject matter experts in the LPHS so everyone is aware. Provide communications training to them.
• Involve social services in health and risk communication.
• Include community members and community partners in developing risk communication plans and share the plans with the community.
• Place a racial equity lens on risk communication.

Long-Term Opportunities
• Scale the CHW program.
• Identify several collective impact areas; identify the organizations, what their roles are, and approaches to meet their needs.
• Enable more opportunities to network with other organizations that are doing this work.
• Engage physicians in resources that are available for their patients.
• Commit to coordination (e.g. grant communication and collaboration) and accountability.
• Develop a knowledge sharing platform.
• Develop operational definition and scope of public health, culture of health, and healthy community.
• Public health alerts (akin to "Amber alerts") and reminder texts.
• Develop a communication hub of resources.
• Develop a LPHS communication plan.
• Develop relationships with media providers.
• Commit to health literacy, inclusion, and health equity.
• Integrate health and social service delivery with hot spot policing.

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

To assess performance for Essential Public Health Service 4, participants were asked to address the key question:

How well do we truly engage people in local health issues?

Mobilizing community partnerships to identify and solve health problems encompasses the following:

- Convening and facilitating partnerships among groups and associations (including those not typically considered to be health related).
- Undertaking defined health improvement planning process and health projects, including preventive, screening, rehabilitation, and support programs.
- Building a coalition to draw on the full range of potential human and material resources to improve community health.

EPHS 4 Group Composition

Partners who gathered to discuss the performance of the local public health system in mobilizing community partnerships to identify and solve health problems included:

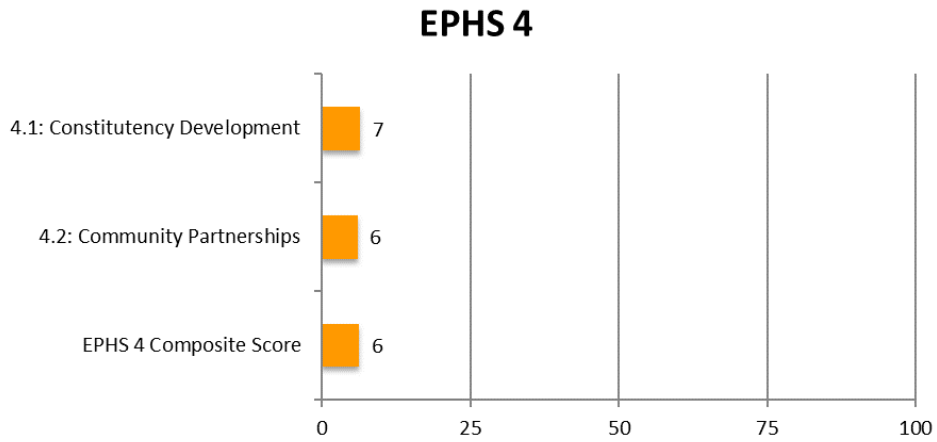
#	Organization Type
1	Local chapter of national health-related group
1	Community based organizations
1	Community development organizations
4	Healthcare systems
3	Hospitals
2	Local chapter of national health-related group
1	Media
1	Ministerial alliances
1	Non-profit organizations/advocacy groups
1	Parks and Recreation
2	Social service providers
2	Substance abuse or mental health organizations
2	The local health department or other governmental public health agency
1	Universities, colleges, and academic institutions
1	Local chapter of national health-related group

EPHS 4 Model Standard Scores

EPHS 4. Mobilize Community Partnerships to Identify and Solve Health Problems			
The LPHS actively identifies and involves community partners—the individuals and organizations (constituents) with opportunities to contribute to the health of communities. These stakeholders may include health, transportation, housing, environmental, and non-health related groups, and community members. The LPHS manages the process of establishing collaborative relationships among these and other potential partners. Groups within the LPHS communicate well with one another, resulting in a coordinated, effective approach to public health, so that the benefits of public health are understood and shared throughout the community.			
4.1.1	Maintain a complete and current directory of community organizations		0
4.1.2	Follow an established process for identifying key constituents related to overall public health interests and particular health concerns		0
4.1.3	Encourage constituents to participate in activities to improve community health		13
4.1.4	Create forums for communication of public health issues		13
4.1	Constituency Development	MINIMAL	7
The LPHS encourages individuals and groups to work together so that community health may be improved. Public, private, and voluntary groups—through many different levels of information sharing, activity coordination, resource sharing, and in-depth collaborations—strategically align their interests to achieve a common purpose. By sharing responsibilities, resources, and rewards, community partnerships allow each member to share its expertise with others and strengthen the LPHS as a whole. A community group follows a collaborative, dynamic, and inclusive approach to community health improvement; it may exist as a formal partnership, such as a community health planning council, or as a less formal community group.			
4.2.1	Establish community partnerships and strategic alliances to provide a comprehensive approach to improving health in the community		13
4.2.2	Establish a broad-based community health improvement committee		5
4.2.3	Assess how well community partnerships and strategic alliances are working to improve community health		0
4.2	Community Partnerships	MINIMAL	6

EPHS 4 Discussion Summary

Participants in EPHS 4 explored LPHS performance in engaging the community in local health issues through partnerships. Overall performance for EPHS 4 was scored **minimal** in St. Louis and ranked tenth out of the 10 EPHSs. The two Model Standards for EPHS 4 were scored minimal.



Participants acknowledged that active LPHS partners and coalitions attempt to be welcoming and inclusive, but invitation and participation is largely based on "who you know." The respondents agreed that the LPHS lacks a comprehensive and up to date list of community partners, and as a result, key participants are being left out. Opportunities for improvement include: making partnerships more inclusive and accessible; aligning partners and funders with similar goals; and improving scalability of projects from pilot to community level.

Model Standard 4.1, Constituency Development, examines LPHS performance in identifying and involving a wide range of community partners and providing opportunities to contribute to community health. Participants scored the Performance Measures from no activity to minimal, resulting in a composite Model Standard score of minimal.

The group named many organizations that are active in the LPHS, including hospitals and health systems; health providers; social services organizations; schools; and faith-based organizations. Participants noted that faith-based organizations are engaged on certain issues more than others, and they tend to do more work in delivery of services or education, unless they have the resources available to involve staff in other activities. The biggest gap is lack of participation from community members; those who in live in the community and understand the needs must be involved in creating solutions. There are many grassroots organizations that are working in the LPHS but do not have the opportunity or capacity to sit at the table. There is also a lack of participation from emergency preparedness representatives, transportation representatives, civic organizations, and elected officials. New individuals are identified for constituency building through existing working relationships. The group agreed that existing coalition members tend

to be very welcoming to new members. A barrier to participation is time and location of meetings.

Community members are engaged to improve health by participating in focus groups; interacting with "health ambassadors" at locations in the community (i.e. grocery stores); and through targeted message campaigns. However, the group noted the LPHS could do better outreach and follow up with community members to encourage participation and inclusion. The LPHS does minimal work creating forums for communication of public health issues, with the exception of the opioid issue, which has had a more coordinated response.

The United Way resource guide serves as a directory of LPHS organizations, and the CMS Accountable Health Communities are working toward a community directory, but there is no comprehensive list for the LPHS. The LPHS process for identifying key constituents is unclear; sometimes grants stipulate participation by certain partners, in other cases, invitation is based on existing relationships and "who you know." Often non-traditional partners do not understand their role in the LPHS and what they can contribute to public health planning and implementation; the group noted that the LPHS must clearly communicate why non-traditional partners need to be involved. Sometimes trust issues preclude participation from certain partners.

Model Standard 4.2, Community Partnerships, explores the LPHS performance in encouraging and mobilizing collaboration across the community, establishing a broad-based community health improvement committee, and assessing the impact and effectiveness of community partnerships in improving community health. Participants scored the Performance Measures from no activity to minimal, resulting in a composite Model Standard score of minimal.

The group reported that there were many partnerships at the local, regional, and state level to maximize public health improvement activities. The St. Louis Partnership for a Healthy Community is a product of the last Saint Louis County CHA, and partnerships have coalesced around priorities in the CHA (e.g. Healthy Living Coalition works on chronic disease). The St. Louis Business Health Coalition forges partnerships with companies in the region. FSOA has several action planning groups that have spurred collective impact partnerships around school-based health centers, violence prevention, and CHWs. FSOA action teams set goals for 12-18 months. The Breakthrough Coalition is a group of 200 aging public service professionals that meet every other month to discuss local issues.

The group identified several groups that serve as (somewhat) broad-based community health improvement committees, such as FSOA, Ready by 21, and Flourish (under Generate Health). Ready by 21 is focused on child-wellbeing and is working to coordinate partnerships, set commons goals, and leverage funding across the region. This work has provided lessons learned for collective impact work in the region, such as clarifying the role of backbone organizations, and understanding what larger players can bring to the table in terms of capacity building. However, the participants noted that it is still difficult to see results from collective impact work (e.g. "moving the needle" and sustainability) and there need to be more successes for people to

buy in and align efforts. Another weakness noted by respondents is the lack of scalability from small geographies (e.g. zip code) to the broader community. The group agreed there is room for improvement in: collaboration with rural health organizations; streamlining fragmented partnerships around policy and social determinants of health; bringing grassroots organizations on board to help balance larger players (such as BJC health system) in community partnerships; better sharing of data to show intersection of health with other sectors (e.g. transportation); and capacity building for community members to participate in joint problem solving. Participants agreed there is a desire to boost the health improvement work that has started but at the same time recognize that the LPHS is not where it needs to be.

EPHS 4 Health Equity Measures

EPHS 4 Health Equity Measures			
These questions explore inclusiveness of LPHS coalitions and decision-making. At what level does the LPHS…			
4A	Have a process for identifying and engaging key constituents and participants that recognizes and supports differences among groups?		0
4B	Provide institutional means for community-based organizations and individual community members to participate fully in decision-making?		0
4C	Provide community members with access to community health data?		13
HE 4	Inclusive and Participatory Community Partnerships	MINIMAL	4

The participants scored Health Equity Measures 4A-4C from no activity to minimal, resulting in a composite Health Equity score of low minimal. The group agreed there was no activity in the LPHS around a process for identifying and engaging key constituents and participants that recognizes and supports differences among groups. The participants also agreed that there are few institutional means for community-based organizations or individual community members to participate fully in decision making, though one participant noted that the Promise Zone is conducting a participatory budgeting process in which community residents are selected as delegates. Community health data are publically available (e.g. CHNAs, Access to Care Report by the Regional Health Commission, Healthy Communities Institute dashboard), though the information is not always easy for community members to access or understand.

EPHS 4 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• LPHS organizations have opportunities and ability to collaborate and partner with other organizations.
• The current efforts of broad-based community organizations are strong (e.g. Ready by 21, Flourish – Generate Health).

Weaknesses
• Lack of representation from: emergency preparedness, elected officials, community members, neighborhood organizations, civic organizations, transportation, police, faith groups, grass roots organizations.
• LPHS identifies issues based on quantitative data but we do not always understand the "why" behind issues.
• Lack of process for identifying and updating information for constituents and stakeholders.
• Lack of accomplishment or action with partners.
• Lack of monitoring and evaluation of a broad-based community health improvement committee.
• Need for buy-in and scalability of health improvement activities.

Short-Term Opportunities
• Learn about the community from a historical perspective and their experience with health in the past. Identify trusted community members.
• Make coalitions meetings more accessible by reducing use of jargon and hosting at alternative locations and times.
• Set clear expectations (e.g. frequency of participation) and guidelines by creating coalition charters.
• Give incentives (e.g. monetary, food, daycare) to community members to participate in coalitions.
• Explain to non-traditional partners why they should participate in coalitions.
• Identify goal or purpose of initiative, and identify constituents to include based on the goal.
• Coordinate with rural health organizations.
• Conduct informal meetings between grass roots organizations to strategize; examine how their activities might intersect with public health.
• Share data with other organizations and sectors (e.g. transportation) to tell a more compelling story and advocate better at the policy level.
• Define "broad-based community health improvement committee."

Long-Term Opportunities
• Scale the CHW program.
• Develop a system or infrastructure for identifying appropriate constituents and decision makers and keep their information updated.
• Align partners and organizations with like goals and missions.
• Align funders and organizations with similar goals and missions.
• Improve fragmented partnerships by focusing on social determinants and policy.
• Invite the right mix of people from various organizational levels – including decision makers.
• Build relationships and community member capacity through partnerships (e.g. project management).

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

To assess performance for Essential Public Health Service 5, participants were asked to address two key questions:

What local policies in both the government and private sector promote health in our community? How well are we setting healthy local policies?

Developing policies and plans that support individual and community health efforts encompasses the following:

- Leadership development at all levels of public health.
- Systematic community-level and state-level planning for health improvement in all jurisdictions.
- Development and tracking of measurable health objectives from the community health plan as a part of continuous quality improvement strategy plan.
- Joint evaluation with the medical healthcare system to define consistent policy regarding prevention and treatment services.
- Development of policy and legislation to guide the practice of public health.

EPHS 5 Group Composition

Partners who gathered to discuss the performance of the local public health system in developing policies and plans that support individual and community health efforts included:

#	Organization Type
1	City and county governmental agencies
2	Community based organizations
1	Environmental health agencies
1	Foundations
1	Health service providers
1	Healthcare systems
1	Health-related coalition leaders
1	Hospitals
1	Non-profit organizations/advocacy groups

#	Organization Type
1	Professional associations
1	Public health laboratories
3	Public safety and emergency response organizations
1	Substance abuse or mental health organizations
4	The local health department or other governmental public health agency
1	Waste management facilities

EPHS 5 Model Standard Scores

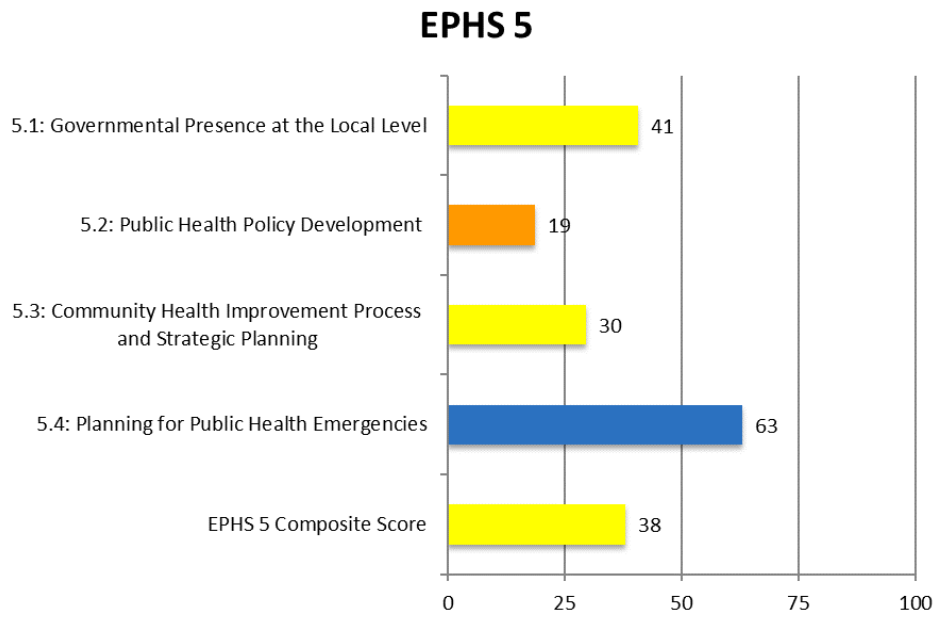
EPHS 5. Develop Policies and Plans that Support Individual Community Health Efforts			
The LPHS includes a local health department (which could also be another governmental entity dedicated to public health). The LPHS works with the community to make sure a strong local health department exists and that it is doing its part in providing 10 Essential Public Health Services. The local health department may be a regional health agency with more than one local area (e.g., city, county, etc.) under its jurisdiction. The local health department is accredited through the Public Health Accreditation Board's (PHAB's) voluntary, national public health department accreditation program.			
5.1.1	Support the work of the local health department (or other governmental local public health entity) to make sure the 10 Essential Public Health Services are provided		46
5.1.2	See that the local health department is accredited through the PHAB's voluntary, national public health department accreditation program		63
5.1.3	Ensure that the local health department has enough resources to do its part in providing essential public health services		13
5.1	Governmental Presence at the Local Level	MODERATE	41
The LPHS develops policies that will prevent, protect, or promote the public's health. Public health problems, possible solutions, and community values are used to inform the policies and any proposed actions, which may include new laws or changes to existing laws. Additionally, current or proposed policies that have the potential to affect the public's health are carefully reviewed for consistency with public health policy through health impact assessments (HIAs). The LPHS and its ability to make informed decisions are strengthened by community member input. The LPHS, together with community members, works to identify gaps in current policies and needs for new policies to improve the public's health. The LPHS educates the community about policies to improve public health and serves as a resource to elected officials who establish and maintain public health policies.			
5.2.1	Contribute to public health policies by engaging in activities that inform the policy development process		38
5.2.2	Alert policymakers and the community of the possible public health effects (both intended and unintended) from current and/or proposed policies		13
5.2.3	Review existing policies at least every three to five years		5
5.2	Public Health Policy Development	MINIMAL	19
The LPHS seeks to improve community health by looking at it from many sides, such as environmental health, healthcare services, business, economic, housing, land use, health equity, and other concerns that affect public health. The LPHS leads a community-wide effort to improve community health by gathering information on health problems, identifying the community's strengths and weaknesses, setting goals, and increasing overall awareness of and interest in improving the health of the community. This community health improvement process provides ways to develop a community-owned community health improvement plan (CHIP) that will lead to a healthier community. With the community health improvement effort in mind, each organization in the LPHS makes an effort to include strategies related to community health improvement goals in their own organizational strategic plans.			
5.3.1	Establish a CHIP, with broad-based diverse participation, that uses information from the CHA, including the perceptions of community members		38
5.3.2	Develop strategies to achieve community health improvement objectives, including a description of organizations accountable for specific steps		38
5.3.3	Connect organizational strategic plans with the CHIP		13
5.3	Community Health Improvement Process and Strategic Planning	MODERATE	30

(continued on next page)

The LPHS adopts an emergency preparedness and response plan that describes what each organization in the system should be ready to do in a public health emergency. The plan describes community interventions necessary to prepare, mitigate, respond, and recover from all types of emergencies, including both natural and intentional disasters. The plan also looks at challenges of possible events, such as biological, chemical, or nuclear events. Practicing for possible events takes place through regular exercises or drills. A workgroup sees that the necessary organizations and resources are included in the planning and practicing for all types of emergencies. The workgroup uses national standards (e.g., CDC's Public Health Emergency Preparedness Capabilities) to advance local preparedness planning efforts.			
5.4.1	Support a workgroup to develop and maintain emergency preparedness and response plans		63
5.4.2	Develop an emergency preparedness and response plan that defines when it would be used, who would do what tasks, what standard operating procedures would be put in place, and what alert and evacuation protocols would be followed		63
5.4.3	Test the plan through regular drills and revise the plan as needed, at least every two years		63
5.4	Planning for Public Health Emergencies	SIGNIFICANT	63

EPHS 5 Discussion Summary

Participants in EPHS 5 explored public health planning and policy development in St. Louis. Overall performance for EPHS 5 was scored **moderate** in St. Louis and ranked fifth out of the 10 EPHSs. The four Model Standards for EPHS 5 were scored from minimal to significant.



The health departments are both pursuing PHAB accreditation and have good support for this process. However, funding cuts are making it increasingly difficult for LPHS partners to deliver the 10 essential services. Participants named several local and state policy and program successes as evidence of collaboration at multiple system levels. An area of improvement would be to expand the understanding of public health to include non-traditional sectors. The city and county health departments are using the MAPP process for their joint CHA and CHIP, though participants noted that sometimes the process can be inflexible for meeting community needs. The group agreed that the LPHS excels at assessment and planning but has room for improvement in the implementation phase. The LPHS has good overall performance in emergency preparedness planning; expanding community involvement in planning and drills is an area of opportunity. Participants remarked that community members do not have a substantive role in decision-making and that a health equity lens needs to be applied to how organizations are brought to the table.

Model Standard 5.1, Governmental Presence at the Local Level, discusses how the LPHS works to provide resources for local health departments and supports the voluntary accreditation of health departments through the Public Health Accreditation Board (PHAB). Participants scored the Performance Measures from minimal to significant, resulting in a composite Model Standard score of moderate.

The local health departments document their many legal responsibilities through city and county charters and codes that cover a variety of enforcement activities. These charters and codes are available online. The group reported that the health departments frequently access legal counsel to ensure policies are developed properly.

The health departments assess their function against national standards for public health departments as defined by PHAB. Both the city and county health departments are currently pursuing PHAB accreditation and both are in the action plan phase. Many partners have contributed to the city and county accreditation process by participating in site visits, governance, and coalitions, for example. The city and county health departments are actively documenting the meetings of their assessment and planning advisory group (the Community Health Advisory Team, or CHAT), which has met monthly since January 2017 to guide the development of the new CHA and CHIP. The respondents noted that the health departments could do a better job communicating to their partners about the accreditation process and documenting how they meet PHAB standards.

Participants discussed how the health departments collaborate with partners to help deliver the 10 essential services. Partners contribute by participating on coalitions, providing data or analysis, and being direct service providers, among many other activities. The group noted that the health departments are getting better at cross-agency partnerships. Participants acknowledged there are good relationships between local organizations and the city and county, but noted that communication could be improved so that local organizations have a better understanding of the scope of the 10 essential services and how they can contribute to their delivery.

The group discussed how inadequate funding is making it increasingly difficult for LPHS organizations to provide the 10 essential services. Participants reported that Missouri has the lowest public health funding in the country, and St. Louis City and County receive a small portion this state funding; as a result, much of the funding for the 10 essential services comes from local sources. LPHS activity is often limited by the availability of grant funding. Respondents noted that the LPHS's reactive (rather than proactive) approach to funding limits efficiency and effectiveness. An area of improvement for the LPHS is for organizations to be explicit about where there are critical funding gaps instead of lamenting the overall lack of funding for public health.

Respondents noted that public health is not at the forefront of public awareness unless there is a crisis. Therefore, when faced with a budget shortfall, public health services are often among the first to be cut. One way the health department has worked around budget cuts is to work with the state to take over certain enforcement activities in return for permit revenue that previously went to the state. In general, the group was concerned that budget cuts are making it more and more difficult for health departments to carry out even the most basic mandated functions to protect public health.

Model Standard 5.2, Public Health Policy Development, discussed how the LPHS contributes to new or modified public health policies, alerts policy makers and the community of possible health impacts from policies, and performs policy review. Participants scored the Performance Measures from low minimal to moderate, resulting in a composite Model Standard score of minimal.

The LPHS contributes to the development of public health policies in various ways. The health departments issue "epi briefs" (data briefs prepared by the epidemiological staff) to local policymakers. The briefs distill findings into a short report and analyze the significance of the data for local policy and legislation. The city health department also put together data papers for the mayoral candidates in 2017; the reports provided data and recommended action from a public health perspective. LPHS partners write letters to the state legislature and testify at hearings in Jefferson City. Often the health departments work with various LPHS partners to bring the data together and communicate recommendations to policymakers. Sometimes LPHS coalitions help write new legislation. There is room for improvement for LPHS partners to engage with policymakers about changing existing policies that are not effective.

Respondents noted that the local public health agencies can provide some guidance and regulatory authority independent of policymakers and elected officials. The local health department has done focus groups with community members and service providers to get input on local ordinances and policies; examples included discussions with restaurant owners on special process food regulations and discussions with homeless individuals and service providers about bed bugs in homeless shelters. The city health department has started reviewing internal policies to address equity in services and has implemented racial equity training for staff.

Participants reported that the county and city were able to pass Tobacco 21 (T-21), which restricts tobacco sales to those aged 21 or older. The LPHS has also contributed to policy development around the Prescription Drug Monitoring Program (PDMP), both locally and across the state. The participants offered T-21 and PDMP as examples of how LPHS partners work together and assume various advocacy roles at multiple levels to achieve large-scale policy change. However, the respondents suggested there needs to be far more advocacy work at the community level (by partners beyond the health department) in order to get real buy-in for policy, instead of simply assuming what the community needs – the example given was regarding an urban agriculture bill.

Participants noted that a narrow view of public health can impede policy change (e.g. gun violence as a public health issue). There are initiatives to expand the understanding of public health across sectors; one example was the 2017 American Public Health Association (APHA) Annual Meeting about the intersection between climate change and health. The group noted that the *Forward Through Ferguson* report and FSOA has generated local momentum on issues that were previously considered outside the realm of public health.

The LPHS does not conduct Health Impact Assessments (HIAs); this is an area of opportunity for the LPHS. Another area of opportunity is to more clearly define what is meant by "community," "community values," and "collaboration," and to consider how the language used in public health settings (including this assessment) can perpetuate disparities. LPHS partners also need to be clearer when discussing "programs" versus "policies" and have common understanding of their distinct differences.

Model Standard 5.3, Community Health Improvement Process and Strategic Planning, looks at LPHS work to establish a Community Health Improvement Plan (CHIP), develop strategies to achieve CHIP objectives, and connect organizational strategic plans to the CHIP. Participants scored the Performance Measures from minimal to moderate, resulting in a composite Model Standard score of low moderate.

The city and county health departments are using the MAPP process for their joint CHA and CHIP. 200+ organizations are involved, though respondents wished to see more broad-based and diverse community member participation. Using the MAPP process, LPHS partners are conducting targeted community focus groups to obtain qualitative data, building an online dashboard to display community health indicators, and conducting the LPHSA and FOCA (Forces of Change Assessment), among other activities. Later, the LPHS will develop action teams to address priorities identified by the community. The health departments both used a similar process for their last CHA and CHIP and both departments are tracking the CHIP priorities from 5 years ago. An area of improvement is to adequately identify and document assets and resources in the community during the CHA/CHIP development so that these resources can be used during the implementation phase. An additional area of improvement is to improve communication between the health department and the implementation partners, especially when CHIP initiatives take off and start to operate on their own (examples included the HEAL Partnership and the Healthy Living Coalition). The participants wanted to see a more direct link between the new initiatives and the original CHIP.

The health departments are working to align their CHA and CHIP timelines (required every 3-5 years) with the hospitals' Community Health Needs Assessment (CHNA) timelines (required every 3 years). A regional steering committee comprised of the health departments, health systems, hospitals, Federally Qualified Health Centers (FQHCs), and other stakeholders has been created to align goals and guide implementation of shared strategies from the CHIP and CHNAs. The health departments reported that they are not involved in the development or implementation of the State Health Improvement Plan (SHIP); the extent of involvement was to show which local priorities aligned with state priorities once the SHIP was completed.

The group agreed that the LPHS excels at assessment and planning but has room for improvement in the implementation phases, including not replicating existing work in the LPHS; having the right people at the table; and evaluating, documenting, and sustaining implementation. The health departments reported on lessons learned from the last CHIP. The city health department noted that they did not have adequate staff to properly support CHIP implementation. The county health department remarked on the difficulty of identifying

specific, measurable outcomes, as well as identifying partners who were willing to own the strategies. An opportunity for the LPHS is to ensure that strategies do not get incorporated into the CHIP unless there is ownership.

Model Standard 5.4, Planning for Public Health Emergencies, describes how the LPHS supports workgroups to develop and maintain preparedness and response plans with clearly defined protocols, and tests the plans through regular drills. Participants scored all Performance Measures as significant, resulting in a composite Model Standard score of significant.

Participants identified several organizations that participate in a task force of community partners to develop and maintain local and regional emergency preparedness and response plans, including the health departments, the EMA, and the St. Louis Area Regional Response System (STARRS). Participants reported that the St. Louis Metro and the university systems have robust emergency preparedness plans, but primary and secondary school plans need improvement. The participants noted that there are new Centers for Medicare and Medicaid Services (CMS) rules for emergency preparedness planning that will affect a wider array of agencies and providers (e.g. durable medical equipment companies, home health agencies, pharmacists), which will necessitate better collaboration in this area. One respondent noted that the U.S. Department of Health and Human Services (HHS) Public Health Emergency Preparedness (PHEP) grant and the Hospital Preparedness Program (HPP) grant timelines are not completely aligned, which may impact coordination between public health agencies and hospitals. The group agreed that St. Louis, Kansas City, and Green County have established strong systems for regional emergency preparedness communication, however, there is still room for improvement for better integration of regional plans and formalizing partnerships across Missouri and across state lines.

The participants reported that the All-Hazards Emergency Preparedness and Response Plans are reviewed and revised regularly. After emergency events, the lessons learned and findings are integrated into the plan, and all changes to the plan must be clearly documented. The LPHS is working to increase standardization of plans across the region. Emergency preparedness representatives confirmed that LPHS emergency plans follow national standards. Respondents stated that LPHS partners practice their plans through joint drills and exercises and then evaluate performance. The LPHS performs one full-scale exercise every five years. The group noted that emergency preparedness grants require that the LPHS attend to at-risk populations during emergencies.

Emergency preparedness planning with primary, urgent, walk-in, and home care providers that are not part of a larger healthcare system was identified as a gap for the LPHS. These (oftentimes private) entities are part of a new model of healthcare and are not subject to the same regulations. However, participants recognize their critical role in emergency preparedness (for example, in antibiotic stewardship) and suggested strengthening relationships with these entities. Another area of weakness is the system of patient tracking during emergencies. An area of improvement would be better communication about emergency planning with the general public, particularly making people aware of what happens before, during, and after an

emergency. Including more community members in drills and system tests would be beneficial, though respondents noted that it is sometimes difficult to get volunteers.

EPHS 5 Health Equity Measures

EPHS 5 Health Equity Measures			
This question examines whether community organizations and individuals have a substantive role in deciding policies, procedures, rules, and practices that govern community health efforts. At what level does the LPHS…			
5A	Ensure that community-based organizations and individual community members have a substantive role in deciding what policies, procedures, rules, and practices govern community heath efforts?		13
HE 5	Community Participation in Policy Development	MINIMAL	13

The participants scored Health Equity Measure 5A as minimal. The group agreed that there is a gap in terms of having community members at the table, versus community-based organizations. Participants remarked that community members do not have a substantive role in decision-making; there is a lot of inclusion in the form of tokenism, but less often are key decisions made by the community itself. Further, the LPHS needs to apply a health equity lens to understand which organizations are at the table, and which are not.

The group noted that the health equity questions need to be better integrated into the discussion of the model standards; the fact that the questions are provided in a supplement make it appear to be an afterthought instead of a framework for the assessment. Respondents discussed how environmental policy can often have disparate impact on vulnerable communities and that the LPHS needs to directly address environmental racism.

EPHS 5 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• There are a lot of partners at the table.
• Collaboration between the city and county is significant.
• Build off data we have (e.g. *Forward Through Ferguson* report, FSOA) for policy change.
• Organizations build partnerships regardless of the scope of policy.
• The LPHS is willing to take on policy reforms.
• ThinkHealthSTL.org website is a good resource for data.
• City and county are working together on the CHA together.
• The LPHS is identifying and building on lessons learned in the last round and this round of CHA/CHIP.
• St. Louis, Springfield Greene, and Kansas City have good communication lines for emergency planning.
• Health departments are partnering with hospitals and other community partners on emergency preparedness exercises.

Weaknesses
• Reactive versus proactive funding in the LPHS.
• The LPHS has a shortage of resources (e.g. funding, workforce).
• Policy change takes time.
• Lack of communication and dissemination to those outside public health.
• Limitations and restrictions on hiring for city (e.g. salaries, residency requirements).
• Lack of capacity to engage in policy outside of the public health sector; lack of subject matter expertise in topics like transportation or housing.
• No LPHS voice in the SHIP.
• Reliance on agencies versus individuals; institutional collaboration is significant but we need more community resident participation in CHIP.
• Little flexibility with parts of the CHA/CHIP process; need to be flexible to engage and meet community needs.
• Lack of funding for CHIP implementation.
• The LPHS needs better integration of emergency plans across regions and across state.
• Lack of emergency preparedness staff.
• Gaps in emergency preparedness with providers that fall outside health care systems (e.g. dialysis centers, long-term care facilities, walk-in clinics). Need relationships with these entities.
• No effective system of patient tracking during emergencies.

Short-Term Opportunities
• Implement system to examine equity needs across city and county.
• Educate workforce on how to conduct HIAs.
• Establish process to review existing policies every 3-5 years; process must include health equity analysis and engage community partners in the process.
• Engage community now in policy development.
• Use technology in ways we have not used before.
• Identify and document assets and resources to leverage for CHIP implementation.
• Identify ownership for CHIP strategies.
• Advocate for LPHS involvement in the SHIP.
• CMS rules expand emergency preparedness requirements to additional providers in the LPHS.
• Improve community engagement in emergency preparedness planning and drills.
• Connect with 100 Resilient Cities effort.
• Funding opportunities are available to work on system changes.
• We are ripe/ready for policy change – we have the "why" through the *Forward Through Ferguson* report and FSOA report.

Long-Term Opportunities
• Review workforce restrictions and hiring limitations in the LPHS.
• Improve communication with those outside public sector.
• Conduct HIAs.
• Continue policy reviews regularly.
• Institute community presence as part of policy development procedures; give community primary authority and compensate accordingly.
• Evaluate the CHIP implementation.
• Evaluate the effectiveness and impact of the collaborative CHA/CHIP.
• Review Census 2020 population changes.
• Include health equity in the conversation – not as an afterthought.

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

To assess performance for Essential Public Health Service 6, participants were asked to address the key question:

When we enforce health regulations are we technically competent, fair, and effective?

Enforcing laws and regulations that protect health and ensure safety encompasses the following:

- Enforcement of sanitary codes, especially in the food industry.
- Protection of drinking water supplies.
- Enforcement of clean air standards.
- Animal control activities
- Follow up of hazards, preventable injuries, and explores regulated disease identified in occupational and community settings.
- Monitoring quality of medical services (e.g. laboratories, nursing homes, and home healthcare providers.).
- Review of new drug, biologic, and medical device applications.

EPHS 6 Group Composition

Partners who gathered to discuss the performance of the local public health system in enforcing laws and regulations that protect health and ensure safety included:

#	Organization Type
1	City and county governmental agencies
2	Community based organizations
1	Environmental health agencies
1	Foundations
1	Health service providers
1	Healthcare systems
1	Health-related coalition leaders
1	Hospitals
1	Non-profit organizations/advocacy groups

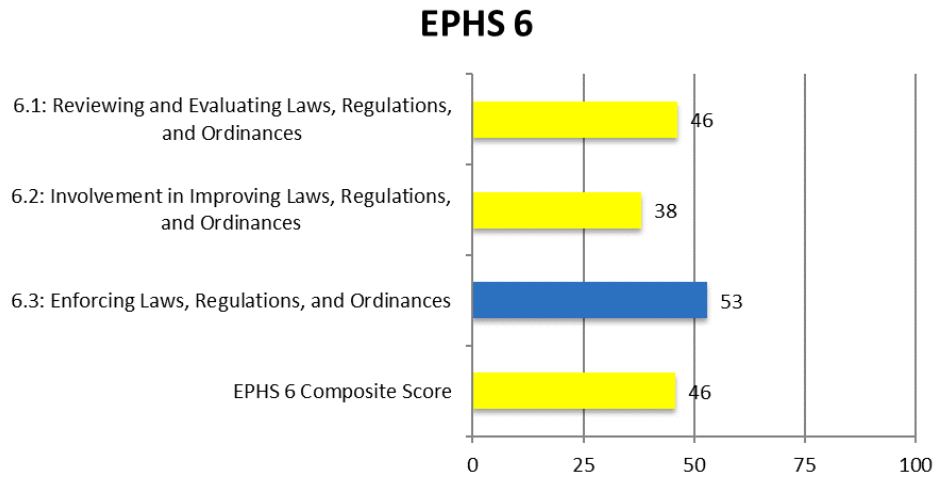
#	Organization Type
1	Professional associations
1	Public health laboratories
3	Public safety and emergency response organizations
1	Substance abuse or mental health organizations
4	The local health department or other governmental public health agency
1	Waste management facilities

EPHS 6 Model Standard Scores

EPHS 6. Enforce Laws and Regulations that Protect Health and Ensure Safety			
The LPHS reviews existing laws, regulations, and ordinances related to public health, including laws that prevent health problems, promote, and protect public health. The LPHS looks at federal, state, and local laws to understand the authority provided to the system and the potential impact of laws, regulations, and ordinances on the health of the community. The LPHS also looks at any challenges involved in complying with laws, regulations, or ordinances, whether community members have any opinions or concerns, and whether any laws, regulations, or ordinances need to be updated.			
6.1.1	Identify public health issues that can be addressed through laws, regulations, or ordinances		46
6.1.2	Stay up-to-date with current laws, regulations, and ordinances that prevent health problems or that promote or protect public health on the federal, state, and local levels		63
6.1.3	Review existing public health laws, regulations, and ordinances at least once every three to five years		13
6.1.4	Have access to legal counsel for technical assistance when reviewing laws, regulations, or ordinances		63
6.1	Reviewing and Evaluating Laws, Regulations, and Ordinances	MODERATE	46
The LPHS works to change existing laws, regulations, or ordinances—or to create new ones—when they have determined that changes or additions would better prevent health problems or protect or promote public health. To promote public health, the LPHS helps to draft the new or revised legislation, regulations, or ordinances; takes part in public hearings; and talks with lawmakers and regulatory officials.			
6.2.1	Identify local public health issues that are inadequately addressed in existing laws, regulations, and ordinances		38
6.2.2	Participate in changing existing laws, regulations, and ordinances, and/or creating new laws, regulations, and ordinances to protect and promote public health		38
6.2.3	Provide technical assistance in drafting the language for proposed changes or new laws, regulations, and ordinances		38
6.2	Involvement in Improving Laws, Regulations, and Ordinances	MODERATE	38
The LPHS sees that public health laws, regulations, and ordinances are followed. The LPHS knows which governmental agency or other organization has the authority to enforce any given public health-related requirement within its community, supports all organizations tasked with enforcement responsibilities, and ensures that the enforcement is conducted within the law. The LPHS has sufficient authority to respond in an emergency event. The LPHS also makes sure that individuals and organizations understand the requirements of relevant laws, regulation, and ordinances. The LPHS communicates the reasons for legislation and the importance of compliance.			
6.3.1	Identify organizations that have the authority to enforce public health laws, regulations, and ordinances		63
6.3.2	Ensure that a local health department (or other governmental public health entity) has the authority to act in public health emergencies		63
6.3.3	Ensure that all enforcement activities related to public health codes are done within the law		63
6.3.4	Educate individuals and organizations about relevant laws, regulations, and ordinances		38
6.3.5	Evaluate how well local organizations comply with public health laws		38
6.3	Enforcing Laws, Regulations, and Ordinances	MODERATE	53

EPHS 6 Discussion Summary

EPHS 6 examines LPHS performance in evaluating, improving, and enforcing health and safety laws and regulations. Overall performance for EPHS 6 was scored **moderate** in St. Louis and ranked second out of the 10 EPHSs. The three Model Standards for EPHS 6 were scored from moderate to high moderate.



Participants identified several strengths for the LPHS in regulation and enforcement, including: knowledgeable staff; processes that rely on collaboration outside of the health departments; data-driven decision-making; training with stakeholders about what legislation asks of them; and regular input from community members through complaint systems. The LPHS is good at engaging stakeholders but struggles with capacity and resources to do engagement at all levels of the system. Communication is often limited outside of the typical public health partners. Areas of opportunity include: moving professional knowledge into accountable actions; building partnerships, especially around the social and structural determinants of health; providing the "why" behind regulation and enforcement activities by telling a compelling narrative; and addressing inequities directly.

Model Standard 6.1, Reviewing and Evaluating Laws, Regulations and Ordinances, emphasizes the impact of policies on the health of the public, and issues of compliance among community members. Participants scored the Performance Measures from minimal to significant, resulting in a composite Model Standard score of high moderate.

The group agreed that many public health areas can best be addressed through laws, regulations, and ordinances, including: food safety; air and water quality; quarantine and isolation; injury prevention; handling and disposal of toxic waste; day care centers and schools; housing and property maintenance; and sanitation. However, participants said there is not widespread agreement in the LPHS on this approach, especially outside of the public health sector. The group noted that public resistance to regulation in general can be a barrier; and even if a need is identified, creation or revision of laws and regulations is often dependent on a small window of political opportunity, rather than a strategic approach.

The LPHS regularly assesses compliance with public health laws, regulations, and ordinances; for example, the health departments examine the outcomes of inspections and identify which violations are occurring to understand where additional enforcement and/or education is needed. The city health department creates an environmental health report that contains data about compliance and key health issues. City residents can log complaints through the Citizen Service Bureau, which provides insight into code compliance. Not all compliance falls under the purview of the health departments, but rather a combination of LPHS organizations. For example, the environmental lab at the county health department tests drinking water for communicable diseases (e.g. e-coli), but the water division is responsible for compliance and regulation.

The health departments follow the model health code, and they are currently in the process of updating the code to U.S. Food and Drug Administration (FDA) standards. The health departments convene meetings with stakeholders to describe how the code changes will affect them. The respondents noted the health departments work to provide culturally competent assistance tailored to different stakeholders. Once the code is revised it goes through legal review and council review before adoption. The participants agreed that governmental entities within the LPHS have access to legal counsel to assist with the review of laws, regulations, and ordinances related to the public's health but noted that review of LPHS laws is fairly irregular and unstructured. The group also noted that politicians are often more willing to create new regulations than review existing regulations.

When state and federal regulatory agencies make changes, they communicate the changes to the LPHS. LPHS staff stay up to date with legal changes through professional associations and professional development (online, in person, and at conferences). The group reported that most environmental staff have local certifications and professional licensing that must be kept up to date, which requires continual training and professional development. In general, the group agreed that public health staff are knowledgeable and up-to-date on the latest regulations but those outside the public health sector may not be. In addition, some of the local written codes and ordinances need to be updated, but it is a slow process.

Model Standard 6.2, Involvement in Improving Laws, Regulations, and Ordinances, explores the extent to which the LPHS participates in advocating for the improvement or creation of policies that affect public health. The participants scored the all Performance Measures as moderate, resulting in a composite Model Standard score of moderate.

The participants identified several examples of local public health issues that are not adequately addressed through existing laws, regulations, and ordinances, including environmental issues (air quality, lead, chemical exposure, toxic sites); substance abuse (prescription drug and heroin abuse); urban agriculture; and tuberculosis. The local tuberculosis treatment centers were closed so tuberculosis patients are reportedly sent to North Carolina for treatment; the participants noted that there have been discussions lately in the LPHS about how to reinstate local tuberculosis treatment. Opioid abuse has been addressed through the

Good Samaritan Law, Narcan distribution, the Prescription Drug Monitoring Program (PDMP), and syringe exchanges, but the group noted these measures are inadequate for the scope of the problem. Sometimes older laws become obsolete or are not comprehensive enough for current practice. For example, the increasing popularity of urban agriculture (e.g. raising chickens) runs against current city health codes.

Participants reported that the health departments were instrumental in the hearings on opioid use and multiple LPHS organizations provided technical guidance and support for proposed opioid legislation. The group noted that it was more difficult to coordinate with hospital systems and pharmacy groups on the opioid issue than some other LPHS actors. Public health representatives are often not invited to the table for the development and revision of laws and regulations that fall outside the traditional scope of public health, especially laws that affect the social and structural determinants of health. An area of opportunity for the LPHS is to have public health representatives invited to these tables to share data, advocate, and build partnerships. One participant noted some traction in this area, in that health department representatives were invited by a legislator to testify at a public safety committee meeting in Jefferson City regarding violence in cities and trauma informed care. An area of opportunity for the LPHS is to obtain technical assistance and professional development to learn how to do Health In All Policies (HIAP) more effectively.

Model Standard 6.3, Enforcing Laws, Regulations, and Ordinances, explores LPHS performance in enforcing policies, including making sure community members are aware of relevant laws, regulations, and ordinances. Participants scored the Performance Measures from moderate to significant, resulting in a composite Model Standard score of high moderate.

The group agreed that the authority of the local health department is clear, however, resources to enforce are limited because direct services often get prioritized over enforcement activities. Another participant noted that public health laws are not respected in the same way that other areas of law are respected (e.g. criminal law). The LPHS provides information to the individuals and organizations that are required to comply with certain laws, regulations, or ordinances through outreach activities; for example, when a tobacco law exemption expired, health department staff went to businesses who were no longer exempt to inform them of the change.

The LPHS assesses compliance with varying frequency due to funding and capacity limitations; some assessment is complaint driven, while other regulations have funding mechanisms that provide for regular audits. The wide variety of businesses paired with the wide scope of regulation means the LPHS partners have difficulty with consistent enforcement across such a large area. However, the group agreed that the LPHS ensures that all enforcement activities related to public health codes are done within the law. Those responsible for enforcement activities are trained on compliance and enforcement through model training programs and continuing education. The food program at the health department utilizes a FDA model for training, continuing education, and auditing of their staff. Many public health staff pursue continuing education to maintain credentials.

EPHS 6 Health Equity Measures

EPHS 6 Health Equity Measures			
This question explores whether the LPHS identifies public health issues that have disproportionate impact and are not adequately addressed through existing laws and regulations. At what level does the LPHS…			
6A	Identify local public health issues that have a disproportionate impact on historically marginalized communities (that are not adequately addressed through existing laws, regulations, and ordinances)?		13
HE 6	Identify Issues with Disproportionate Impact on Marginalized Communities	MINIMAL	13

Participants scored Health Equity Measure 6A as minimal. The group agreed that the LPHS does a poor job identifying local public health issues that have a disproportionate impact on historically marginalized communities. There is much room for improvement for the LPHS to educate individuals and organizations about relevant laws, regulations, and ordinances, particularly with populations who experience health disparities.

EPHS 6 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• Public health workers take part in professional development and continuing education.
• Public health workers are up-to-date on the latest regulations and standards.
• The environmental code is continuously updated.
• LPHS regulation is data-driven.
• There is significant collaboration between city and county.
• There is great momentum (with or without resources) around issues where LPHS partners show passion (e.g. PDMP).
• Certain stakeholders are well trained in laws and regulations.
• There are many opportunities to gather community input from the Citizen Service Bureau.

Weaknesses
• Local ordinances are not updated quickly enough.
• The LPHS lacks resources to review policies.
• It is unclear if public health comments on laws and regulations are given attention and/or consideration by lawmakers.
• Lack of funding for improvement of regulations, laws, and ordinances.
• Policy is based on crisis (reactionary).
• Overall lack of resources for compliance.
• Scale of enforcement is very large.
• Enforcement is not at system level.

Short-Term Opportunities
• Use knowledge for action; if workforce and ordinances are up-to-date on regulations, then what is preventing better health outcomes (e.g. blood lead levels still unacceptably high)?
• Identify laws to review with timelines, accountable entities, and resources; make ordinances agree with federal laws and standards.
• Get public health invited to tables it is not traditionally invited to. Be proactive about identifying tables where public health should have a seat.
• Include the human interest aspect in the quantitative data (the “so what”) to make it more approachable and relatable.
• The LPHS has a few examples where funding for compliance is built into the program; this could be used as a model.

- Improve knowledge about regulations and how they protect health, so more LPHS organizations and individuals can assist with enforcement.
- Improve messaging about laws and regulations, especially to populations that experience disparities.

Long-Term Opportunities

- Use knowledge for action; if workforce and ordinances are up-to-date on regulations, then what is preventing better health outcomes (e.g. blood lead levels still unacceptably high)?
- Include the human interest aspect in the quantitative data (the "so what") to make it more approachable and relatable.

Essential Public Health Service 7: Link People to Needed Personal Health Services and Assure the Provision of Healthcare When Otherwise Unavailable

To assess performance for Essential Public Health Service 7, participants were asked to address the key question:

Are people in our community receiving the health services they need?

Linking people to needed personal health services and ensuring the provision of health care when otherwise unavailable (sometimes referred to as outreach or enabling services) encompasses the following:

- Assurance of effective entry for socially disadvantaged people into a coordinated system of clinical care.
- Culturally and linguistically appropriate materials and staff to ensure linkage to services for special population groups.
- Ongoing "care management"
- Transportation services
- Targeted health education/promotion/disease prevention to high-risk population groups

EPHS 7 Group Composition

Partners who gathered to discuss the performance of the local public health system in linking people to needed personal health services and assuring the provision of healthcare when otherwise unavailable included:

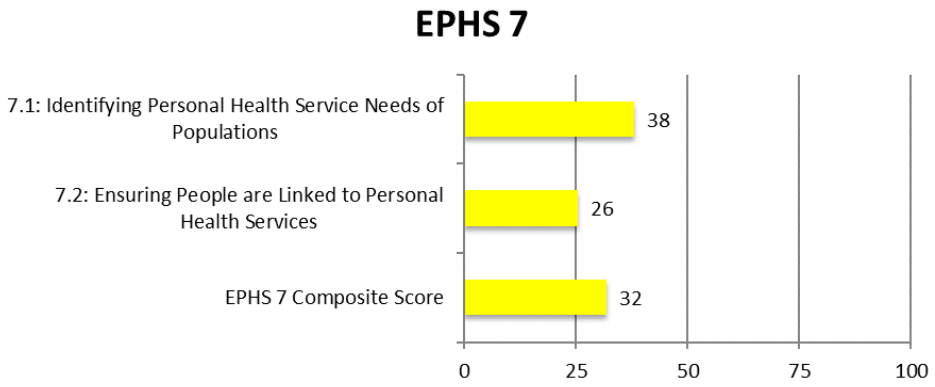
#	Organization Type
1	Economists
1	Health officer/public health director
1	Health-related coalition leaders
3	Hospitals
1	Non-profit organizations/advocacy groups
2	Primary care clinics, community health centers, FQHCs
1	Professional associations
1	Public and private schools
2	Social service providers
1	Substance abuse or mental health organizations
3	The local health departments
1	Universities, colleges, and academic institutions

EPHS 7 Model Standard Scores

EPHS 7. Link People to Needed Personal Health Services and Assure the Provision of Health Care When Otherwise Unavailable			
The LPHS identifies the personal health service needs of the community and identifies the barriers to receiving these services, especially among particular groups that may have particular difficulty accessing personal health services. The LPHS has defined roles and responsibilities for the local health department (or other governmental public health entity) and other partners (e.g., hospitals, managed care providers, and other community health agencies) in relation to overcoming these barriers and providing services.			
7.1.1	Identify groups of people in the community who have trouble accessing or connecting to personal health services		63
7.1.2	Identify all personal health service needs and unmet needs throughout the community		38
7.1.3	Defines partner roles and responsibilities to respond to the unmet needs of the community		13
7.1.4	Understand the reasons that people do not get the care they need?		38
7.1	Identifying Personal Health Service Needs of Populations	MODERATE	38
The LPHS partners work together to meet the diverse needs of all populations. Partners see that persons are signed up for all benefits available to them and know where to refer people with unmet personal health service needs. The LPHS develops working relationships between public health, primary care, oral health, social services, mental health systems, and organizations that are not traditionally part of the personal health service system, such as housing, transportation, and grassroots organizations.			
7.2.1	Connect or link people to organizations that can provide the personal health services they may need		38
7.2.2	Help people access personal health services in a way that takes into account the unique needs of different populations		13
7.2.3	Help people sign up for public benefits that are available to them (e.g., Medicaid or medical and prescription assistance programs)		38
7.2.4	Coordinate the delivery of personal health and social services so that everyone in the community has access to the care they need		13
7.2	Ensuring People Are Linked to Personal Health Services	MODERATE	26

EPHS 7 Discussion Summary

Participants in EPHS 7 explored LPHS performance in connecting community members to the health services they need. Overall performance for EPHS 7 was scored **moderate** in St. Louis and ranked sixth out of the 10 EPHSs. The two Model Standards for EPHS 7 were scored from low moderate to moderate.



Participants reported that the LPHS has robust assessment and research activity; however, the assessments are not well coordinated and the LPHS is not effectively translating the data into action. Other weaknesses for the LPHS included: lack of trust from marginalized groups and difficulty linking certain populations to health services; poor access to services because of transportation and language barriers; and lack of mental health service capacity. The participants identified several opportunities for the LPHS, including working with funders to incentivize collaboration; shifting the notion of "inclusion" from a one-time event to on-going involvement; and connecting "boots on the ground" with data and assessments to improve outreach and linkage to health services

Model standard 7.1, Identifying Personal Health Service Needs of Populations, looks at the ability of the LPHS to identify groups in the community who have trouble accessing personal health services and to define responsibilities for partners to respond to the unmet needs of the community. Participants scored the Performance Measures from minimal to significant, resulting in a composite Model Standard score of moderate.

The LPHS assesses many types of personal health and auxiliary services, including primary medical care, emergency care, mental health services, wait times, satisfaction with services, and transportation, among others.

The participants described a robust assessment infrastructure in the LPHS to understand which health services are used by populations who may experience barriers to care. The Integrated Health Network, in partnership with the Regional Health Commission and the Behavioral Health Network, produces an annual regional access to care report. Some service providers perform regular follow-ups with patients to assess access to care. To assess the needs of those who are not already in the system, the hospitals conduct CHNAs and the health departments conduct

CHAs. Other reports include *Understanding Our Needs*, FSOA, and the Missouri Foundation for Health reports on system barriers for LGBT populations. Gateway to Better Health conducts a phone survey of the uninsured population.

These assessments take into account many populations who may experience barriers to accessing care, including children, persons over 65, persons with low income, persons with cultural or language barriers, racial or ethnic minorities, uninsured persons, and LGBT individuals, among others. The participants noted that assessment data are disaggregated by race (black and white) but the LPHS needs to expand beyond this binary. In addition, the group noted that sex is measured (male and female) but non-binary gender is often not. Respondents said that data by age group can be difficult to disaggregate beyond 0-18, 19-64, and 65+. Participants reported that language barriers and lack of interpreters has impeded collection of information from refugees and immigrants in the LPHS.

Other weaknesses of the LPHS in identifying health service needs include lack of trust from vulnerable groups; differing data quality from LPHS organizations; and lack of defined roles to respond to the unmet needs of the community. While respondents agreed that there are participatory roles (e.g. FQHC boards or the HIV/AIDS planning council) for persons who come from communities that face barriers to accessing care, more engagement, inclusion, and shared-decision making should occur. Overall the group agreed that more assessment is not needed, but the LPHS needs to improve quality of assessment with certain populations and to better disseminate the information that is gathered. Additionally, the participants agreed that the LPHS has some individuals and organizations that understand the reasons why people do not get the care they need, but the system could do a better job of promoting this understanding across individuals and systems.

Model Standard 7.2, Ensuring People Are Linked to Personal Health Services, discusses how well the LPHS coordinates delivery of personal health services and social services to ensure everyone has access to the care they need. The participants scored the Performance Measures from minimal to moderate, resulting in a composite Model Standard score of low moderate.

The group described several organizations in the LPHS that coordinate the delivery of personal health and social services, including Integrated Health Network's Community Referral Coordinator Program, which coordinates between hospitals and community health centers; Behavioral Health Response, which coordinates mental health services; and Casa de Salud, which helps immigrants and refugees navigate the healthcare system. In general, the respondents agreed that the LPHS does a good job of providing referrals for people who are in the system (those who "walked through the door"); however, there are gaps for those outside the system. Participants agreed that sometimes case management or other services are pushed upon patients, and they can become overwhelmed. The key is to make the information or services relevant to the patient.

Participants noted several barriers to providing services and to ensuring continuity of services, including language, mistrust, lack of awareness, and lack of engagement. When a patient that

speaks limited or no English is referred to another agency, the referring party may not know if there is language assistance available at the other agency. In terms of awareness, people cannot obtain services if they do not know the services exist. The group indicated that health fairs are a means for people in the community to have face to face interaction with representatives from healthcare, which can both build relationships (trust) and increase awareness of services. Respondents noted that CHWs and coaches can help increase engagement with certain populations. The participants described patient engagement as twofold: engagement with the system and engagement with their own health. Generally, there tend to be fewer barriers to care for children than adults because of state policies, although the group indicated that the LPHS has improved linkages for certain adult populations, such as pregnant women.

A particular area of concern for the group was the provision mental health services in the LPHS. On one end, participants recognize that stigma surrounding mental health heavily influences whether or not patients from certain populations choose to seek mental health services or follow through on referrals for such services. Mistrust of institutions also factors into mental health service access among vulnerable populations. On the other end, the group reported that LPHS capacity for mental health treatment has declined substantially, so there is often nowhere to send patients even if a mental health need is identified.

Organizations in the LPHS that help people sign up for public benefits include hospitals, legal services, International Institute, and Cover Missouri (a project of the Missouri Foundation for health), among others. Although Performance Measure 7.2.3 was scored moderate, the participants said it was important to distinguish between LPHS performance at linking people inside the system (significant level) versus those outside the system (minimal level) to public benefits.

EPHS 7 Health Equity Measures

EPHS 7 Health Equity Measures			
These questions explore barriers for subpopulations, the influence of social injustices on access to personal health services, and inequitable distribution of resources. At what level does the LPHS…			
7A	Identify any populations that may experience barriers to personal health services based on factors such as on age, education level, income, language barriers, race or ethnicity, disability, mental illness, access to insurance, sexual orientation and gender identity, and additional identities outlined in Model Standard 7.1?		38
7B	Identify the means through which historical social injustices specific to the jurisdiction (e.g., the inequitable distribution health services and transportation resources) may influence access to personal health services?		13
7C	Work to influence laws, policies, and practices that maintain inequitable distributions of resources that may influence access to personal health services?		38
HE 7	Inequitable Access to Personal Health Services	MODERATE	30

The participants scored Health Equity Measures 7A-7C from minimal to moderate, resulting in a composite Health Equity score of low moderate. The group agreed that the LPHS does a good job of identifying and assessing populations that experience barriers to personal health services but is not able to stratify the data to the desired levels. The group described LPHS efforts to change policies that maintain inequities, including Gateway to Better Health, FSOA, and engaging in statewide debate over Medicaid policy.

EPHS 7 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths

• Strong assessment and reporting:
  o FSOA
  o Integrated Health Network, Regional Health Commission, Behavioral Health Network annual access to care report
  o Gateway to Better Health telephone survey of uninsured population
  o Missouri Foundation for Health research into barriers for LGBTQ population
  o CHNA and CHA

• Patients who are in the system (accessing care) are linked to care.

Weaknesses
• Assessments are not disseminated to the people who actually need it.
• Assessments are not coordinated.
• Barriers to access include: language; mistrust from vulnerable groups; lack of awareness; lack of engagement; and transportation.
• Lack of capacity, especially for mental health treatment.
• Patients who are not in the system (not accessing care) are not linked to care.

Short-Term Opportunities
• Increase inclusion of community partners – integrate and engage them as consistent players. Shift from one-time inclusion to system-wide, repetitive inclusion.
• Reduce duplication of assessments; align stakeholders' timelines.
• Work with funders to prevent duplication; better incentivize collaboration in grant rewards.
• Align the Missouri Foundation for Health access project to the regional plan.
• Connect "boots on the ground" to data.
• Public health should be leading, educating, aligning, and driving.
• Define roles and responsibilities, and hold leadership accountable for collaboration.

Long-Term Opportunities
• Coordinate public benefit access through non-healthcare systems that patients participate in (e.g. employers, faith organizations).
• Increase follow up from urgent care.
• Provide transportation to patients.
• Support schools of nursing to increase mental health capacity, e.g. mental health nurse practitioners.
• Increase minority/racial diversity in health care positions.

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

To assess performance for Essential Public Health Service 8, participants were asked to address two key questions:

Do we have a competent public health staff?

Ensuring a competent public and personal health care workforce encompasses the following:

- Education, training, and assessment of personnel (including volunteers and other lay community health workers) to meet community needs for public and personal health services.
- Efficient processes for licensure of professionals.
- Adoption of continuous quality improvement and lifelong learning programs.
- Active partnerships with professional training programs to ensure community-relevant learning experiences for all students.
- Continuing education in management and leadership development programs for those charged with administrative/executive roles.

EPHS 8 Group Composition

Partners who gathered to discuss the performance of the local public health system in assuring a competent public health and personal healthcare workforce included:

#	Organization Type
1	Health officer/public health director
1	Health service providers
1	Healthcare systems
1	Substance abuse or mental health organizations
3	The local health department or other governmental public health agency
5	Universities, colleges, and academic institutions

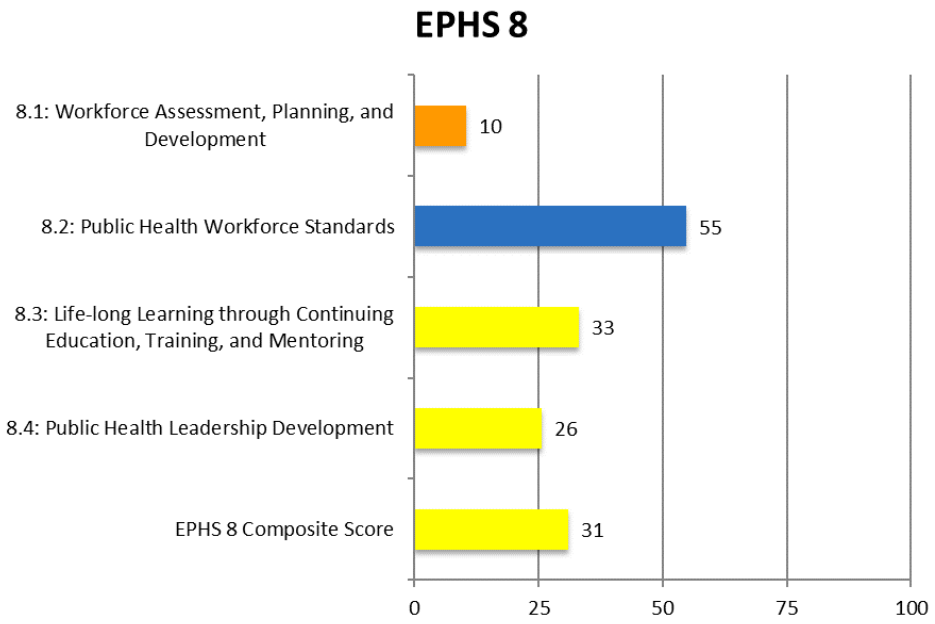
EPHS 8 Model Standard Scores

EPHS 8. Assure a Competent Public Health and Personal Health Care Workforce			
The LPHS assesses the local public health workforce—all who contribute to providing the 10 Essential Public Health Services for the community. Workforce assessment looks at what knowledge, skills, and abilities the local public health workforce needs and the numbers and kinds of jobs the system should have to adequately prevent health problems and protect and promote health in the community. The LPHS also looks at the training that the workforce needs to keep its knowledge, skills, and abilities up to date. After the workforce assessment determines the number and types of positions the local public health workforce should include, the LPHS identifies gaps and works on plans to fill those gaps.			
8.1.1	Complete a workforce assessment, a process to track the numbers and types of LPHS jobs—both public and private sector—and the associated knowledge, skills, and abilities required of the jobs		13
8.1.2	Review the information from the workforce assessment and use it to identify and address gaps in the LPHS workforce		13
8.1.3	Provide information from the workforce assessment to other community organizations and groups, including governing bodies and public and private agencies, for use in their organizational planning		5
8.1	Workforce Assessment, Planning, and Development	MINIMAL	10
The LPHS maintains standards to see that workforce members are qualified to do their jobs, with the certificates, licenses, and education that are required by law or by local, state, or federal guidance. Information about the knowledge, skills, and abilities that are needed to provide the 10 Essential Public Health Services are used in personnel systems, so that position descriptions, hiring, and performance evaluations of workers are based on public health competencies.			
8.2.1	Ensure that all members of the local public health workforce have the required certificates, licenses, and education needed to fulfill their job duties and comply with legal requirements		63
8.2.2	Develop and maintain job standards and position descriptions based in the core knowledge, skills, and abilities needed to provide the 10 Essential Public Health Services		38
8.2.3	Base the hiring and performance review of members of the public health workforce in public health competencies		63
8.2	Public Health Workforce Standards	SIGNIFICANT	55
The LPHS encourages lifelong learning for the local public health workforce. Both formal and informal opportunities in education and training are available to the workforce, including workshops, seminars, conferences, and online learning. Experienced staff persons are available to coach and advise newer employees. Interested workforce members have the chance to work with academic and research institutions, particularly those connected with schools of public health, public administration, and population health. As the academic community and the local public health workforce collaborate, the LPHS is strengthened. The LPHS trains its workforce to recognize and address the unique culture, language, and health literacy of diverse consumers and communities and to respect all members of the community. The LPHS also educates its workforce about the many factors that can influence health, including interpersonal relationships, social surroundings, physical environment, and individual characteristics (such as economic status, genetics, behavioral risk factors, and healthcare).			
8.3.1	Identify education and training needs and encourage the public health workforce to participate in available education and training		38
8.3.2	Provide ways for public health workers to develop core skills related to the 10 Essential Public Health Services		38
8.3.3	Develop incentives for workforce training, such as tuition reimbursement, time off for attending class, and pay increases		38
8.3.4	Create and support collaborations between organizations within the LPHS for training and education		38
8.3.5	Continually train the public health workforce to deliver services in a culturally competent manner and understand the social determinants of health		13
8.3	Life-Long Learning through Continuing Education, Training, and Mentoring	MODERATE	33

Leadership within the LPHS is demonstrated by organizations and individuals that are committed to improving the health of the community. Leaders work to continually develop the LPHS, create a shared vision of community health, find ways to achieve the vision, and ensure that local public health services are delivered. Leadership may come from the local health department, from other governmental agencies, non-profits, the private sector, or from several LPHS partners. The LPHS encourages the development of leaders that represent the diversity of the community and respect community values.			
8.4.1	Provide access to formal and informal leadership development opportunities for employees at all organizational levels		38
8.4.2	Create a shared vision of community health and the LPHS, welcoming all leaders and community members to work together		38
8.4.3	Ensure that organizations and individuals have opportunities to provide leadership in areas where they have knowledge, skills, or access to resources		13
8.4.4	Provide opportunities for the development of leaders who represent the diversity of the community		13
8.4	Public Health Leadership Development	MODERATE	26

EPHS 8 Discussion Summary

Participants in EPHS 8 discussed public health workforce development in the LPHS. Overall performance for EPHS 8 was scored **moderate** in St. Louis and ranked eighth out of the 10 EPHSs. The four Model Standards for EPHS 8 were scored from minimal to low significant.



The LPHS demonstrates good leadership; momentum for CHWs; and an increasingly collaborative environment for a shared vision. Weaknesses for the LPHS include a lack of diversity in the public health workforce; challenges with recruitment and retention due to more competitive private sector salaries; inadequate training opportunities; a lack of decision makers involved at all organizational levels; and no system-wide assessment of the public health workforce. The group identified several areas of opportunity, including: complete a system-wide workforce assessment; be intentional about health equity; partner with the St. Louis Community College to assess the public health workforce; increase education at the front of the public health pipeline; increase continuing education and professional development for existing workforce; and foster intentional connections between human resources departments and hiring directors.

Model Standard 8.1, Workforce Assessment, Planning, and Development, explores how well the LPHS is assessing its workforce as a system. Participants scored the Performance Measures from low minimal to minimal, resulting in a composite Model Standard score of minimal.

The group listed several organizations that conduct workforce assessments, including: St. Louis Regional Chamber, Promise Zone, Center for Clinical Excellence, St. Louis University, and St. Louis County. Participants noted that LPHS organizations have implemented plans for addressing gaps in the workforce, but the approaches are highly localized and specific to regions or agencies. A major weakness of the LPHS is the lack of regional or system-wide

workforce assessment and implementation. Respondents indicated that Washington University and St. Louis University will be important partners to fill this need. Workforce assessments use a combination of statewide and citywide metrics on health equity, implementation, evaluation, and capacity. Participants described efforts to ask LPHS employers what skills they need to fill positions and if they are satisfied with student training and preparation. The group emphasized that the LPHS must account for the true needs of the community in the preparation of students.

The group indicated that retention is a major problem in the LPHS; monetary compensation is far lower in the public than the private sector. Lack of a clear career path is a barrier for students to entering and staying in the public health field. The quality of the applicant pool has diminished because salaries and job descriptions have not been updated. Participants noted that FQHCs have had trouble maintaining a stable workforce. Some gaps identified for the LPHS include: students entering the workforce are not adequately prepared for data analysis; gaps in police social work; and SSM Health is concerned about the nursing shortage. Participants reported that the LPHS lacks diversity in its public health workforce; the lack of diversity creates linguistic barriers, and relying on interpretation services is difficult.

Local higher education institutions (Washington University, St. Louis University, Lindenwood) are an asset in terms of training for the regional workforce. Participants noted there are organizations that partner with school districts to bring high school students into the field (pipelines). It would be beneficial to initiate a partnership with the community colleges. The respondents agreed the LPHS needs to create more opportunities for training, certificate programs, and continuing education.

Model Standard 8.2, Public Health Workforce Standards, explores how the LPHS ensures that workforce members are qualified and that hiring and performance reviews are based on public health competencies. Participants scored the Performance Measures from moderate to significant, resulting in a composite Model Standard score of low significant.

Participants reported that guidelines, licensure, and certification in the LPHS are highly specialized and location specific. Organizations in the LPHS comply with requirements through annual performance evaluations and checking and maintaining certifications. Respondents noted that the city and county are similar in how they comply with requirements. Participants said that sometimes the best qualified applicants are not able to be hired or retained because of lack of certification and licensure. FSOA developed a framework for certification and what the LPHS needs to do to ensure strong healthcare workers are not forced out. The group agreed that human resources needs to improve written job standards and position descriptions to hire the correct people. All or most organizations in the LPHS conduct some form of annual performance evaluation. The city and county health departments each require an annual performance evaluation, and they have a separate evaluation for leadership.

Model Standard 8.3, Life-long Learning Through Continuing Education, Training, and Mentoring, reviews LPHS performance in identifying education and training needs, providing

incentives for workforce training, and creating collaborations between organizations for training and education.

The group agreed that the LPHS needs to formalize the interactions between staff of LPHS organizations and faculty from academic and research institutions, to create "academic public health departments." Most current interactions are not formal or institutionalized. The LPHS has valuable academic assets. Building stronger relationships with academic institutions is critical, and fills a need for LPHS organizations to access libraries, information, and support. Respondents suggested incentivizing deeper interaction and relationships. The county health department noted that it is difficult to develop personal relationships with Washington University because of the size of the institution, while St. Louis University is more approachable and has already established collaboration on workforce development, training, and partnership with county public health.

Organizations in the LPHS dedicate resources for training and education. Integrated Health Network works with medical school students, however a gap is that they do not focus on residency. St. Louis University is a site for chemical emergency training, however it is not widely publicized. When there is a big training opportunity in the LPHS, CBOs do participate, but there are many that are still unaware of such training. The group agreed an area of improvement is to establish stronger awareness and communication about these training resources. At Washington University Institute for Public Health, training is typically connected to the job function or needs of the organization. St. Louis Community College has an apprenticeship model to help identify the needs of employers. The group agreed the LPHS lacks a system wide assessment to identify what is needed in terms of expertise, competencies, and training.

Refresher courses are delivered online and through group classes and presentations. Emergency preparedness training occurs on a regular basis in the hospitals. Many organizations in the LPHS participate in emergency preparedness drills. The group agreed that training opportunities in the LPHS are not comprehensive, and there is a need for training in the social determinants of health. Incentives are offered to the workforce to participate in educational and training experiences, such as tuition reimbursements, recognition from peers, paid-time off, and maintenance of licensures and requirements for employment. The city health department does not offer incentives at this time due to financial burden.

Model Standard 8.4, Public Health Leadership Development, discusses the leadership development in the LPHS including creating a shared vision of community health and providing opportunities for the development of leaders that reflect diversity in the community. The participants scored the Performance Measures from minimal to moderate, resulting in a composite Model Standard score of low moderate.

The group acknowledged that the community is collaborating more than it has in the past. Organizations are working together on decision making about how finite resources should be spent and which priorities should align across organizations. The Internal Revenue Services (IRS) has formalized this process through the hospital requirements for community benefit and the

CHNA. LPHS organizations ensure informed participation in decision-making through email lists, community forums, and networking/personal relationship building. However, the group agreed there is much work to be done around a shared vision for the LPHS. Fragmentation in the region makes it difficult to have cohesive leadership and a unified vision. "Turf issues" become problematic when many organizations are working on an issue but want to own the problem individually.

Some organizations within the LPHS promote the development of leadership skills. Washington University's Brown School curriculum is partially designed to strengthen leadership skills. Community advisory boards and youth advisory boards have been established to provide insight and direction. In general, however, the group agreed there is little access to leadership training and development in the LPHS. Even less access is afforded to those at the lower tiers of organizations. As one participant put it, "There is a club mentality in St. Louis. You are either in the club of leadership or you are not." Budgetary constraints and staff turnover make it difficult for employees to make time for leadership development; the backlog of work and burden of bureaucracy is often a barrier for the city health department. The respondents noted that without support from current leadership, it is difficult to promote the development of these skills. The group indicated that the LPHS is in need of more mentors and coaches across all sectors.

Respondents acknowledged that the LPHS struggles to recruit and retain leaders who represent the diversity of the community. They noted that hospitals have signed the American Hospital Association pledge to push for more diversity.

EPHS 8 Health Equity Measure

EPHS 8 Health Equity Measures			
These questions explore how the LPHS is developing staff capacity to support health equity, the inclusiveness of workforce assessment planning, and the recruitment of diverse, multidisciplinary staff at LPHS organizations. At what level does the LPHS…			
8D	Recruit and train staff members from multidisciplinary backgrounds that are committed to achieving health equity?		13
8E	Recruit and train staff members that reflect the communities they serve?		13
HE 8	Health Equity in Workforce Development	MINIMAL	13

The participants scored Health Equity Measures 8D and 8E at the minimal level. The group agreed that the LPHS is recruiting staff that are committed to achieving health equity at a minimal level. Most people do not know about health inequities or health disparities. Commitment to health equity is difficult to measure and not purposefully sought out. Participants agreed that recruiting and training staff members that reflect the communities they serve is a weakness for the LPHS, and they assumed there is little being done to fix this problem.

EPHS 8 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• Regional assessment of community health workforce will be conducted summer 2017.
• Community colleges are a resource for workforce development.
• St. Louis University and Washington University are valuable public health workforce assets.
• Collaboration of FQHCs and hospitals on workforce stabilization for the safety net via Integrated Health Network Board of Directors.
• FSOA, in partnership with the HEAL partners, developed a set of recommendations for CHW certification that is being developed by Missouri DHSS.
• Institute for Medical Education & Research (IMER) funds community based training to medical schools (e.g. St. Louis University and Washington University) – the gap is that it does not focus on residencies.
• There are many great leaders in the St. Louis region.
• Many organizations are at the table to work to accomplish goals.

Weaknesses
• FQHC workforce retention of physicians is a gap/shortfall – Integrated Health Network has identified workforce stabilization as a strategic focus.
• There are challenges in engaging in assessments and training, including lack of time to attend and funding to facilitate.
• Civil service classifications are a major barrier.
• Lack of regional or system-wide workforce assessment and implementation; no consistency.
• Workforce diversity remains a major system weakness.
• Lack of career ladders for entry-level workers.
• Lack of continuing education opportunities for the public health workforce.
• Decision-maker involvement is critical both politically and financially.
• Training opportunities are sporadic and topic specific; not system wide.
• Unequal distribution of incentives for workforce development.
• Difficulty with recruitment.
• Leadership in St. Louis still underrepresents the diversity of the region.
• Much of the leadership development that occurs is on the job training or trial and error.
• There are no “on-ramps” for leadership beyond a selected few.
• Our leaders do not reach out in a formal way to grow future leaders.
• Limited leadership opportunities for diversity.

- We are encouraging knowledge and language around health equity but that doesn't mean people know how to integrate appropriate changes to their work to take health equity into account.
- We do not apply health equity with intention across the region.

Short-Term Opportunities
• Begin early recruitment at the high school level.
• Partner with St. Louis Community College for future workforce assessment.
• Think more intentionally about continuing education and professional development.
• Align public health assessments with other workforce assessments.
• Invite those who create and implement personnel policies, job descriptions, and starting salaries to participate in these discussions.
• Make credentialing and certification driven by employer needs.
• More continual training on non-certification or licensure topics (ex: cultural competencies).
• Make continuing education opportunities more widely available.
• Apply critical race theory to public health.
• More opportunities for leadership and networking to know the right people.
• More facilitated training across public health organizations.
• Standardize job descriptions, hiring processes, and formal training.

Long-Term Opportunities
• Utilize a race equity lens.
• Schools should offer education/curriculum based on community need.
• Improve linkage of students to help LPHS organizations pilot and test new solutions.
• Localize vocation specific assessments.
• Assessment of overlapping workforce and infrastructure should coordinate (ex: case management).
• Performance reviews are standardized and not specific to positions.
• Opportunity for Washington University's Brown School Summer Institute to focus on public health-specific skill development.
• Public health infrastructure to inform St. Louis Community College, St. Louis Agency on Training and Employment, etc. for workforce training needs; a system wide public health workforce assessment is needed.
• Formalize regional training for public health system staff.
• Learn meaningful community engagement strategies from youth serving organizations and social services.
• Empower our citizens to take leadership roles.
• Grow leaders in St. Louis.
• Intentionality is required for achieving and promoting health equity.
• Infuse health equity into policy.

Essential Public Health Service 9: Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services

To assess performance for Essential Public Health Service 9, participants were asked to address three key questions:

Are we meeting the needs of the population we serve?
Are we doing things right?
Are we doing the right things?

Evaluating effectiveness, accessibility, and quality of personal and population-based health services encompasses the following:

- Assessing program effectiveness through monitoring and evaluating implementation outcomes and impact.
- Providing information necessary for allocating resources and reshaping programs.

EPHS 9 Group Composition

Partners who gathered to discuss the performance of the local public health system in evaluating effectiveness, accessibility, and quality of personal and population-based health services included:

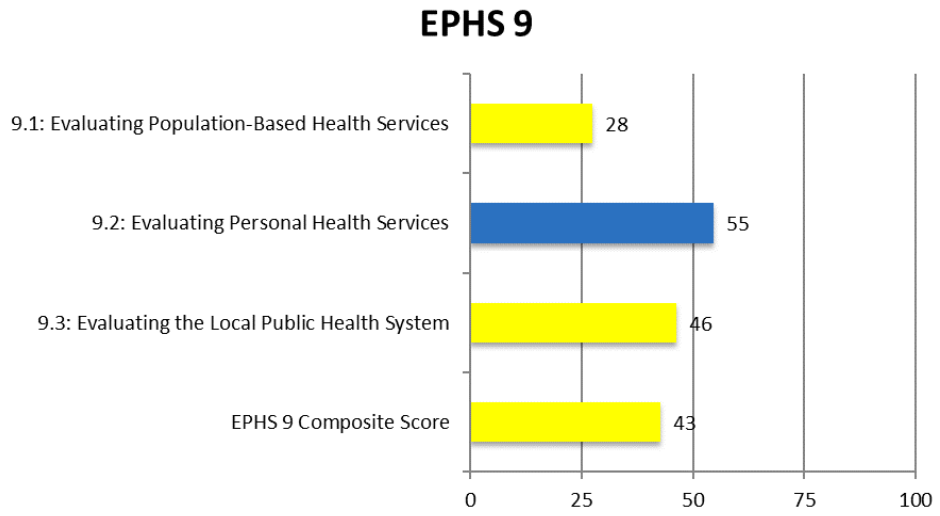
#	Organization Type
1	Economists
1	Health officer/public health director
1	Health-related coalition leaders
3	Hospitals
1	Non-profit organizations/advocacy groups
2	Primary care clinics, community health centers, FQHCs
1	Professional associations
1	Public and private schools
2	Social service providers
1	Substance abuse or mental health organizations
3	The local health departments
1	Universities, colleges, and academic institutions

EPHS 9 Model Standard Scores

EPHS 9. Evaluate Effectiveness, Accessibility, and Quality of Personal and Population-Based Health Services			
The LPHS evaluates population-based health services, which are aimed at disease prevention and health promotion for the entire community. Many different types of population-based health services are evaluated for their quality and effectiveness in targeting underlying risks. The LPHS uses nationally recognized resources to set goals for their work and identify best practices for specific types of preventive services (e.g., *Healthy People 2020* or *The Guide to Community Preventive Services*). The LPHS uses data to evaluate whether population-based services are meeting the needs of the community and the satisfaction of those they are serving. Based on the evaluation, the LPHS may make changes and may reallocate resources to improve population-based health services.			
9.1.1	Evaluate how well population-based health services are working, including whether the goals that were set for programs and services were achieved		38
9.1.2	Assess whether community members, including vulnerable populations, are satisfied with the approaches taken toward promoting health and preventing disease, illness, and injury		13
9.1.3	Identify gaps in the provision of population-based health services		46
9.1.4	Use evaluation findings to improve plans, processes, and services		13
9.1	Evaluating Population-Based Health Services	MODERATE	28
The LPHS regularly evaluates the accessibility, quality, and effectiveness of personal health services. These services range from preventive care, such as mammograms or other preventive screenings or tests, to hospital care, to care at the end of life. The LPHS sees that the personal health services in the area match the needs of the community, with available and effective care for all ages and groups of people. The LPHS works with communities to measure satisfaction with personal health services through multiple methods, including surveys with persons who have received care and others who might have needed care or who may need care in the future. The LPHS uses findings from the evaluation to improve services and program delivery, using technological solutions, such as electronic health records, when indicated, and modifying organizational strategic plans, as needed.			
9.2.1	Evaluate the accessibility, quality, and effectiveness of personal health services		63
9.2.2	Compare the quality of personal health services to established guidelines		71
9.2.3	Measure user satisfaction with personal health services		71
9.2.4	Use technology, like the Internet or electronic health records, to improve quality of care		30
9.2.5	Use evaluation findings to improve services and program delivery		38
9.2	Evaluating Personal Health Services	SIGNIFICANT	55
The LPHS evaluates itself to see how well it is working as a whole. Representatives from all groups (public, private, and voluntary) that provide all or some of the 10 Essential Public Health Services gather to conduct a systems evaluation. Together, using guidelines (such as this Local Instrument) that describe a model LPHS, participants evaluate LPHS activities and identify areas of the LPHS that need improvement. The results of the evaluation are also used during a community health improvement process.			
9.3.1	Identify all public, private, and voluntary organizations that contribute to the delivery of the 10 Essential Public Health Services		63
9.3.2	Evaluate how well LPHS activities meet the needs of the community at least every five years, using guidelines that describe a model LPHS and involving all entities contributing to the delivery of the 10 Essential Public Health Services		71
9.3.3	Assess how well the organizations in the LPHS are communicating, connecting, and coordinating services		13
9.3.4	Use results from the evaluation process to improve the LPHS		38
9.3	Evaluating the Local Public Health System	SIGNIFICANT	46

EPHS 9 Discussion Summary

EPHS 9 explores how the LPHS evaluates the effectiveness of personal and population-based services, and the LPHS itself. Overall performance for EPHS 9 was scored **moderate** in St. Louis and ranked third out of the 10 EPHSs. The three Model Standards for EPHS 9 were scored from low moderate to low significant.



The LPHS has several mechanisms to evaluate population and personal health services, including focus groups, pay for performance models, and customer satisfaction surveys. However, a great deal of evaluation data are not accessible to the LPHS (especially data from the private sector) or the data sources are not clean enough for meaningful interpretation. Improvement opportunities include improving client evaluation instruments to make them more user-friendly; improving access to primary care physician data; and improving evaluation capacity at FQHCs. The group agreed that the city-county joint LPHSA is a good step towards better collaboration.

Model Standard 9.1, Evaluation of Population-Based Health Services, explores whether population-based services are being adequately evaluated by the LPHS, community feedback is sought, and gaps in service provision have been identified. The participants scored the Performance Measures from minimal to high moderate, resulting in a composite Model Standard of low moderate.

The participants reported that population-based health services in the LPHS are evaluated sporadically; the frequency varies between different programs and services. Assessments, such as those produced by the Regional Health Commission, provide some measures of quality and comprehensiveness. The *Understanding Our Needs* report is completed every two years and helps identify gaps in the provision of services. Hospitals and insurance plans frequently evaluate population-based services internally, however, much of the data are not publicly accessible. Some of the departments within the health departments (e.g. environmental health, communicable disease) administer satisfaction surveys or conduct focus groups to gauge

community satisfaction. Participants reported that they are likely to hear complaints from the public (e.g. email or phone call) when public health services are not satisfactory. LPHS organizations are able to draw on disease incidence and nationally representative data as measure of effectiveness. The evaluation data are used for developing strategic plans but are not revisited with enough frequency (e.g. quarterly basis). Overall, the group agreed that evaluation data are fragmented and need to be streamlined to assist in planning and resource allocation in the LPHS.

Model Standard 9.2, Evaluation of Personal Health Services, examines the extent to which health care providers are evaluating personal health care services. The participants scored the Performance Measures from low moderate to high significant, resulting in a composite Model Standard score of low significant.

Participants reported that many LPHS organizations use patient satisfaction surveys to determine client satisfaction. Respondents also noted there are national comparative surveys and reporting mechanisms that allow patients to research provider quality. The group agreed that the LPHS is still in a pay for service system but it is transitioning to a pay for performance system. The Gateway Pay for Performance system assesses quality of care and withholds payment to health care organizations if the care is not satisfactory. Many providers and insurers utilize “pay for performance” models including hospitals, Medicare/Medicaid, managed care, insurers, universities, and FQHCs. Respondents indicated several improvement opportunities, including: making the evaluation data cleaner and more useful; improving client evaluation instruments to make them more user-friendly; and improving evaluation capacity at FQHCs.

The group described numerous ways that information technology is used to ensure the quality of personal health services. Hospitals often make phone calls and send emails to patients to follow up after discharge. The group agreed that Electronic Health Records (EHRs) are a tremendous improvement from paper charts, allowing for more timely provider access and coordination internally and across systems. However, interoperability between EHR systems is still weak and affects the mobility of patients across providers. In addition, the respondents noted that some providers are not as far along in adopting EHRs due to cost, and therefore some vulnerable populations may be left out of these technological improvements. The group agreed that obtaining lab results for patients outside of your system is difficult and problematic. The respondents agreed that telehealth is still in its formative stage but is a long term opportunity to improve quality of personal health services. Participants reported that there is an emerging statewide communication system, but no regional health information organization. The Prescription Drug Monitoring Program (PDMP) is currently in 19 counties (not statewide).

The evaluation results are used by individual organizations in planning, and there is some collaboration across the Missouri Hospital Association, Missouri Primary Care Association, Missouri Foundation for Health, and the Integrated Health Network to share evaluation data. The group agreed that sharing more evaluation results across the LPHS would be beneficial for

informing plans. All LPHS organizations are held to the standards of one or more accrediting bodies.

Model Standard 9.3, Evaluation of the Local Public Health System, explores LPHS performance in evaluating its effectiveness as a system. The participants scored the Performance Measures from minimal to high significant, resulting in a composite Model Standard score of high moderate.

The group noted that this event marks the first joint city-county LPHSA. The city health department had not previously conducted an LPHSA, while the county health department conducted an LPHSA in 2013. The participants remarked that the level of collaboration between the city and county has steadily increased over the years and that this is a strength for the LPHS. The group noted that nursing homes, urgent care centers, Information Technology (IT) stakeholders (e.g. Epic Systems), and the Department of Veterans' affairs should be involved in the LPHSA, but they were unsure if these stakeholders had been invited to this event. There is additional work to be done to bring everyone to the table.

Respondents noted that communication could be improved between organizations, and that LPHS organizations desire to collaborate, but need take more steps to move from the loose to the tight end of the collaboration spectrum.[12] The group discussed barriers to collaboration, including policy and structural impediments in reimbursement, and funding organizations not present at the table or not collaborating. The LPHS has many duplicative efforts and some organizations (e.g. FQHCs) are over-taxed because they are expected to send representatives to many different groups that are working on similar issues. The group agreed that a long-term improvement is to reduce meeting repetition and overlap.

The participants indicated that the LPHSA results are used to improve the LPHS. The results drive decision making for public health, though they are less directly influential for community organizations and hospitals.

[12] The Collaboration Spectrum is a way to characterize relationships between organizations, from competition (loose) to integration (tight). See "Turf, trust, and the Collaboration Spectrum" from the Collective Impact Forum.

EPHS 9 Health Equity Measures

EPHS 9 Health Equity Measures			
These questions explore delivery of the 10 EPHS to historically marginalized communities and whether the LPHS monitors the delivery to ensure equitable distribution. At what level does the LPHS…			
9A	Identify community organizations or entities that contribute to the delivery of the Essential Public Health Services to historically marginalized communities?		63
9B	Monitor the delivery of the Essential Public Health Services to ensure that they are equitably distributed?		13
HE 9	Equitable Delivery of the EPHS	MODERATE	38

The participants scored Health Equity Measures 9A and 9B from minimal to significant, resulting in a composite Health Equity score of moderate. The participants reported that the LPHS is good at identifying organizations that contribute to the delivery of the 10 EPHSs to historically marginalized communities, though they noted that these organizations are not always at the decision-making table because of lack of trust and systemic racism. Respondents indicated that the LPHS does minimal work to monitor the delivery of the 10 EPHSs to ensure they are equitably distributed; however, many organizations have started this work (for example, increasing training in trauma-informed care).

EPHS 9 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• Organizations in the LPHS conduct focus groups for community feedback.
• Gateway Pay for Performance system assesses quality of care and withholds payment to health care organizations if the care is not satisfactory.
• The Prescription Drug Monitoring Program (PDMP) is currently in 19 counties.
• Electronic Health Records (EHRs) are a tremendous improvement from paper charts, allowing for more timely provider access and coordination internally and across systems.

Weaknesses
• A great deal of data are available but not all of it is accessible (especially data from the private sector).
• The LPHS does not have a regional health information organization.
• The statewide communication system is not widely adopted.
• Evaluation data sources are not clean.

Short-Term Opportunities
• Improve client evaluation instruments to make them more user-friendly.

Long-Term Opportunities
• Develop a critical access Healthcare Support Organizations (HSOs) for sharing primary care physician health data.
• Expand telehealth.
• Include funding agencies in future meetings.
• Improve evaluation capacity at FQHCs.

Essential Public Health Service 10: Research for New Insights and Innovative Solutions to Health Problems

To assess performance for Essential Public Health Service 10, participants were asked to address the key question:

Researching for new insights and innovative solutions to health problems encompasses the following:

- Full continuum of innovation, ranging from practical field-based efforts to fostering change in public health practice to more academic efforts to encourage new directions in scientific research.
- Continuous linkage with institutions of higher learning and research.
- Internal capacity to mount timely epidemiologic and economic analyses and conduct health services research.

EPHS 10 Group Composition

Partners who gathered to discuss the performance of the local public health system in research for new insights and innovation solutions to health problems included:

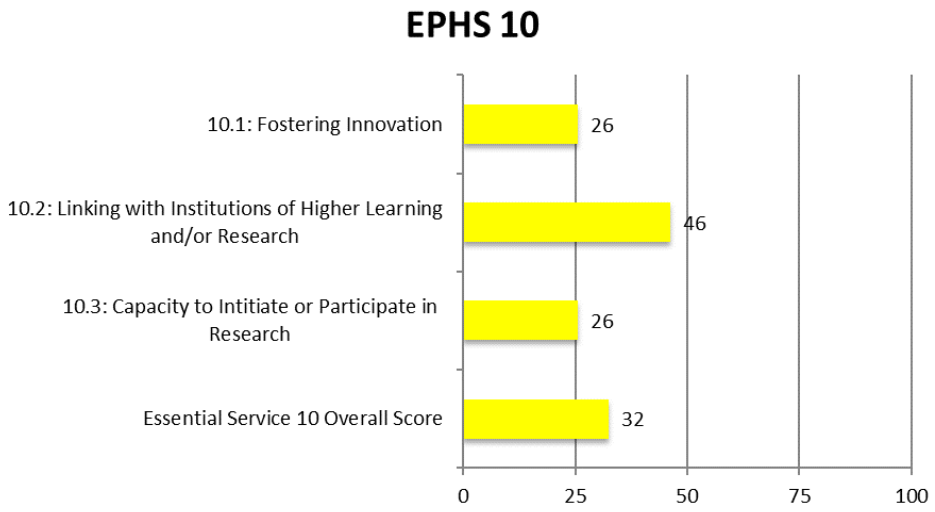
#	Organization Type
1	Health officer/public health director
1	Health service providers
1	Healthcare systems
1	Substance abuse or mental health organizations
3	The local health department or other governmental public health agency
5	Universities, colleges, and academic institutions

EPHS 10 Model Standard Scores

EPHS 10. Research for New Insights and Innovative Solutions to Health Problems			
LPHS organizations try new and creative ways to improve public health practice. In both academic and practice settings, such as universities and local health departments, new approaches are studied to see how well they work.			
10.1.1	Provide staff with the time and resources to pilot test or conduct studies to test new solutions to public health problems and see how well they actually work		13
10.1.2	Suggest ideas about what currently needs to be studied in public health to organizations that conduct research		38
10.1.3	Keep up with information from other agencies and organizations at the local, state, and national levels about current best practices in public health		38
10.1.4	Encourage community participation in research, including deciding what will be studied, conducting research, and sharing results		13
10.1	Fostering Innovation	MODERATE	26
The LPHS establishes relationships with colleges, universities, and other research organizations. The LPHS is strengthened by ongoing communication between academic institutions and LPHS organizations. They freely share information and best practices and set up formal or informal arrangements to work together. The LPHS connects with other research organizations, such as federal and state agencies, associations, private research organizations, and research departments or divisions of business firms. The LPHS does community-based participatory research that includes community members and those organizations representing community members as full partners from selection of the topic of study, to design, to sharing of findings. The LPHS works with one or more colleges, universities, or other research organizations to co-sponsor continuing education programs.			
10.2.1	Develop relationships with colleges, universities, or other research organizations, with a free flow of information, to create formal and informal arrangements to work together		63
10.2.2	Partner with colleges, universities, or other research organizations to conduct public health research, including community-based participatory research		38
10.2.3	Encourage colleges, universities, and other research organizations to work together with LPHS organizations to develop projects, including field training and continuing education		38
10.2	Linking with Institutions of Higher Learning and/or Research	MODERATE	46
The LPHS takes part in research to help improve the performance of the LPHS. This research includes examining how well LPHS organizations provide the 10 Essential Public Health Services in the community (public health systems and services research) and studying what influences healthcare quality and service delivery in the community (health services research). The LPHS has access to researchers with the knowledge and skills to design and conduct health-related studies, supports their work with funding and data systems, and provides ways to share findings. Research capacity includes access to libraries and information technology, the ability to analyze complex data, and ways to share research findings with the community and use them to improve public health practice.			
10.3.1	Collaborate with researchers who offer the knowledge and skills to design and conduct health-related studies		38
10.3.2	Support research with the necessary infrastructure and resources, including facilities, equipment, databases, information technology, funding, and other resources		13
10.3.3	Share findings with public health colleagues and the community broadly, through journals, Web sites, community meetings, etc.		38
10.3.4	Evaluate public health systems research efforts throughout all stages of work from planning to effect on local public health practice		13
10.3	Capacity to Initiate or Participate in Research	MODERATE	26

EPHS 10 Discussion Summary

EPHS 10 discusses LPHS performance in research and innovation. Overall performance for EPHS 10 was scored **moderate** in St. Louis and ranked seventh out of the 10 EPHSs. The three Model Standards for EPHS 10 were scored from low moderate to high moderate.



The LPHS has strong community partnerships between research and practice; these partnerships should strive to engage the community more broadly. Research entities need to include more authentic community voice in decision-making. There are many research proposals, but the LPHS needs to find ways to prioritize community needs. The LPHS also has innovative programs and these have to be elevated to a more prominent position. Agencies lack opportunities to engage agencies and foster innovation because staff are busy doing daily work responsibilities. The group identified several areas of opportunity, including promoting public health infrastructure to the business and innovation community (potentially through the Cortex Innovation Community); developing joint publications between academia and public health practice; and creating a community resources dashboard to make research findings centralized and publicly accessible.

Model Standard 10.1, Fostering Innovation, explores LPHS performance in finding new ways to improve public health practice. The participants scored the Performance Measures from minimal to moderate, resulting in a composite Model Standard score of low moderate.

LPHS organizations have proposed one or more public health issues for inclusion in a research organization's agenda. Integrated Health Network has an academic partnership, and the county health department has partnered with St. Louis University on environmental health issues and tobacco-related issues. The group indicated that there is no systematic way for LPHS organizations to share results or lessons learned, though national conferences can help facilitate this. The participants said that networking is crucial to finding new solutions to health problems; for example, Behavioral Health Response encourages staff to look outside of behavioral health to support initiatives beyond their scope. Lack of funding, restricted funding

uses (e.g. grants do not want research activities), and lack of human capital are barriers to conducting pilot tests or studies. Participants suggested using students to execute pilot projects.

LPHS organizations identify and stay current with best practices through academic partners, professional associations, and emails from leadership. The county health department indicated that the National Association of County and City Health Officials (NACCHO) has been an invaluable tool for establishing best practices. Some participants noted it can be difficult to keep up with the volume of best practice information that is circulated. The participants reported there are pockets of innovations in the LPHS but there is not system-wide capacity for evaluation, documenting success, and building an evidence base. The participants said that a representative from Cortex Innovation Community, a specialist in health technology, should be present at the LPHSA.

Model Standard 10.2, Linkage with Institutions of Higher Learning and Research, examines the extent to which the LPHS engages in relationships with universities and other research institutions to collaborate and share data and best practices. The participants scored the Performance Measures from moderate to significant, resulting in a composite Model Standard score of high moderate. Participants agreed that LPHS organizations have plenty of relationships with institutions of higher learning, and relationships are developed regardless of funding availability or resource constraints. Relationships encompass both informal and formal networks.

Model Standard 10.3, Capacity to Initiate or Participate in Research, discusses how the LPHS partners with researchers to conduct health related studies, supports research with necessary infrastructure and resources, shares research findings, and evaluates research efforts. The participants scored the Performance Measures from minimal to moderate, resulting in a composite Model Standard score of low moderate.

The LPHS shares findings from its research through annual reports and community needs assessment reports. There is no central repository for research findings. Participants would like to see joint publication records between academia and public health institutions. The group confirmed that virtually all types of research expertise and experience is available to the LPHS. Resources available to facilitate research include qualified staff (human capital) and data (e.g. Missouri Information for Community Assessment (MICA)). The lack of financial resources makes it difficult to facilitate research in terms of flexibility. The respondents indicated that LPHS organizations evaluate their research activities individually. The group agreed that the LPHS could do a better job of sharing findings with the broader community.

EPHS 10 Health Equity Measures

EPHS 10 Health Equity Measures			
These questions examine how well the LPHS explores root causes of health inequity, shares information and strategies around health equity, uses Health Equity Impact Assessments, and encourages community participation in health equity research. At what level does the LPHS…			
10C	Use Health Equity Impact Assessments to analyze the potential impact of local policies, practices, and policy changes on historically marginalized communities?		0
HE 10	Health Equity Research	NO ACTIVITY	0

The participants unanimously scored Health Equity Measure 10C at "no activity," indicating that the LPHS does not use Health Impact Assessments to analyze the potential impact of local policies, practices, and policy changes on historically marginalized communities.

EPHS 10 Strengths, Weaknesses, and Opportunities

Participants identified strengths and weaknesses that emerged as themes throughout the discussion of the EPHS and identified potential short- and long-term opportunities for action throughout the LPHS. A summary is provided below.

Strengths
• The LPHS has excellent community leaders and partners that do research and could help engage others in innovation and research.
• The Community Referral Coordinators Program and its collective impact counterpart, the Transitions of Care Task Force, is an evaluated, successful evidence-based innovation model.
• The Network Community Academic Partnership (NCAP) is a table where research proposals can be vetted by practice organizations.

Weaknesses
• Agencies do not foster innovation because staff are busy doing daily work responsibilities.
• Change in practice as a result of guidelines/best practices updates are difficult to quantify.
• Overabundance of research proposals; the LPHS needs to continue to optimize our community's research needs.
• Research entities need to engage authentic community voice and decision-making in research projects.

Short-Term Opportunities
• Promote public health to the business and innovation community though Cortex Innovation Community.
• Partner with universities to get help on pilot projects and obtain additional resources to gather information about efficacy.
• Create joint publications with academia and public health practice.

Long-Term Opportunities
• Develop an investigative work culture that allows for continuous piloting and finding new solutions (e.g. Google, Apple).
• While there are opportunities to work collaboratively, these are not always known by all parties. The LPHS needs to invest in sharing methods.
• Develop a community research dashboard to compile the findings of our research community.

Appendices

Appendix 1: List of Participating Organizations

Organizations
Affinia Healthcare
American Diabetes Association
American Heart Association
Barnes-Jewish Hospital
Behavioral Health Network of Greater St. Louis
Behavioral Health Response
Beyond Housing
Bi-State Development Research Institute
BJC HealthCare
Casa de Salud
City of St. Louis Department of Health
City of St. Louis Joint Board of Health and Hospitals
City of St. Louis Office on the Disabled
DOORWAYS
FamilyForward
Gateway Region YMCA
GirlTrek
Great Rivers Greenway
Health Literacy Media
International Institute of St. Louis
Mercy
Metropolitan Congregation United
Metropolitan St. Louis Sewer District
Missouri Department of Health & Senior Services
Missouri Foundation for Health
Missouri Hospital Association
National Council on Alcohol and Drug Abuse - St. Louis Area
Office of St. Louis County Executive
Operation Food Search
People's Community Action Corporation
Rupert Brooks Company, LLC
Saint Louis City EMA/DPS
Saint Louis County Department of Public Health
Saint Louis Public Schools
Saint Louis University College for Public Health and Social Justice

SSM Health
SSM Health - St. Mary's Hospital
SSM Health - SLUH
St. Anthony's Medical Center
St. Charles County Department of Public Health
St. Louis Area Agency on Aging
St. Louis Children's Hospital
St. Louis Integrated Health Network
St. Louis Mental Health Board
St. Louis Promise Zone
St. Louis Regional Health Commission
St. Luke's Hospital
System of Care St. Louis Region
Teen Pregnancy & Prevention Partnership
The Oasis Institute
Trailnet
U.S. Green Building Council
University of Missouri
University of Missouri Extension
VA St. Louis Healthcare System
Washington University in St. Louis
Washington University School of Medicine

Appendix 2: LPHSA Supplement – System Contributions to Assuring Health Equity