Report on the Capacity of Missouri's Public Health System to Deliver the Missouri Foundational Public Health Services Model

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Executive Summary

What are the elements of public health that should be available to all Missourians in every part of the state? That question animated the development of the Foundational Public Health Services (FPHS) model for Missouri. The transformation of Missouri's public health system begun by the #HealthierMO grassroots initiative, continued with a deep exploration of the current state of Public Health and its future in Missouri. Guided by the national FPHS model established in 2013, and assisted by the FPHS workgroup, the #HealthierMO Executive Committee, and focus groups from across the state, LPHAs defined what fundamental public health capabilities and areas of expertise must be available in every community in order to have a functioning public health system. #HealthierMO then partnered with the Missouri Department of Health and Senior Services (MDHSS) on their bi-yearly infrastructure survey. What follows is a brief summary of what the LPHAs reported regarding their capacity to deliver the elements of the FPHS model.

Capabilities are Foundational. Although it is common to think about public health in terms of the areas of service, such as communicable disease control or injury prevention, we found that LPHAs who are meeting minimum standards for FPHS Foundational Capabilities are 2.3 times more likely to provide the FPHS Areas. Abilities like organizational administrative competencies, emergency preparedness, and communications are the foundational beams that support areas of expertise.

Funding Matters. Per-capita funding alone (apart from all other financial, personnel, or population variables) distinguished the group of LPHAs who lacked capacity from those who possess capacity. The mean differences in funding are approximately $6.50 per capita for Capabilities and $10 per capita for Areas. Average taxation rate for LPHA service areas were

almost identical (0.2 vs. 0.1), so efforts to increase a mill tax should use the averages in this report to estimate what per capita increases in funding will close the gap in that specific locale.

LPHA Directors Matter. LPHAs whose Director or Administrator had more than two years of experience were much more likely to meet FPHS Capability minimums. When the LPHA director is not required to fulfill multiple roles at the LPHA and can focus on the administrative role, that LPHA is more likely to meet capability minimums. The importance of LPHA directors to the capacity of an LPHA highlights the potential impact of director turnover as a challenge to future system function. As of this report, 22 LPHAs have had turnover of their director (19% turnover rate) and 29 within the past 18 months, meaning that within the last 18 months, over 1 in 4 Missouri LPHAs (25%) have seen a change in their leadership.

Training Shapes the Future of Public Health. Going into the COVID-19 pandemic, 95% of Missouri LPHAs had 10 or fewer trained contact tracers and 66% had 5 or fewer. In a state with a population of 6.1 million, only 408 local public health professionals are trained to administer immunizations, 90% of LPHAs have six or fewer trained immunizations staff; over half (58%) have four or less.

COVID-19 Response is Robust. We analyzed how LPHAs across Missouri were performing so that we could identify system changes that contribute the most to improving the FPHS components. The highest skillset across all LPHAs was for Communicable Disease Control, which has proven vital in the public health response to the COVID-19 pandemic. COVID-19 is expected to dominate both time and resources of public health deep into 2021. #HealthierMO will continue to collect and analyze data in an effort to best support Missouri's public health agencies, facilitating organic changes that will help agencies assure the FPHS,

shape the future of Missouri's public health system, and provide the public with an equitable opportunity to live healthier lives.

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Report on the Capacity of Missouri's Public Health System to Deliver the Missouri Foundational Public Health Services Model

The transformation of Missouri's public health system begun by the #HealthierMO grassroots initiative, continues with the development and implementation of Missouri's Foundational Public Health Services (FPHS) model. Following the national FPHS model established in 2013, Missouri's FPHS model defines the fundamental public health capabilities and areas of expertise that must be available in every community in order to have a functioning public health system. The core set of capabilities and areas establish the foundation upon which an additional service platform will be built. An operationalized FPHS model assures that each health department, regardless of location, region, or composition, offers the same fundamental services, as well as any additional services unique to that community.

This report summarizes the development of Missouri's FPHS model and describes the results of the initial assessment of Missouri's public health system capacity to deliver on the FPHS model. These results provide a comprehensive baseline measurement of Missouri's capacity and capability to assure the FPHS. The results illuminate gaps in Missouri's current capacity and will be used to assess the costs to fully deliver the foundational public health services.

FPHS Model Development

Model development began with a literature review of FPHS models adopted by other states. Having researched the approaches to FPHS from other states, all existing state models were then compared using a crosswalk approach in which similarities and differences were noted, then validated the cross walk with PHAB accreditation standards and Missouri Institute of

Community Health (MICH) (for MICH accreditation standards). It should be noted that most states did not add to or subtract from the national FPHS model so much as reorganize it. The only true inclusion absent from the original national model was “health equity”.

The expertise of the #HealthierMO FPHS workgroup – a group of public health professionals who volunteered to guide the establishment of a set of Foundational Public Health Services (FPHS) for Missouri – guided the next step. A detailed report on state FPHS model comparisons was provided to members of the #HealthierMO FPHS workgroup, for their consideration and to inform their deliberation on what should be included in the Missouri model.

The #HealthierMO FPHS workgroup decided to use the common features of the comparison models in the development of the Missouri model. The proposed elements (i.e., activities defining the FPHS Capabilities and Areas) of the Missouri FPHS model were compiled into a decision matrix that the #HealthierMO Executive Committee evaluated, prioritized, and used to recommend a final slate of FPHS elements for consensus acceptance.

FPHS Regional Focus Groups

The proposed Missouri FPHS model was then shared with multiple focus groups, comprising public health professionals from every region of the state. Focus groups were asked whether they understood the model, supported the model, and if they would propose changes to the model. As with the #HealthierMO Executive Committee, participants in the focus groups broadly understood the proposed model and did not want to deviate from the national model on content, so that Missouri’s FPHS model would align readily with the Universal Chart of Accounts and with existing capacity and costing assessment tools. There was no outright rejection of the proposal to adopting a FPHS model for Missouri.

The focus groups agreed that a persistent lack of public awareness about the functions of public health should be addressed, but that the FPHS model was too complex to serve as an explanation of public health to the general public. Instead, they concluded that the FPHS model should be used internally to organize public health agencies, inform delivery of services, and evaluate the costs to LPHAs to provide services in order to advocate for equity in resource allocation.

The focus groups also weighed in on proposed visual models to present the FPHS capabilities and areas. The draft visual model (which was ultimately revised) drew mixed reviews with focus group participants either genuinely liking it or categorically disliking it. Many expressed a desire to see the interconnectedness of the capabilities and areas become more prominent, better use of color, equality of display box sizes, and a simplification of the visual presentation. This feedback was incorporated into the development of the final visual model.

Health Equity

Both the #HealthierMO FPHS workgroup and the #HealthierMO Executive Committee felt strongly that the concept of health equity should be emphasized in Missouri's FPHS model. The general agreement was that equitable service to the public was already endemic within public health, but there was no consensus on whether health equity should be separated as its own FPHS capability, or be integrated within the existing FPHS capabilities and areas.

Separation would greatly emphasize the role of health equity within Missouri's FPHS model, but would also require either creating new activities to be added to the model – making it out of alignment with the national model and therefore more difficult to compare to other states – or reorganizing the activities already within the FPHS national model to a new category called

Health Equity. Separating health equity also risked of making it seem "optional" to LPHAs in regions where the concept of health equity was viewed skeptically. Indeed, there was resistance to the word "equity" in several of the focus groups and multiple suggestions to consider alternative words to describe it.

Some focus group members described an antipathy toward the concept of "equity" within their communities. Participants expressed a perception that *equity* was a politically charged word which implied to many people in their community that something must be taken from them in order to be given to an underserved community. If communities embraced the belief that *equity* was focused on minority urban communities and could only be accomplished at a personal cost to themselves, it was suggested, their reaction to the word *equity* could undermine community support and buy-in for the larger model.

In the end, the concept of health equity was combined with social determinism theory to create a category called "Health Equity and Social Determinants of Health" that was called out explicitly in the visual model. It is depicted as a circle encompassing the FPHS Areas and underlying the FPHS Capabilities, the lens through which public health service is viewed. The activities of health equity were left integrated into the FPHS model Capabilities and Areas, making Missouri's FPHS model consistent with existing models while allowing LPHAs to apply equity within their own communities without reference to services in other communities.

The areas and capabilities have been organized into a visual representation of Missouri's FPHS model. Every area or capability may be subdivided into its related elements. For example, Assessment and Surveillance capability comprises five elements: data collection, analytic capabilities, data response/report preparation, community health assessment capability, and

access to lab services. Each element is defined by one or more activities. The data collection element in the Assessment and Surveillance capability is defined by the capacity to (a) collect public health data, (b) develop electronic health information systems, and (c) access electronic health information systems. Furthermore, each FPHS Area and FPHS Capability has been labeled with a three-letter abbreviation, such as COM for Communications capability or CDC for Communicable Disease Control area. The visual model of Missouri's FPHS model is in Figure 1. A summary of the abbreviations, number of elements, and corresponding number of activities is in Table 1.

Figure 1

Visual Model of Missouri's Foundational Public Health Services Model

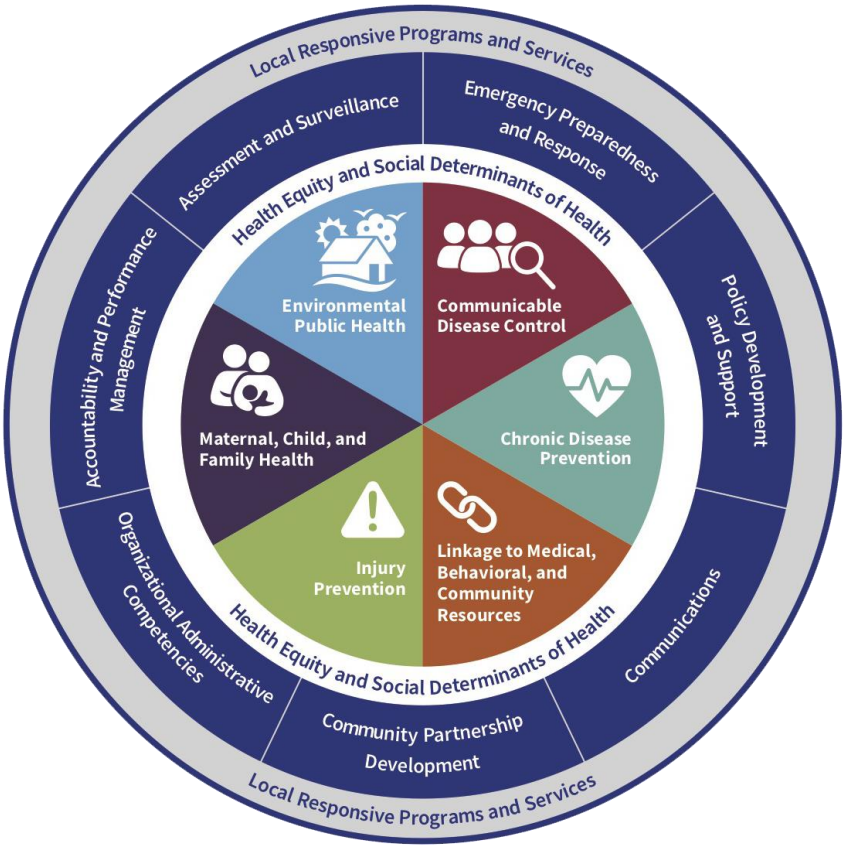


Table 1

FPHS Capability and FPHS Area Clusters Model Summary Table

	Abbreviation	Elements	Activities
Foundational Capabilities (7)			
Organizational Administrative Competencies	OAC	8	17
Emergency Preparedness and Response	EPR	8	14
Communications	COM	5	14
Assessment and Surveillance	AAS	5	11
Community Partnership Development	CPD	6	8
Policy Development and Support	PDS	3	5
Accountability and Performance Management	APM	3	5
Foundational Areas (6)			
Communicable Disease Control	CDC	7	15
Access to and Linkage with Clinical Care	LNK	4	15
Maternal Child Family Health	MCH	5	12
Environmental Public Health	EPH	6	11
Chronic Disease	CDP	5	8
Injury Prevention	INJ	3	6

FPHS Capacity Assessment

Having established the definitive list of fundamental public health capabilities and areas of expertise that must be available in every community in order to have a functioning public health system, the next step was to measure the current capacity to deliver Missouri's FPHS model by Missouri LPHAs. Although the original intent had been to approach LPHAs as an independent entity, members of the #HealthierMO Executive Committee suggested that #HealthierMO partner with Missouri's Department of Health and Senior Services (MDHSS) to include the #HealthierMO capacity assessment questions in their bi-yearly Infrastructure Survey. Such a partnership would offer a more efficient process for collecting a richer data set that could later be used by LPHAs for budgeting, strategic planning, and community collaboration initiatives. The backing of the #HealthierMO Executive Committee eased the transition to

collaborating with MDHSS, allowing us to ask LPHAs to self-assess the degree to which they could currently assure each element of the FPHS model.

To maximize accurate data collection and to improve the survey-taking experience, the survey was delivered through the Qualtrics data collection tool. This web-based software was easier for LPHAs to use than the previous Infrastructure Survey two-years prior, and easier to download the completed dataset. By the conclusion of the survey, data had been collected from 112 of Missouri's 114 LPHAs. (Note: at the time of the survey, there were 114 LPHAs. Since then, the total is now 115.) Data were downloaded and analyzed in IBM SPSS Statistics 27. When data analysis was completed, each LPHA who completed the survey was emailed a summary of their own responses as a snapshot of their LPHA's performance.

Validity of Self-Report Methodology

As was previously described, the FPHS capacity assessment was conducted in collaboration with the MDHSS 2020 Infrastructure survey. Using a self-report methodology, LPHA administrators or their designee were asked to use a structured system by which to rate their agency's performance. The answer options on the FPHS survey were anchored so that each was meaningful, and the response options were arranged in a logical, ascending order. The reliability of the scales was assessed and reported; reliability coefficients were generally good and indicated that the survey items, as designed, maintained robust reliability. Validity could not be directly assessed, but a Mahalanobis Distance tests for multivariate outliers was conducted to identify any LPHA reporting unexpectedly high or low scores. The cutoff criteria for a Mahalanobis test with 13 degrees of freedom (7 capabilities and 6 areas) were $X^2(.01) = 27.68$ and $X^2(.001) = 34.53$. Four LPHAs were multivariate outliers at the .001 level. Examinations of

the response patterns for the FPHS survey suggest that the preponderance of the responses were reliable, valid, and accurate.

Response Options

For each activity in the FPHS Capabilities and Areas, LPHAs were asked to rank their capacity on a scale of 1 to 6 (see Table 2). Options 1 to 3 indicated that the service was not provided in that jurisdiction, whether from lack of ability or lack of priority. Options 4 to 6 indicated that the service was provided to a minimal, adequate, or exceptional degree. If the LPHA indicated that they were not providing the service (options 1 – 3), they were asked a follow-up question about what they would need in order to provide that service effectively.

Table 2

Example Survey Item and Response Options for an FPHS Capability

Capability: Ability to collect primary public health data.
We currently lack this capability and would require additional resources to provide it. (1)
We might be able to provide this capability with difficulty, but currently do not. (2)
We could competently provide this capability, but we currently do not. (3)
We currently provide/assure this capability, but not at the level needed for our community. (4)
We currently provide/assure this capability adequately for our entire community. (5)
We excel at providing this capability in our community and could assist others in doing it. (6)
For the capability "Ability to collect primary public health data" if you had the resources to spend, what would you need to do this effectively?
We would need to hire more people with this expertise (Hiring)
We would need specific training for our existing people (Training)
We would need specific technology to provide this (Technology)
We would need to partner share with another LPHA (Partner)
We would need to partner with another entity to assure it (Share)
We face resistance in providing this to our community (Resistance)
We do not think this is necessary to provide in our community (Not necessary)

Chapter 2: Creating FPHS Data Clusters

In order to examine the validity of the model, it was necessary to divide the LPHAs into groups for comparison. Although this grouping could have been done artificially, such as comparing urban versus rural, or organizations of differing population sizes, a more desirable approach was to determine whether the response patterns themselves formed any natural groupings. Rather than telling the data how they should conform, we chose to let the data reveal any preexisting configurations of how LPHAs described their own capacity. Creating these groupings was accomplished using a two-step cluster analysis.

FPHS Clusters

The model summary table (Table 3) indicates that two clusters were found based on the seven input features for FPHS Capabilities and that two clusters were found based on the six input features for FPHS Areas. As noted above, these clusters emerged from patterns within the data and were not specified by the researcher. The cluster quality markers (Figure 2) indicate that the overall quality of both models is "Fair". An examination of the cluster means suggested that the clusters were well separated.

Table 3

FPHS Capability and FPHS Area Clusters Model Summary Table

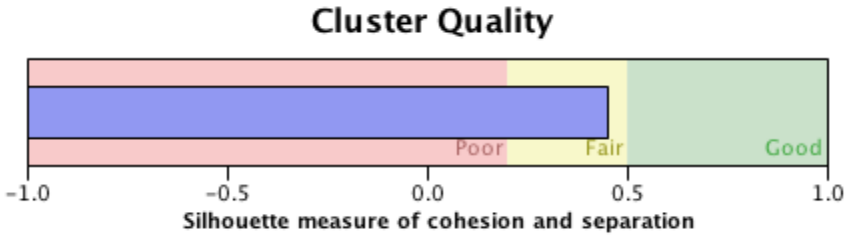
	FPHS Capability Clusters		FPHS Area Clusters	
	Frequency	Percent	Frequency	Percent
Yes	50	44.6%	76	67.9%
No	61	54.5%	36	32.1%
Total	111	99.1%	112	100%
Ratio of Sizes	1.22		2.11	
Items	7		6	

Note: One LPHA is missing from FPHS Capabilities. Ratio of sizes is largest cluster to smallest cluster.

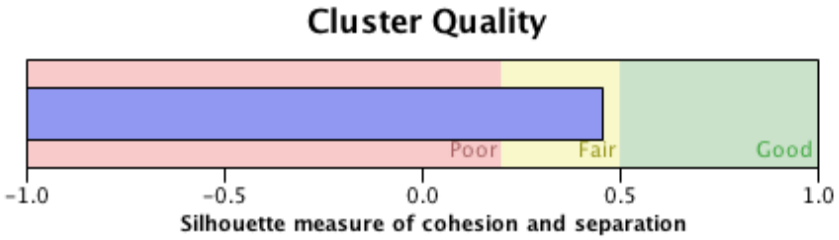
Figure 2

Cluster Quality Markers

Cluster Quality for FPHS Capabilities



Cluster Quality for FPHS Areas



Interpreting the Clusters

Because the groupings in a two-step cluster analysis are algorithmically defined, the role of the researcher is to examine the resulting clusters and determine what they represent. The determination of the meaning of the clusters was made by examining the means of the FPHS Capabilities or FPHS Areas, respectively, with consideration for the self-report scale with which the LPHAs indicated their capacity to deliver services.

In the self-report scales for the FPHS survey, scores of 1, 2, and 3 indicated a lack of capacity for a particular service, whether from inadequate resources or decisions about prioritization. Scores of 4, 5, and 6 indicated a capacity to provide a particular service to varying degrees, ranging from only partially to fully responsive to the needs within the community. Generally speaking, therefore, mean scores of 3 or below for a foundational capability or area indicate that the LPHA is generally not providing needed services for that capability or area.

Scores 4 and above indicate that the LPHA is generally providing the foundational service to some degree.

The mean scores for foundational services clusters identified by the cluster analysis were then examined in relation to the capacity reporting criteria. LPHAs in cluster 1 have average scores at or above 4 for all FPHS Capabilities and at or above 3.75 for all FPHS Areas. They are generally able to provide all services within that capability or area.

LPHAs in cluster 2 have average scores around 3 for Capabilities and below 3 for Areas, with the exception of Communicable Disease Control, for which all LPHAs are above 4, on average. Cluster 2 LPHAs tend to report lacking ability to fully provide services specified in the FPHS model. Of course, not all LPHAs in Cluster 2 lack capacity in all areas, nor do all LPHAs in Cluster 1 have full capacity, but in general, patterns of capacity or lack define the two clusters.

Again, these criteria were not defined by the researcher, but emerged from the data. The characteristic that separates the clusters is a general capacity or lack of capacity to provide defined services and the clusters break along numeric lines defined long before the cluster analysis was conducted. Overall, the convergence of the model with reality speaks to the utility and validity of the cluster analysis for separating and understandings LPHAs in Missouri's public health system.

For simplicity and space in reporting findings in tables, Cluster 1 was called the "Yes" cluster (generally possessing capacity) and Cluster 2 was called the "No" cluster (generally lacking capacity). Specific levels of capacity are expressed with mean scores for a particular service. In order to keep a promise that we made to protect LPHA privacy, findings about LPHA

performance are presented in the aggregate and lists of which LPHAs were in what cluster are not included in this report.

Reliability of the FPHS Capability and Area Scales

Reliabilities for the overall Capability and Area scales are reported in Table 4. Overall reliabilities are impressive, with Cronbach's Alpha values well above .80 for both scales. This suggests that the scale used to measure Missouri's FPHS model is operating consistently; reliably measuring high-scoring and low-scoring groupings. When the scales are examined based upon the Yes and No clusters, however, some weakening of reliability is observed. Reliability weakens more so for Areas than Capabilities.

Part of this weakening is the expected attenuation for the decreased sample sizes; scales with more cases (i.e., 112 LPHAs) will naturally have higher reliabilities than when the same scale is calculated on a subgroup of 36. However, the change in reliability is also a reflection of the cluster analysis subdivisions. The reduction in reliability coefficient also reflects the greater variability in answering patterns, especially among the Areas. The FPHS Capabilities maintain consistency, indicating that overall LPHA functionality is a more coherent set of skills; whereas, meeting minimum provision in one FPHS Area is no guarantee that service provision will be equally high in other Areas. FPHS Areas are more separate from one another with less overlap in skill sets or "shorter coattails" in terms of bringing along other Areas. Among the FPHS Capabilities, by contrast, higher capacity in one capability is more reliably related to provision in all of the other capabilities.

The reliability analysis also identifies which services are most different from the others; identifying "areas for improvement" or at least further exploration. Each cluster also has one

service that further weakens its reliability: Accountability and Performance Management for Capability and Injury Prevention for Area. These two services were rated most different from the others in its scale and likely indicate areas of greatest capacity deviation. As before the clusters were classified as Yes, for the cluster of LPHAs that were overall able to provide most of services specified in the Capabilities or Areas, and No, for LPHAs who overall lacked capacity to provide the services specified in the Missouri FPHS model.

Table 4

Reliabilities for Capability and Area Scales

	Capabilities				Areas		
	Cronbach's Alpha	*N*	Items		Cronbach's Alpha	*N*	Items
Overall scale	.889	111	7	Overall scale	.837	112	6
Capability Yes	.778	50	7	Area Yes	.534	76	6
Capability No	.714	61	7	Area No	.664	36	6

Comparison of Clusters on the FPHS Model

Having established the reliability and validity of the clusters identified in the cluster analysis, the evaluation next turned to examining how the clusters differed, first on the endogenous variables that defined the clusters, and then on various exogenous variables that might help clarify the characteristics of the clusters or identify explanatory causal differences between the clusters. Notably, the clusters were similar on many of their characteristics, only further highlighting the roles of characteristics on which they differ.

Tables and Charts Describing the FPHS Model Cluster Analysis Results

Table 5 shows descriptive statistics for the seven capabilities in the FPHS model. The results are presented collectively and then separated by clusters, considering only the self-reported capacities for FPHS Capabilities. Each of the capabilities in the Yes cluster have higher mean scores than the No cluster, indicating that the cluster analysis successfully differentiated two groups. Three of the seven capabilities in the No cluster average below 3, the cutoff for lack of capacity. Three of the remaining capabilities average above 3, but below 4. Both clusters were above 4.0 for Emergency Preparedness and Response, indicating that this is the highest functioning capability in the LPHAs, but average scores in the No cluster were consistently lower for the remaining capabilities. As will be discussed later, the average of per capita revenue for LPHAs in the Yes cluster was $56.98, compared to $42.54 for the No cluster, an average difference of $14.44 per capita.

Table 5

Comparison of Yes and No Capability Clusters Illustrating Mean Differences

Capability (7)	Yes (n = 50)		No (n = 61)		Total (N = 111)	
	Mean	SD	Mean	SD	Mean	SD
Assessment and Surveillance	4.40	0.64	2.94	0.95	3.60	1.10
Emergency Preparedness and Response	4.83	0.38	4.08	0.59	4.42	0.63
Policy Development and Support	4.39	0.63	2.57	1.02	3.39	1.25
Communications	4.85	0.41	3.62	0.98	4.17	0.99
Community Partnership Development	4.92	0.50	3.74	1.06	4.27	1.04
Accountability and Performance Management	4.03	0.95	2.84	1.12	3.38	1.20
Organizational Administrative Competencies	4.54	0.59	3.43	0.76	3.93	0.88

Note. One LPHA did not answer one set of items and could not be included in the cluster analysis for capabilities.

Average Performance Between Clusters

Table 6 shows descriptive statistics for the six Areas in the FPHS model. The results are presented collectively and then separated by clusters, considering only the self-reported capacities for FLHS Areas. Each of the capabilities in the Yes cluster have higher mean scores than the No cluster, indicating that the cluster analysis successfully differentiated two groups. The No cluster was smaller for Areas than for Capabilities (n = 36 vs. 61), but five of the Areas in the No cluster averaged below 3, indicating much greater lack of capacity for Areas than for

Capabilities. Both clusters were above 4.0 for Communicable Disease Control, marking this as the highest functioning capability among the LPHAs, a welcome finding during the time of COVID-19. All LPHAs in Missouri are able to provide foundational services for Communicable Disease Control. A similar funding pattern emerged with Areas as with Capabilities: the average of per capita revenue for LPHAs in the Yes cluster was a similar $54.79, but this time the No cluster averaged $37.30 (compared to $42.54 for Capabilities).

Table 6

Comparison of Yes and No Area Clusters Illustrating Mean Differences

Area (6)	Yes (n = 76)		No (n = 36)		Total (N = 112)	
	Mean	SD	Mean	SD	Mean	SD
Communicable Disease Control	4.84	0.33	4.02	0.80	4.58	0.65
Environmental Public Health	4.03	0.77	2.99	0.83	3.70	0.92
Maternal Child Family Health	4.21	0.57	2.84	0.73	3.77	0.89
Chronic Disease	3.88	0.83	2.34	0.92	3.38	1.12
Injury Prevention	3.75	1.05	2.56	1.24	3.36	1.24
Access to and Linkage with Clinical Care	3.75	0.67	2.48	0.68	3.34	0.90

Do the FPHS Clusters Reflect Levels of Urbanization?

Informal discussions with public health professionals in Missouri during and after numerous meetings about the FPHS model revealed a widely-held belief that level of urbanization among LPHAs was highly predictive of their relative performance. Whether the root cause was state funding inequities, funding mechanisms (i.e., mill tax), turnover among directors, or ability to recruit and retain qualified public health professionals to a given region,

the urban vs. rural divide was often mentioned as an indicator of the ability for LPHAs in various regions of the state to perform to the level of other LPHAs.

Given this speculation about the effects of urbanization, it was only logical that the next step in understanding the clusters would be to explore whether their capacity levels were related to their level of urbanization. The LPHAs were separated into urbanization categories based upon their 2010 population density: rural (< 20K) densely settled rural (< 40K) semi-urban (< 150K) urban (>150K). The urbanization categories were then compared to their distribution within the Yes and No clusters for both Capabilities and Areas.

The answer to the question of whether FPHS capacity is related to level of urbanization is that it does not appear so, or at least not in the way commonly expressed. No appreciable differences emerged in either Capability or Areas clustering between levels of urbanization. Chi square analyses for the Capabilities and Areas were both non-significant. Table 7 shows the distributions of LPHAs based on level of urbanization for the Yes and No clusters split out by Capabilities and Areas, along with statewide percentages. Distributions of urbanization line up precisely with statewide percentages, as expected.

For the Capability clusters, for both urban and rural were below expected percentages in the No cluster. Densely settled rural and semi-urban were slightly over-represented in the No cluster, but not statistically significantly different (Pearson Chi-Square (3, N = 111) = 5.098, p = .165, Phi = .214, *ns*). Similarly, for the Area clusters, urban and semi-urban lined up very closely with statewide percentages, and rural performed better than expected, but no statistically significant differences emerged (Chi-Square (3, N = 112) = 1.853, p = .603, Phi = .129, *ns*). For

both clusters, densely settled rural LPHAs (but not rural) were over-represented in the No cluster by about 6 percentage points

Table 7

Are the FPHS Clusters a Function of Urbanization?

	Level of Urbanization			
	Capability Clusters			
	Rural	Densely settled rural	Semi-urban	Urban
Yes Cluster	14	13	14	9
% w/in Yes	28.0%	26.0%	28.0%	18.0%
No Cluster	13	23	21	4
% w/in No	21.3%	37.7%	34.4%	6.6%
Total	27	36	35	13
% w/in Cluster	24.3%	32.4%	31.5%	11.7%
	Area Clusters			
	Rural	Densely settled rural	Semi-urban	Urban
Yes Cluster	21	23	23	9
% w/in Cluster	27.6%	30.3%	30.3%	11.8%
No Cluster	6	14	12	4
% w/in Cluster	16.7%	38.9%	33.3%	11.1%
Total	27	37	35	13
% w/in Cluster	24.1%	33.0%	31.3%	11.6%
State Average	**24.1%**	**33.0%**	**31.3%**	**11.6%**

The Predictive Relationship between FPHS Capability and Area Clusters

Another expectation that emerged from discussions with other states during Public Health National Center for Innovations (PHNCI) conferences, and which was explicit in many FPHS models promulgated by other states, was that FPHS Capabilities were necessary to provide FPHS Areas. According to this theory, LPHAs must first build their capacity to provide Capabilities,

because the ability to provide the more public-facing FHPS areas was predicated upon Foundational Capabilities that underlay all other public health work. What was not apparent from any of these discussions or models was whether this theory had actually been tested in practice.

To evaluate whether establishing Capabilities predicted better performance for Areas, the capacity clusters for Capabilities and Areas were cross tabulated. As is revealed in Table 8 and in Figure 3, being in the Yes cluster for Capabilities was statistically significantly related to being in the Yes cluster for Areas (Pearson Chi-Square (1, $N = 111$) = 38.452, $p < .001$). Only one LPHA in the Yes cluster for Capabilities was in the No cluster for Areas.

These findings establish that LPHA Capability performance predicts Area performance, specifically, LPHAs who provide minimum FPHS Capabilities are 2.3 times more likely to provide in FPHS Areas than LPHAs who do not meet Capability minimums. LPHAs in the No cluster for Capabilities were 65.9% less likely to be able to provide FPHS Areas than LPHAs who provided minimum FPHS Capabilities. Only 42.6% of LPHAs in the No group for Capability were in the Yes group for Areas, compared to 98% of LPHAs who were in the Yes group for Capability. These findings strongly support the contention that FPHS Capabilities are foundational to providing FPHS Areas and appear to represent the first time the link between Capabilities and Areas provision has been empirically tested.

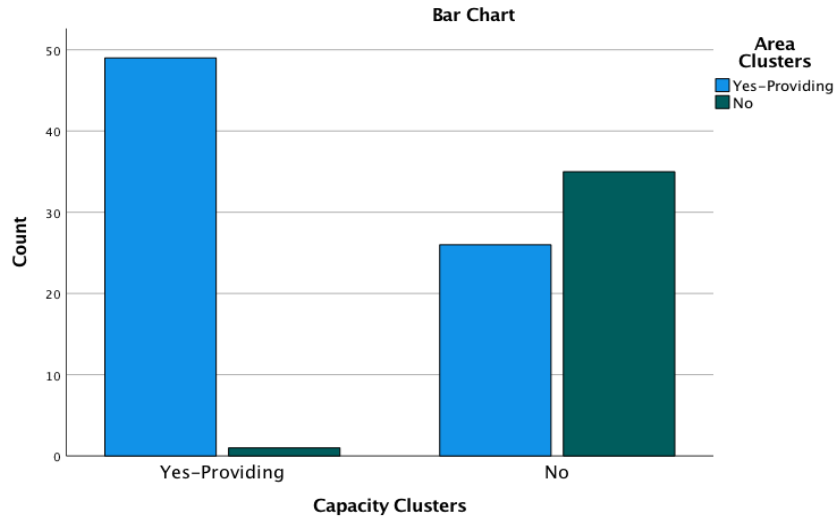
Table 8

Does establishing Capabilities predict better performance for Areas?

			Area Clusters		Total
			Yes	No	
Capability Clusters	Yes	Count	49	1	50
		% within Capability	98.0%	2.0%	100%
	No	Count	26	35	61
		% within Capability	42.6%	57.4%	100%

Figure 3

Bar chart showing that within the Yes Cluster for Capabilities almost all LPHAs also provided in the Areas



Note: The X axis actually displays FPHS Capability clusters, not "capacity" clusters.

Relationships between Funding Levels, FTEs, and FPHS Services

Considering that funding levels for Yes group LPHAs were uniformly higher than for the No group LPHAs, the next step was to explore whether levels of funding or rate of Full Time Employees (FTEs) were correlated to any of the FPHS services. In order to examine whether counties with a higher funding per resident or with a higher FTE to population ratio were

performing better, both the funding and FTE variables were correlated with the average score for each of the services specified in the FPHS model.

The overall lack of significant correlations between any of the FPHS Areas with funding level or FTEs, indicates that LPHAs make individualized decisions about how to allocate resources, perhaps dependent on local needs, and no generalizable pattern exists between level of funding or availability of employees and any particular service. The relatively weak correlations can be readily explained if employee time and resources are continually redirected in response to real-world needs within the LPHA. This idea will be explored further in the recommendation about flexibility in funding allocation. As is shown in Table 9, funding level was significantly correlated only with the *Accountability and Performance Management* capability. FTEs correlated with three capabilities, the strongest being with *Accountability and Performance Management* (r = .262).

Table 9

Correlations between FPHS Services and Funding Level and FTEs

	Capabilities			Areas	
	Total Revenue All Sources	Total FTEs		Total Revenue All Sources	Total FTS
Emergency Preparedness and Response	.036	.031	Communicable Disease Control	.093	.065
Policy Development and Support	.185	.215*	Chronic Disease	.089	.099
Communications	.147	.145	Access to and Linkage with Clinical Care	.124	.116
Community Partnership Development	.129	.093	Injury Prevention	.020	-.032
Organizational Administrative Competencies	.173	.173	Maternal Child Family Health	.105	.073
Accountability and Performance Management	.225*	.262**	Environmental Public Health	.139	.128
Assessment and Surveillance	.177	.198*			

Financial Characteristics of the Clusters

To follow up on the funding question and perhaps to find some clearer answers about the relationship between funding levels and the FPHS model, we next examined a variety of other financial characteristics of LPHAs to see how they differed between the Yes and No clusters. The same financial characteristics were considered separately for Capabilities and Areas to observe any patterns that emerged.

Interpreting the Tables 10 and 11 may be simplified by examining the Cohen's *d* effect sizes (Cohen, 1988). The effect sizes standardize the magnitude of the mean difference by dividing it by the standard deviation. The resulting value can be interpreted as 0 to .20 being a small effect, .21 to .5 being medium, and values over .5 being large. Negative values of Cohen's *d* are interpreted exactly the same as positive values; the negative sign indicating which group mean was higher. In addition, differences were explored with a t-test to determine if any were statistically significant.

Financial Characteristics of Clusters

As expected, LPHA characteristics like number of paid holidays for staff and annual fringe rate percentage had very small effects on FPHS services. Unexpectedly, tax rate also had a tiny or negative effect (for Areas), something that will be discussed in the context of revenue, shortly. Raw population size was weakly related and will be discussed as per capita numbers for clarity of comparisons. FTEs had a small effect on Areas but a much larger effect on Capabilities.

The only statistically significant differences between the Yes and No Capability groups were for *Per Capita Total Revenue* ($p = .02$, $d = .45$) and *Per Capita Local Revenue* ($p = .02$, $d = .47$). *Per Capita Total Revenue* ($p = .01$, $d = .55$) and *Per Capita Local Revenue* ($p = .04$, $d = .43$) were also the only statistically significant differences between the Yes and No Areas groups, as well. It is noteworthy that overall revenue (Total Revenue All Sources) did not differ for either the Capability ($p = .13$, $d = .32$, *ns*) or the Area ($p = .53$, $d = .13$, *ns*) clusters. This finding will be used in the upcoming costing assessment. It is not the overall level of funding but the

equitable distribution of funding per capita that best predicts whether the LPHA will be in the Yes group.

To the extent that the level of state funding is allocated consistently based upon a formula, the greatest variability in LPHA funding is a function of local sources. Therefore, these findings suggest that consistency of local revenue stream was a robust predictor of whether the LPHA was able to meet the Capabilities. Note that the actual tax rate (p = .80, d = .05, *ns*) was not a classifier, only whether the level of local funding was sufficiently high. LPHA leaders may consider what qualities of state vs. local funding might contribute to this difference.

Furthermore, the effect size for total FTEs was much stronger for Capabilities (d = .34) than for Areas (d = .08); money spent on hiring was a stronger classifier for the ability to provide in Capabilities. This raises an important question about the utility of increasing funding for FPHS Areas without consideration for the level of flexibility in how money is spent locally. Given that funding allocated to FPHS Areas is often specifically directed through contracts that may be too proscriptive and less responsive to local needs, decision makers should consider whether allowing more flexibility to local spending of dollars allocated to FPHS Areas might allow the LPHAs to have a greater impact in their communities.

Table 10

Comparisons of LPHA Financial Characteristics for Capabilities

Capability Clusters		Mean	*SD*	*t*	*p*	Mean Difference	Cohen's *d*
Population	Yes	66588.5	150235.2	0.95	0.34	21987.86	0.18
	No	44600.7	90217.8				
Tax Rate	Yes	0.20	0.10	0.26	0.80	0.10	0.05
	No	0.10	0.10				
Total Revenue All Sources	Yes	$3,181,284.62	$8,230,728.57	1.55	0.13	$1,906,607.35	0.32
	No	$1,274,677.27	$3,029,450.47				
Per Capita Total Revenue	Yes	$56.98	$37.45	2.37	0.02*	$14.44	0.45
	No	$42.54	$26.60				
Total Local Revenues	Yes	$2,193,907.02	$6,642,540.37	1.60	0.12	$1,537,669.60	0.34
	No	$656,237.42	$1,530,317.16				
Per Capita Local Revenue	Yes	$29.66	$20.83	2.47	0.02*	$8.11	0.47
	No	$21.54	$13.52				
Total FTEs for FPHS	Yes	24.5	36.6	1.70	0.09	10.38	0.34
	No	14.1	25.4				
Number of paid holidays for staff?	Yes	12.6	2.1	-.08	0.94	-0.03	-0.02
	No	12.6	1.9				
Annual fringe rate percentage?	Yes	27.3	12.0	1.24	0.22	3.15	0.24
	No	24.1	13.7				

Table 11

Comparisons of LPHA Financial Characteristics for Areas

Area Clusters		Mean	SD	t	p	Mean Difference	Cohen's *d*
Population	Yes	50419.1	123714.8	-.48	0.63	-11694.8	-0.10
	No	62113.9	114353.7				
Tax Rate	Yes	0.10	0.10	-.13	0.90	0.10	-0.03
	No	0.20	0.10				
Total Revenue All Sources	Yes	$2,371,710.69	$6,751,794.13	0.63	0.53	$769,122.79	0.13
	No	$1,602,587.89	$3,919,163.47				
Per Capita Total Revenue	Yes	$54.79	$34.06	2.74	0.01	$17.49	0.55
	No	$37.30	$25.43				
Total Local Revenues	Yes	$1,580,758.19	$5,438,464.17	0.79	0.43	$742,189.29	0.16
	No	$838,568.90	$1,973,804.58				
Per Capita Local Revenue	Yes	$27.64	$18.05	2.11	0.04	$7.37	0.43
	No	$20.27	$15.43				
Total FTEs for FPHS	Yes	19.5	30.5	0.40	0.69	2.52	0.08
	No	17.0	32.7				
Number of paid holidays for staff?	Yes	12.6	2.0	0.29	0.77	0.11	0.06
	No	12.5	1.9				
Annual fringe rate percentage?	Yes	26.0	13.9	0.46	0.65	1.27	0.10
	No	24.7	10.9				

Characteristics of the LPHA Director

Having considered which LPHA and local characteristics best predict classification into a Yes group, we turned next to the differences in FPHS provision based upon the characteristics of the Director or Administrator of the LPHA. For simplicity, this report will refer to the individual who has primary administrative oversight responsibility in an LPHA as the *Director*, while recognizing that the position may be assigned different titles in specific regions.

Employment Characteristics of Directors

To determine whether characteristics of the Director helped explain the likelihood of an LPHA to be classified in the Yes group, we examined FTE, salary, workload, and tenure of the Directors. As is shown in Tables 12 and 13, the No group LPHAs were generally lower in FTEs, salary, and tenure, and higher in hours worked per week than Directors in the Yes group; however, no statistically significant differences emerged with the exception of salary in the Capability cluster (p = .05, d = .38, mean difference = $10,776). Given that the salary difference for Directors in the Area cluster was $242, it would seem that the salary differential is only predictive for LPHA performance in Capabilities. This will be explored further in the next two sections.

Table 12

Comparisons of LPHA Director Characteristics for Capability

Capability Clusters		Mean	*SD*	*t*	*p*	Mean Difference	Cohen's *d*
Total FTE for Director	Yes	4.89	17.15	1.28	0.21	3.13	0.27
	No	1.75	2.69				
Annual salary of the Director	Yes	$77,847.64	$30,169.47	1.96	0.05*	$10,775.86	0.38
	No	$67,071.78	$27,380.51				
Avg. hours per week worked by Director	Yes	45.51	8.31	-.39	0.69	-0.58	-0.08
	No	46.09	7.16				
Years served as Director of this agency	Yes	10.02	7.80	0.75	0.46	1.17	0.14
	No	8.85	8.52				

Table 13

Comparisons of LPHA Director Characteristics for Areas

Area Clusters		Mean	*SD*	*t*	*p*	Mean Difference	Cohen's *d*
Total FTE for Director	Yes	3.74	13.99	0.78	0.44	1.85	0.16
	No	1.89	3.19				
Annual salary of the Director	Yes	$72,093.67	$26,816.82	0.04	0.97	$241.64	0.01
	No	$71,852.03	$33,470.34				
Avg. hours per week worked by Director	Yes	45.92	7.94	0.30	0.77	0.46	0.06
	No	45.46	7.10				
Years served as Director of this agency	Yes	9.11	8.01	-.49	0.63	-0.81	-0.10
	No	9.92	8.64				

Effects of Directors Multi-Tasking

Directors of some LPHAs have assistants and co-directors to assist with administrating the LPHA. Other LPHA Directors function not only as the Director, but also in one or more other roles at the LPHA. We explored whether having a Director who multitasked was in any way predictive of whether the LPHA was in the Yes group for Capabilities or Areas. The survey asked: "Does the Administrator/Director permanently fill other staff positions in the health department?" and the answers were cross tabulated with the cluster analysis. The findings are contained in Tables 14 and 15 and in Figure 4.

Having a director who works other positions is related to not providing FPHS Capabilities (Chi-Square (1, N = 111) = 6.952, p = .008). LPHAs whose directors fill other staff positions in the health department are 1.62 times more likely to be in the No group than LPHAs whose Directors have only one position. However, having a director who works other positions is NOT related to not meeting FPHS Area minimums (Chi-Square (1, N = 111) = 1.771, p = .183, Risk Estimate = 1.47).

Figure 4 shows the distribution of LPHAs. In the left chart, the pattern of the blue and gray bars is similarly configured for both the Yes and No groups, and also similar to the No-group in Capabilities. In the right chart (Capabilities), the pattern of the Yes group is inverse to the other patterns showing that LPHAs whose Directors multitask are less likely to be in the Yes group.

These findings support the contention established in previous findings in this report that that capacity for Capabilities is more director-related, than for Areas. Delivering services in Areas involves specific staff who must be hired and are therefore less likely to be affected by Director turnover. When Directors are forced to multi-task, most likely due to limited budgets, it affects the ability of the LPHA to provide the FPHS Capabilities. Previous findings confirm that the funding for the No group LPHAs is, indeed, statistically significantly lower than for the Yes groups. In light of these findings, decision makers should consider whether LPHA directors need to be able to focus on Directing the LPHA and whether Director multitasking should be a criterion in considerations regarding resource allocation.

Table 14

Does the Administrator/Director permanently fill other staff positions in the health department?

Multitasking?		Capability Clusters		Total
		Yes	No	
Yes	Count	22	42	64
	% within	34.4%	65.6%	100%
No	Count	28	19	47
	% within	59.6%	40.4%	100%

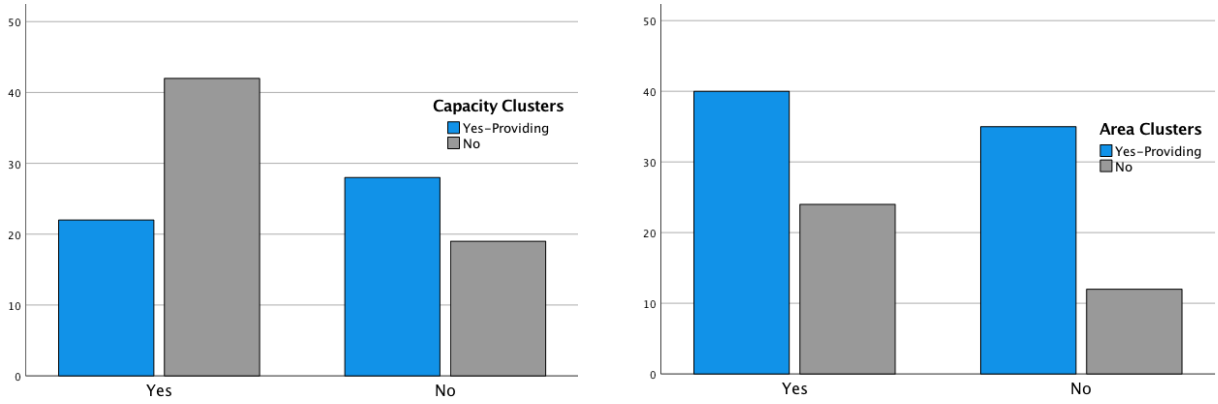
Table 15

Does the Administrator/Director permanently fill other staff positions in the health department?

Multitasking?		Area Clusters		Total
		Yes	No	
Yes	Count	40	24	64
	% within	62.5%	37.5%	100%
No	Count	35	12	47
	% within	74.5%	25.5%	100%

Figure 4

Bar charts for Capability and Area Clusters based on Director Working Multiple Positions



Effects of Director Tenure

Turnover within an LPHA occurs whenever an employee leaves the organization (Fishbein & Ajzen, 1975). When an LPHA Director leaves, the new Director will require training and time to fully replace the workload of the original Director, resulting in additional costs and loss of productivity for the LPHA (Roodt, 2004). In order to determine whether Director turnover affected the ability for an LPHA to deliver FPHS services, we compared length of Director tenure between the Yes and No groups.

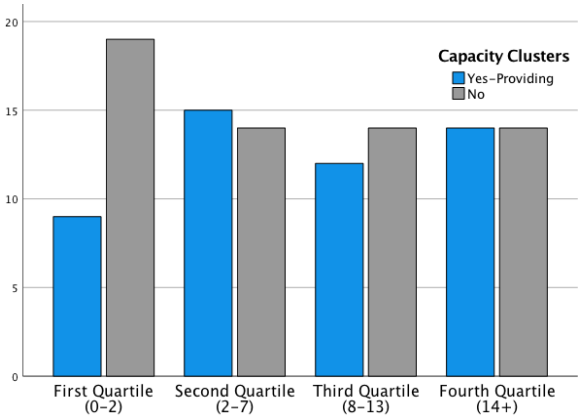
Because length of tenure was originally recorded as the number of years that the individual had served as the Director of that LPHA, the variables were converted into quartiles; 25% of Directors had served for 2 years or less. The quartiles were cross tabulated against the Capability and Area clusters.

As can be seen most clearly in Figure 5, the pattern of the blue and gray bars in the left bar chart (Areas) are generally similar, with a slight narrowing for the fourth quartile. No matter the tenure of the Director, the LPHA is equally likely to be in the Yes or No group. For the Capabilities however, the second through fourth quartiles are generally similar but the first quartile is overbalanced toward the No group with 67.9% of LPHAs whose Director has served less than 2 years in the No group.

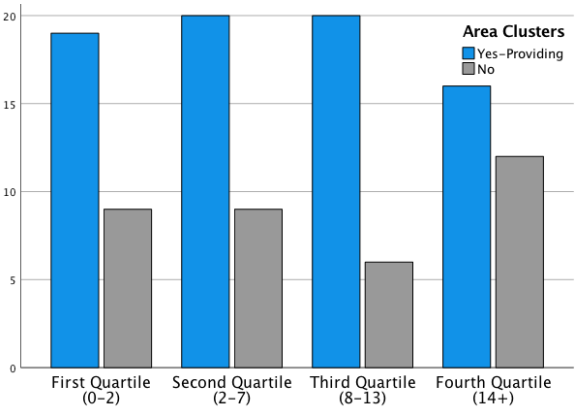
LPHA Director tenure is related to ability to meet minimums in the Areas or Capabilities only for Directors with 2 or fewer years of experience in the position, meaning that LPHA Directors need the most support within the first two years of their tenure. Consistent with other findings in this section, the characteristics of the LPHA Director are related to the ability to provide FPHS Capabilities, much less so for providing in the FPHS Areas. Decision makers should consider the usefulness of establishing a LPHA Director mentoring program in which Directors with more experience help new Directors get up to speed.

Figure 5

Bar charts for Capability and Area Clusters based on Director Tenure



Capability Clusters



Area Clusters

Table 16

How long has the Administrator/Director served at this LPHA for Capabilities?

		Capability Clusters		Total
		Yes	No	
First Quartile (0-2 years)	Count	9	19	28
	% within	32.1%	67.9%	100%
Second Quartile (2-7 years)	Count	15	14	29
	% within	51.7%	48.3%	100%
Third Quartile (8-13 years)	Count	12	14	26
	% within	46.2%	53.8%	100%
Fourth Quartile (14+ years)	Count	14	14	28
	% within	50.0%	50.0%	100%

Table 17

How long has the Administrator/Director served at this LPHA for Areas?

		Area Clusters		Total
		Yes	No	
First Quartile (0-2)	Count	19	9	28
	% within	67.9%	32.1%	100%
Second Quartile (2-7)	Count	20	9	29
	% within	69.0%	31.0%	100%
Third Quartile (8-13)	Count	20	6	26
	% within	76.9%	23.1%	100%
Fourth Quartile (14+)	Count	16	12	28
	% within	57.1%	42.9%	100%

Summary

The first step to getting a handle on the capacities within Missouri's public health system was to establish groupings of the LPHA capacities for the FPHS Capacities and Areas. Simple methods for establishing groupings were quickly ruled insufficient, so a two-step cluster analysis was deployed to divide the LPHAs into groups for comparison. In a best-case scenario, the cluster analysis identified two-and-only two groups for both Capacities and Areas and those groups turned out to break down along the same theoretical fractures as were designed into the FPHS evaluation schema.

The cluster analysis is a "black box" technique, so we used it to create the groupings and then examined the differences between clusters on a variety of variables. Very few criteria differed between the groups but the ones that did also aligned with theoretical assumptions: levels of funding and the tenure of the LPHA director. The clusters were not a function of population, as was often surmised in discussions of the urban vs. rural divide among Missouri's LPHAs. The clusters revealed good reliability and demonstrated that meeting minimum

standards for delivering FPHS capabilities was an excellent predictor for being able to deliver in FPHS Areas.

The most consistent predictor of belongingness within the clusters was level of funding. Although it may be expected that public health agencies all claim to need more money, this claim is now supported by evidence. Level of LPHA funding consistently emerged as a primary distinguisher between the clusters. LPHAs who met FPHS minimums were better funded than those that did not. Much of the money funding Missouri LPHAs come through federal contracts and is program oriented. Services may be prioritized based on funding streams rather than the actual needs of the LPHA and the community. Increasing the discretionary nature of funding is one way to shift funds to where they are needed most. Local funding was more important for FPHS Areas; state funding more strongly predicted capacity for Capabilities.

Consistent with considerations about funding, LPHA directors who were required to multi-task – taking on multiple roles within the LPHA instead of being able to function solely as the LPHA Director – were less likely to meet FPHS minimums for capabilities. Assuming that LPHA directors multitask because they do not have enough staff to fill needed roles, their divided attentions undermine the provision of Capabilities for the LPHA, although not the FPHS Areas. Much public health funding is directed to Areas and staff who specialize in those Areas will continue to function in their specializations even if there is turnover in the director's office. Characteristics of the Director had more influence on how the LPHA meets minimums for Foundational Capabilities. Annual salaries for Directors of LPHAs who were not meeting FPHS capability minimums were lower and they were much more likely to have served as LPHA director for 2 years or less. Considering that turnover during the COVID-19 pandemic has

resulted in one-quarter of Missouri's LPHAs now having a new Director, these findings suggest that LPHAs need support, training, and mentoring for LPHA Directors to be successful and set up LPHAs to succeed, as well. Annual salary and tenure as Director are not predictive of differences in FPHS Areas.

Chapter 3: FPHS Capabilities

FPHS Capabilities

LPHAs were asked about their capacity to provide each of the seven FPHS Capabilities.For each item, the LPHA was ranked on a scale of 1 to 6 in which scores 1 to 3 indicated that the service was not provided, and scores 4 to 6 indicated that the services were provided to some extent. If the FPHA indicated that they were unable to provide a specific service (scores 1 to 3), they were then asked a follow-up: “what would you need to provide this service”, along with seven options: hire more people with this expertise, specific training for our existing people, specific technology, partner with another LPHA, share with another entity, we face resistance in providing this, or we do not think this is necessary.

In each of the following sections, the LPHA responses have been agregated. The reader will find a map of regions in the state with a color coded map indicating the level of capacity. Darker colors indicate greater capacity and the colors are standardized across maps for compariblity. The maps are followed by a table summarizing capacity in each section of the capability and another table detaling what would be needed to improve delivery in that section. A final table contains a detailed breakdown of capacity in each section of the FPHS model.

A Note About Meeting Capability Minimums

LPHAs were asked what they would need in order to be able to fully provide in a given Capability Activity. The counts of those needs are based on individual Activities in which an LPHA reports not being able to meet a FPHS Capability. Only those FPHAs who did not meet the minimum (3) were asked the follow up question and a single LPHA may have identified

multiple sections for the FPHS model in which they lacked capacity; therefore, the total count is for number of responses, not the number of LPHAs.

Individual Capabilities

Assessment and Surveillance (AAS) Capability

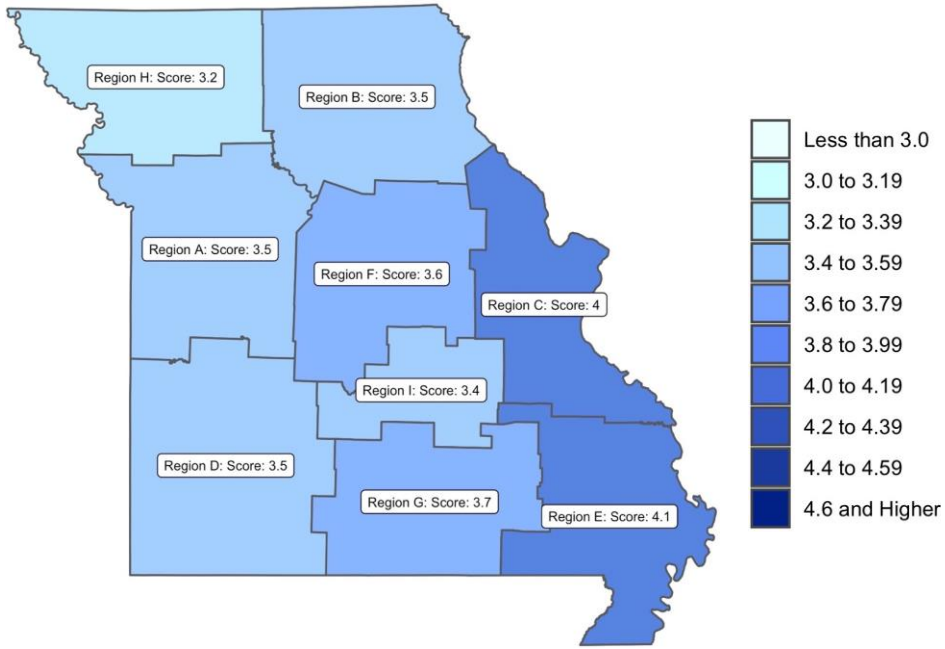
Assessment and Surveillance (AAS) is the capability to collect, analyze, and utilize data to guide public health planning and decision making. The AAS capability includes the ability to prioritize and respond to data requests, translate data into understandable reports, consider data through the lens of health equity and social determinants of health, and use data to identify local, regional and state public health priorities. Commonly used data include Behavioral Risk Factor Surveillance Survey (BRFSS), a youth survey (such as YRBS), and vital records, including the personnel, software, and hardware development that enable the collection of foundational data.

Regions C and E report the highest AAS capacity and Region H the lowest. Among LPHAs, 81.3% reported being able to collect public health data in their service community, a foundational ability to doing a community health assessment. Fewer, (44.2%) reported being able to utilize the Uniform Chart of Accounts. A chart of accounts is a classification structure for an accounting system that systematically organizes the agency's financial data. The Uniform Chart of Accounts for local and state public health agencies was developed and tested by Public Health Activities & Services Tracking (PHAST), who built on previous work using local and state financial accounting data to compare between local health departments in a state and between states, and to combine data across states to inform an accurate and reliable national estimate of revenue and expenditures by governmental public health agencies. A comprehensive

list of AAS capacity ratings is in Table 19. The greatest needs identified for improving AAS service are for hiring more staff and training existing staff.

Figure 6

Map of Assessment and Surveillance Capability



Regions Legend

Table 18

Capacity Responses for Assessment and Surveillance & What would you need to do Assessment and Surveillance effectively?

Data Collection	
Collect public health data	81.3%
Develop electronic HI systems	60.7%
Access electronic HI systems	63.8%
Analytic Capabilities	
Access data from 7 sources	69.8%
Utilize the Uniform Chart of Accounts	44.2%
Data Response/Report Preparation	
Respond to data requests	60.7%
Report stratified data	65.8%
Community Health Assessment Capability	
Conduct community health assessment	63.9%
Identify health priorities	75.7%
Contribute findings to statewide assessment	61.1%
Access to Lab Services	
Access laboratory resources for epidemiology	65.4%

AAS	Yes Cluster	No Cluster	Total
Hiring	5.3%	28.2%	33.5%
Training	8.1%	25.4%	33.5%
Technology	3.0%	16.5%	19.5%
Partner	0.3%	1.0%	1.3%
Support	1.5%	7.4%	8.9%
Resistance			-
Not necessary	1.0%	2.3%	3.3%
% of Total	19.30%	80.70%	3.94

Table 19

Detailed Capacity Responses for Assessment and Surveillance

Assessment and Surveillance	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to collect sufficient foundational data to develop and maintain electronic information systems to guide public health planning and decision making at the state and local level. Foundational data include Behavioral Risk Factor Surveillance Survey (BRFSS), a youth survey (such as YRBS), and vital records, including the personnel and software and hardware development that enable the collection of foundational data.							
Ability to collect primary public health data.	6.3%	10.7%	1.8%	42.9%	36.6%	1.8%	81.3%
Ability to develop and maintain electronic health information systems.	24.3%	9.3%	5.6%	24.3%	32.7%	3.7%	60.7%
Ability to access and utilize electronic health information systems.	21.0%	8.6%	6.7%	25.7%	34.3%	3.8%	63.8%
Ability to access, analyze, and use data from (at least) seven specific information sources, including (1) U.S. Census data, (2) vital statistics, (3) notifiable conditions data, (4) certain health care clinical and administrative data sets including available hospital discharge, insurance claims data, and Electronic Health Records (EHRs), (5) BRFSS, (6) nontraditional community and environmental health indicators, such as housing, transportation, walkability/green space, agriculture, labor, and education, and (7) local and state chart of accounts.							
Access, analyze, use and interpret data from U.S. Census, vital statistics, notifiable conditions, HER, BRFSS, health indicator, MO chart of accounts.	7.5%	16.0%	6.6%	29.2%	36.8%	3.8%	69.8%
Access, analyze, use and interpret data from the universal chart of accounts.	20.2%	26.0%	9.6%	19.2%	23.1%	1.9%	44.2%

Assessment and Surveillance	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to prioritize and respond to data requests, including vital records; ability to translate data into information and reports that are valid, statistically accurate, and accessible to the intended audiences.							
Ability to respond to data requests with meaningful reports (valid, statistically accurate, and accessible, understandable, and actionable by intended audiences).	12.1%	17.8%	9.3%	33.6%	24.3%	2.8%	60.7%
Ability to report data that are stratified by age, race/ethnicity, gender, and socioeconomic status.	13.9%	13.9%	6.5%	26.9%	36.1%	2.8%	65.8%
Ability to conduct a community and statewide health assessment and identify health priorities arising from that assessment, including analysis of health disparities.							
Ability to conduct a community health needs assessment.	14.8%	12.0%	9.3%	22.2%	35.2%	6.5%	63.9%
Ability to identify health priorities arising from a community health needs assessment, including identifying health outcome disparities.	9.3%	4.7%	10.3%	29.0%	40.2%	6.5%	75.7%
Ability to contribute local health needs assessment findings to a statewide health needs assessment.	12.0%	16.7%	10.2%	23.1%	36.1%	1.9%	61.1%

Assessment and Surveillance	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to access 24/7 laboratory resources capable of providing rapid detection.							
Ability to access 24/7 laboratory resources that are capable of providing rapid detection of disease.	31.8%	2.8%	0.0%	22.4%	40.2%	2.8%	65.4%

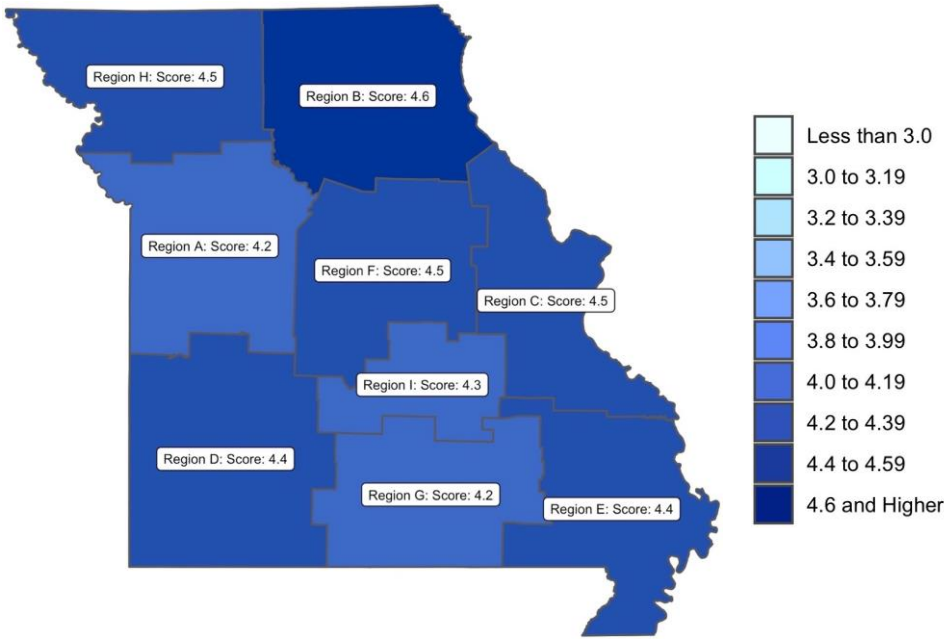
Emergency Preparedness and Response (EPR) Capability

The Emergency Preparedness and Response (EPR) capability reflects the ability to promote ongoing community resilience and preparedness, issue and enforce public health orders, share information with key partners and the general public, and lead the health and medical response to emergencies, and to address natural or other disasters and emergencies, including special protection of vulnerable populations. Natural disasters, emerging infectious diseases, and the potential for rapid spread of communicable disease require that public health agencies maintain a high level of preparedness for emergency response. All public health agencies should have the ability to lead in an emergency response, ensuring communication among organizations included in Emergency Support Function 8 - Public Health and Medical. Agencies should be able to issue and enforce emergency health orders, share key information with partners and the general public, and promote ongoing community resilience and preparedness.

EPR capacity is uniformly high across state, as is especially visible in the regions map. Most of the capacity rankings are in or approach the 90% level. The lowest ranking is for utilizing the Missouri Laboratory Response Network (MOLRN) at 50.9%. The wording describing this activity may have created some confusion, and potentially lowered this score. In practice, the state of Missouri is fully responsible to administer the lab, and the local agencies only need the capacity to communicate with the lab. The greatest need is for hiring, with training a close second.

Figure 7

Map of Emergency Preparedness and Response Capability



Regions Legend

Table 20

Capacity Responses for Emergency Preparedness and Response & What would you need to do EPR effectively?

Preparedness Strategies and Plans	
Develop public health emergency response plan	95.5 %
Address EPR needs of vulnerable populations	90.0 %
Emergency Support Function 8	
Lead Emergency Support Function 8	88.2 %
Incident Management System	
Activate public health emergency response	92.7%
Coordinate with emergency response partners	95.5%
Lead public health emergency response	93.7%
Continuity of Operations Plan (COOP)	
Maintain continuity of operations plan	94.6%
Finance public health emergency response	79.2%
Ongoing Community Readiness	
Promote community preparedness	96.4%
Emergency Health Orders	
Issue emergency health orders	87.5%
Enforce emergency health orders	76.5%
Notification 24/7	
Be notified of public health emergencies 24/7	97.3%
Respond to public health emergencies 24/7	94.5%

EPR	Yes Cluster	No Cluster	Total
Hiring	2.9%	38.3%	41.1%
Training	6.9%	25.7%	32.6%
Technology	1.7%	2.3%	4.0%
Partner	2.3%	0.0%	2.3%
Support	2.9%	10.3%	13.1%
Resistance	1.7%	5.1%	6.9%
Not necessary			-
% of Total	18.30%	81.70%	175

Laboratory Response Network	
Utilize the Missouri Laboratory Response Network (MOLRN)	50.9%

Table 21

Detailed Capacity Responses for Emergency Preparedness and Response

Emergency Preparedness and Response	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability and capacity to develop, exercise, and maintain preparedness and response strategies and plans, in accordance with established guidelines, to address natural or other disasters and emergencies, including special protection of vulnerable populations.							
Ability to develop and rehearse public health emergency response strategies and plans.	0.9%	1.8%	1.8%	28.8%	59.5%	7.2%	95.5%
Ability to address needs of vulnerable populations during a public health emergency.	5.4%	3.6%	0.9%	39.6%	48.6%	1.8%	90.0%
Ability to lead the Emergency Support Function 8 – Public Health and Medical for the county, region, jurisdiction, and state, by coordinating the public health, emergency, and medical response, including communication and resource sharing.							
Ability to lead the Emergency Support Function 8 Public Health and Medical for the jurisdiction.	2.7%	7.3%	1.8%	29.1%	55.5%	3.6%	88.2%
Ability to activate the emergency response personnel and communications systems in the event of a public health crisis; coordinate with federal, state, and local emergency managers and other first responders; and operate within, and as necessary lead, the incident management system.							
Ability to activate emergency response personnel in the event of a public health emergency.	2.7%	0.0%	4.5%	23.6%	61.8%	7.3%	92.7%

Ability to coordinate with emergency response partners from both private and governmental sectors.	1.8%	0.0%	2.7%	19.6%	69.6%	6.3%	95.5%
Emergency Preparedness and Response	**No-Not able**	**No-Difficulty**	**No-Priority**	**Yes-Minimal**	**Yes-Adequate**	**Yes-Excellent**	**Met**
Ability to lead emergency response utilizing the National Incident Management system, as well as any local emergency response processes during a public health emergency.	0.9%	2.7%	2.7%	27.0%	64.0%	2.7%	93.7%
Ability to maintain and execute a continuity of operations plan that includes a plan to access financial resources to execute an emergency and recovery response.							
Ability to maintain a continuity of operations plan (COOP).	4.5%	0.0%	0.9%	27.9%	62.2%	4.5%	94.6%
Ability to access to financial resources to execute emergency responses.	9.0%	7.2%	4.5%	34.2%	43.2%	1.8%	79.2%
Ability to establish and promote basic, ongoing community readiness, resilience, and preparedness by communicating with the public preparedness actions that may be taken before, during, or after a public health emergency.							
Ability to promote community preparedness through communication with the public before, during, or after a disaster.	1.8%	0.9%	0.9%	18.9%	71.2%	6.3%	96.4%
Ability to issue and enforce emergency health orders (community disease containment, mandated treatment, boil water orders, etc.).							

Ability to issue emergency health orders via statutory authority.	7.1%	2.7%	2.7%	18.8%	61.6%	7.1%	87.5%
Ability to enforce emergency health orders via statutory authority.	16.2%	4.5%	2.7%	31.5%	41.4%	3.6%	76.5%
Emergency Preparedness and Response	**No-Not able**	**No-Difficulty**	**No-Priority**	**Yes-Minimal**	**Yes-Adequate**	**Yes-Excellent**	**Met**
Ability to be notified of and respond to events on a 24/7 basis.							
Ability to be notified of public health emergencies on a 24/7 basis.	0.9%	0.9%	0.9%	5.4%	77.5%	14.4%	97.3%
Ability to respond to public health emergencies on a 24/7 basis.	2.7%	1.8%	0.9%	12.7%	72.7%	9.1%	94.5%
Ability to function as a Laboratory Response Network (LRN) Reference laboratory for biological agents and as an LRN chemical laboratory at a level designated by CDC.							
Ability to utilize and support the Missouri Laboratory Response Network (MOLRN) for identification of biological and chemical threats.	26.4%	17.3%	5.5%	17.3%	30.0%	3.6%	50.9%

Policy Development and Support (PDS) Capability

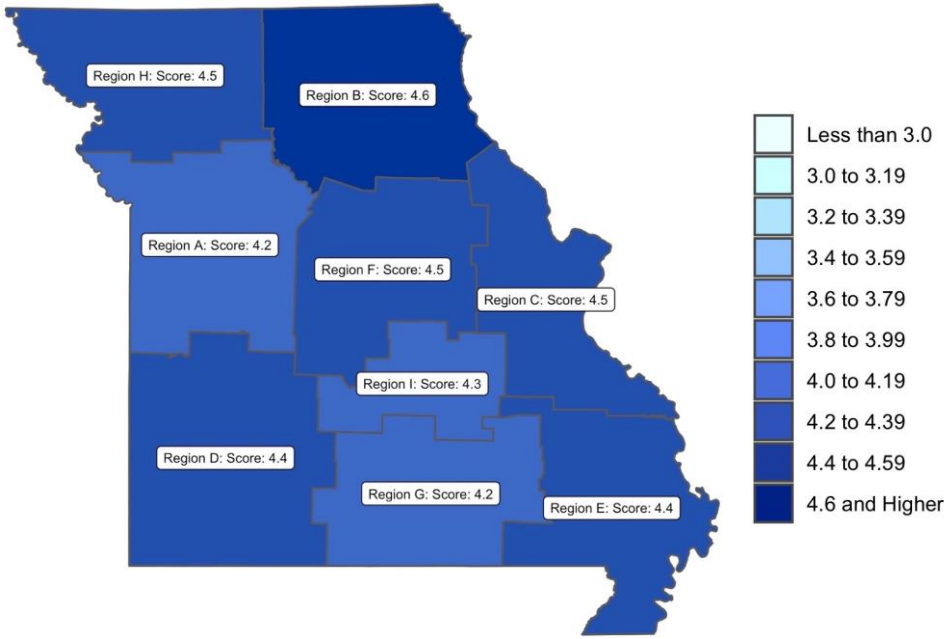
Good public health policies are essential to improve the physical, environmental, social and economic conditions that affect health. The Policy Development and Support (PDS) capability reflects the ability for every public health agency to serve as an expert resource for establishing, maintaining and developing basic public health policy recommendations that are evidence-

based, grounded in law and legally defendable. This ability includes researching, analyzing, costing out, and articulating the impact of such policies and rules where appropriate, as well as the ability to organize support for these policies and rules and place them before an entity with the legal authority to adopt them. Public health agencies should be able to effectively inform and influence policies being considered by other organizations in their jurisdiction.

All regions report the ability to provide this capability, but average rankings in the upper 50% range, indicate a softness in overall ability and disparity between those LPHAs who can and cannot deliver this service. Nearly 80% of LPHAs report being able to include the needs of vulnerable populations within recommendations for public health policies but over half are unable to research, analyze, cost out, and articulate the impact of public health policy recommendations. The greatest needs are for hiring and training (92.9%) and most of the LPHAs indicating these needs are in the No cluster (81.8%).

Figure 8

Map of Policy Development and Support Capability



Regions Legend

Table 22

Capacity Responses for Policy Development and Support & What would you need to do Policy Development and Support effectively?

Develop Policy Recommendations	
Develop basic public health policy recommendations	49.5%
Address the needs of vulnerable populations	78.3%
Cost/Benefit Analysis	
Analyze cost benefit impact of policies	47.2%
Organize support for public health policies	61.0%
Enact & Enforce Policies	
Work with partners to enact evidence-based policies	68.2%

PDS	Yes Cluster	No Cluster	Total
Hiring	4.4%	45.8%	50.2%
Training	6.9%	36.0%	42.9%
Technology	0.5%	1.0%	1.5%
Partner	0.0%	0.5%	0.5%
Support	1.0%	1.5%	2.5%
Resistance	0.0%	1.0%	1.0%
Not necessary	1.0%	0.5%	1.5%
% of Total	13.80%	86.20%	203

Table 23

Detailed Capacity Responses for Policy Development and Support

Policy Development and Support	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to serve as a primary and expert resource for establishing, maintaining, and developing basic public health policy recommendations that are evidence-based, grounded in law, and legally defendable. This ability includes researching, analyzing, costing out, and articulating the impact of such policies and rules where appropriate, as well as the ability to organize support for these policies and rules and place them before an entity with the legal authority to adopt them.							
Ability to develop evidence-based and legally feasible public health policy recommendations for legislative decision-makers.	20.7%	20.7%	9.0%	26.1%	22.5%	0.9%	49.5%

Policy Development and Support	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to include the needs of vulnerable populations within recommendations for public health policies.	11.3%	6.6%	3.8%	40.6%	36.8%	0.9%	78.3%
Ability to utilize cost/benefit information to develop action plans							
Ability to research, analyze, cost out, and articulate the impact of public health policy recommendations.	23.6%	25.5%	3.6%	24.5%	21.8%	0.9%	47.2%
Ability to organize support for public health policy recommendations and place them before an entity with the legal authority to adopt them.	17.1%	15.2%	6.7%	23.8%	34.3%	2.9%	61.0%
Ability to effectively inform and influence polices being considered by other governmental and non-governmental agencies within your jurisdiction that can improve the physical, environmental, social, and economic conditions affecting health but are beyond the immediate scope or authority of the governmental public health department.							
Ability to work with partners and policymakers to enact policies that are evidence-based and that address the social determinants of health.	12.1%	13.1%	6.5%	32.7%	33.6%	1.9%	68.2%

Communications (COM) Capability

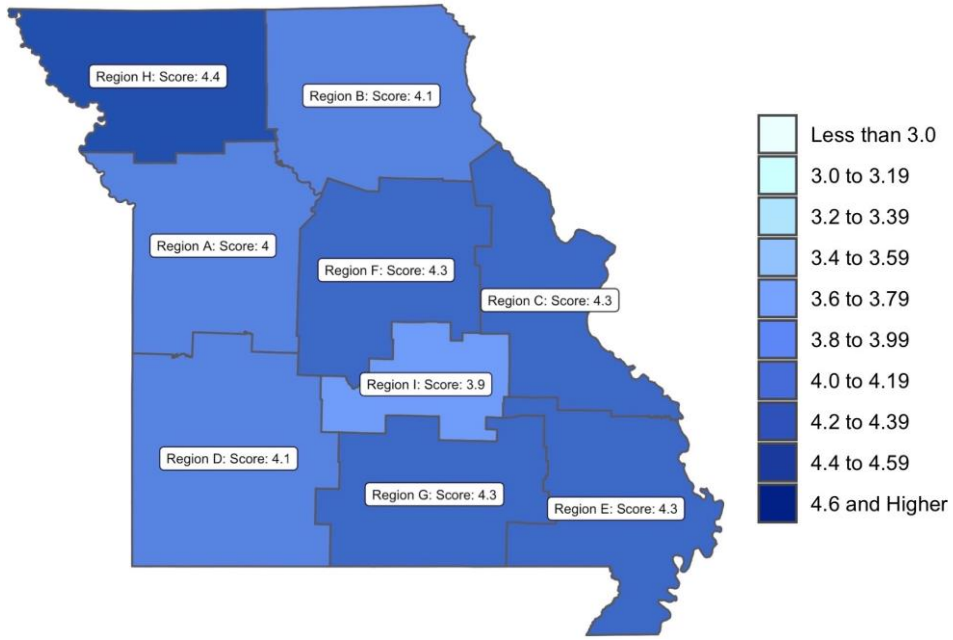
Communication involves sharing, receiving, and interpreting messages through a number of different techniques and pathways. Public health agencies should be able to write and implement an effective communication plan, execute risk communication strategies, and engage in two-way communication with internal and external audiences, including media. The

Communications (COM) capability reflects the ability to maintain ongoing relations with local and statewide media, including the ability to write a press release, conduct a press conference, and use electronic communication tools to interact with the media.

Successful public health outcomes depend on an agency's ability to clearly communicate proactive health education and disease prevention messages. Agencies should assure information is accessible, understandable, and actionable for all audiences. Public health professionals should be equipped to clearly articulate the role and value of public health. At the regional level, this capability appears robust, with over four-fifths being able to communicate about public health in written (91.5%), spoken (85.3%, or electronic (84.4%) format. The greatest needs are for hiring and training (80.0%) and most of the LPHAs with these needs are in the No cluster (72.8%).

Figure 9

Map of Communications Capability



Regions Legend

Table 24

Capacity Responses for Communications & What would you need to do Communications effectively?

Media Relations	
Maintain relations with local media	93.6%
Maintain relations with statewide media	57.8%
Communicate about public health via written communications	91.5%
Communicate about public health via public speaking	85.3%
Communicate about public health via electronic media	84.4%
Communication Plan	
Implement a strategic communication plan	75.2%
Communicate role of public health to public & policy makers	88.9%
Communication Strategy	
Implement a communication strategy	86.4%
Communicate in culturally and linguistically appropriate formats	81.9%
Reciprocal Public Communication	
Transmit information to the public	88.2%
Receive communications from the public	81.6%
Routinely communicate in culturally and linguistically appropriate formats	73.4%
Health Literacy	
Develop a proactive health education strategy	73.4%
Communicating all public health information in relevant formats	63.5%

COM	Yes Cluster	No Cluster	Total
Hiring	4.3%	45.3%	49.6%
Training	2.9%	27.5%	30.4%
Technology	0.0%	6.9%	6.9%
Partner	0.7%	2.2%	2.9%
Support	0.4%	3.6%	4.0%
Resistance	0.0%	0.7%	0.7%
Not necessary	1.4%	4.0%	5.4%
% of Total	9.8%	90.2%	276

Table 25

Detailed Capacity Responses for Communications

Communications	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to maintain ongoing relations with local and statewide media, including the ability to write a press release, conduct a press conference, and use electronic communication tools to interact with the media.							
Ability to maintain ongoing relationships with local media outlets.	3.6%	0.9%	1.8%	11.8%	69.1%	12.7%	93.6%
Ability to maintain ongoing relationships with statewide media outlets.	12.8%	11.0%	18.3%	15.6%	38.5%	3.7%	57.8%
Ability to communicate about specific public health issues via condensed written communications (press releases, issue briefs, epidemiology updates, etc.).	4.7%	0.9%	2.8%	21.5%	60.7%	9.3%	91.5%
Ability to communicate about specific public health issues via public speaking (press conferences, interviews, reporting to board, etc.).	6.4%	5.5%	2.8%	20.2%	59.6%	5.5%	85.3%
Ability to communicate about specific public health issues via electronic communication tools, on a 24/7 basis.	8.3%	3.7%	3.7%	21.1%	53.2%	10.1%	84.4%

Communications	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to write and implement a routine communication plan that articulates the health department's mission, value, role, and responsibilities in its community, and support department and community leadership in communicating these messages.							
Ability to develop and implement a strategic communications plan to articulate the agency mission, vision, values, roles, and responsibilities to the community.	8.3%	8.3%	8.3%	31.2%	37.6%	6.4%	75.2%
Ability to communicate the role of public health to the public and to policymakers.	3.7%	4.6%	2.8%	33.3%	50.0%	5.6%	88.9%
Ability to develop and implement a risk communication strategy, in accordance with Public Health Accreditation Board (PHAB) standards, to increase visibility of a specific public health issue and communicate risk. This includes the ability to provide information on health risks and associated behaviors.							
Ability to develop and implement a communication strategy to identify a specific public health issue and to communicate risk.	6.4%	5.5%	1.8%	23.6%	56.4%	6.4%	86.4%
Ability to provide information on health risks, healthy behaviors, and disease prevention in culturally and linguistically appropriate formats for the LPHA communities served.	13.6%	2.7%	1.8%	26.4%	50.0%	5.5%	81.9%

Communications	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to transmit and receive routine communications to and from the public in an appropriate, timely, and accurate manner, on a 24/7 basis.							
Ability to transmit timely, accurate, and credible routine communications to the public, on a 24/7 basis.	7.3%	2.7%	1.8%	21.8%	58.2%	8.2%	88.2%
Ability to receive routine communications from the public, on a 24/7 basis.	9.2%	0.9%	8.3%	19.3%	55.0%	7.3%	81.6%
Ability to routinely communicate in culturally and linguistically appropriate formats to the LPHA communities served.	18.3%	6.4%	1.8%	27.5%	43.1%	2.8%	73.4%
Ability to develop and implement a proactive health education/health prevention strategy (distinct from other risk communications) that disseminates timely and accurate information to the public in culturally and linguistically appropriate (i.e., 508 compliant) formats for the various communities served, including through the use of electronic communication tools.							
Ability to develop and implement a proactive health education strategy (distinct from other risk communications) that disseminates timely, accurate, and credible information to the public.	12.8%	8.3%	5.5%	26.6%	44.0%	2.8%	73.4%
Ability to address health literacy concerns in culturally and linguistically appropriate formats so that information is accessible, understandable, and actionable for the LPHA communities served.	21.5%	9.3%	5.6%	29.9%	30.8%	2.8%	63.5%

Community Partnership Development (CPD) Capability

The Community Partnership Development (CPD) capability reflects the ability to create, convene, and sustain strategic collaborative relationships with local, state, and regional partners, in keeping with the Public Health 3.0 model. Acting as their community's chief health strategist, agencies should have the ability to build trust and engage communities in strategic, evidence-based community health improvement initiatives. Collaboration may be sought with community groups or organizations representing populations experiencing health disparities or inequities; private businesses and health care organizations; and relevant federal, tribal, state, and local government agencies and non-elected officials. These initiatives should be guided by data and should address health inequities and social determinants of health. This capability was also strongly endorsed across the state, and most LPHAs provided in all of the areas. The needs in this capability averaged about one per LPHA, indicating that capacity was strong. Greatest needs were for hiring and training (84%).

Figure 10

Map of Community Partnership Development Capability

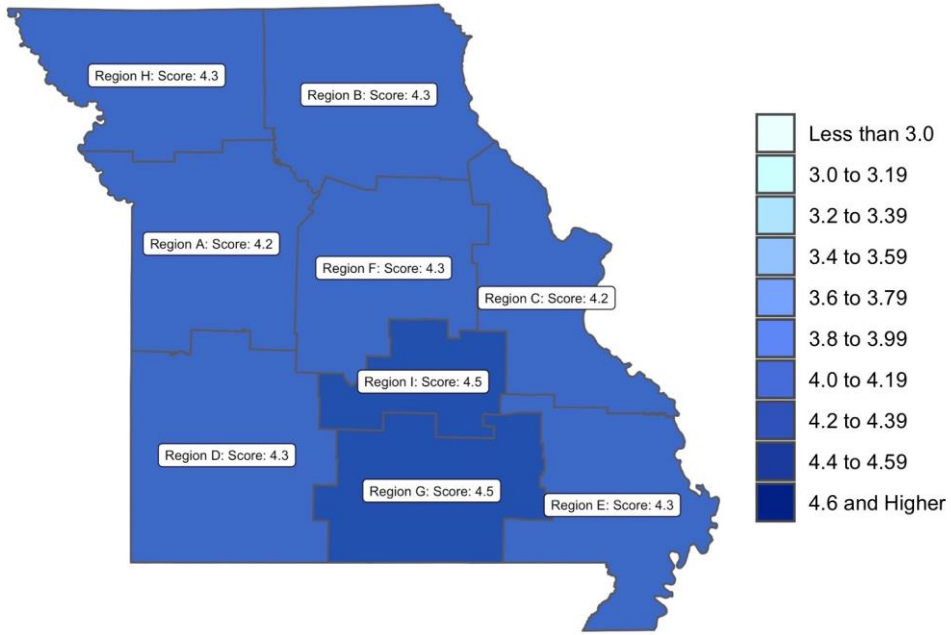


Table 26

Capacity Responses for Community Partnership Development & What would you need to do Community Partnership Development effectively?

Local Public Health Relations	
Create and maintain relationships with partners	91.9%
Coordinate public health efforts at the local level	89.3%
Strategic Partnerships	
Mobilize community partners to support public health policies	86.4%
Community Relations	
Create and maintain trust with the community	89.2%
Select & Articulate Roles	
Select public health roles	76.2%
Articulate public health roles	82.5%
Coordinate Roles	
Coordinate roles with partners	87.2%
Community Health Improvement Process (CHIP)	
Develop community health improvement plans	75.0%

CPD	Yes Cluster	No Cluster	Total
Hiring	2.3%	48.1%	50.4%
Training	1.5%	32.1%	33.6%
Technology			-
Partner			-
Support	0.0%	3.8%	3.8%
Resistance	0.0%	10.7%	10.7%
Not necessary	0.8%	0.8%	1.5%
% of Total	4.60%	95.40%	131

Table 27

Detailed Capacity Responses for Community Partnership Development

Community Partnership Development	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to create, convene, and sustain strategic, non-program specific relationships with key health-related organizations; community groups or organizations representing populations experiencing health disparities or inequities; private businesses and health care organizations; and relevant federal, tribal, state, and local government agencies and non-elected officials.							
Ability to create and maintain strategic, non-program-specific relationships with key community partners (i.e., health care organizations, governmental agencies, community groups, private businesses.)	3.6%	0.9%	3.6%	25.0%	58.9%	8.0%	91.9%
Ability to coordinate governmental public health efforts at the local level through dialog, periodic meetings, and leadership provided by the LPHA.	4.5%	3.6%	2.7%	23.2%	55.4%	10.7%	89.3%
Ability to create, convene, and support strategic partnerships.							
Ability to mobilize key community partners to support development of public health policies.	8.2%	0.9%	4.5%	29.1%	50.9%	6.4%	86.4%
Ability to maintain trust with and engage community residents at the grassroots level.							
Ability to maintain trust with and engage community residents at the grassroots level.	7.2%	0.0%	3.6%	30.6%	53.2%	5.4%	89.2%

Community Partnership Development	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to strategically select and articulate governmental public health roles in programmatic and policy activities and coordinate with these partners.							
Ability to strategically select governmental public health roles in programmatic and policy activities.	9.2%	7.3%	7.3%	31.2%	40.4%	4.6%	76.2%
Ability to articulate governmental public health roles in programmatic and policy activities to key community partners.	10.1%	3.7%	3.7%	28.4%	48.6%	5.5%	82.5%
Ability to convene across governmental agencies, such as departments of transportation, aging, substance abuse/mental health, education, planning and development, or others, to promote health, prevent disease, and protect residents of the health department's geopolitical jurisdiction.							
Ability to convene a broad, multi-sector assembly of public health and medical stakeholders to promote health, prevent disease, and protect residents within the community.	6.4%	2.8%	3.7%	22.9%	56.0%	8.3%	87.2%
Ability to engage members of the community in a community health improvement process that draws from community health assessment data and establishes a plan for addressing priorities. The community health improvement plan can serve as the basis for partnership development and coordination of effort and resources.							
Ability to engage community members to develop and implement community health improvement plans to address priorities identified in health assessments.	9.8%	8.9%	6.3%	34.8%	34.8%	5.4%	75.0%

Accountability and Performance Management (APM) Capability

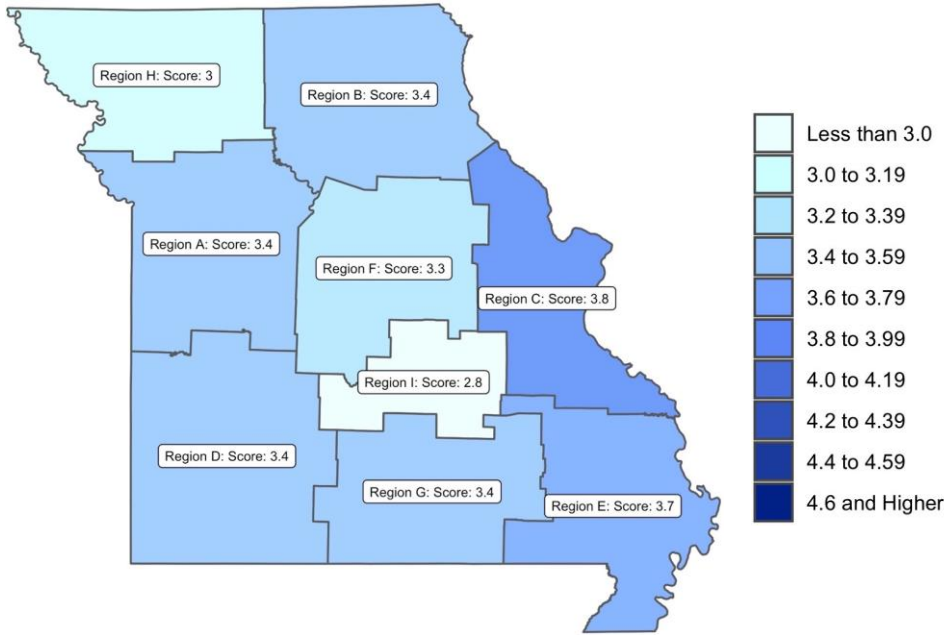
The Accountability and Performance Management (APM) capability reflects the ability to follow accepted business standards, integrate evidence-based practices, and maintain an organizational culture of continuous quality improvement. LPHAs should be able to assume responsibility for public health actions in accordance with relevant local, state, and federal laws and policies and to assure compliance with national and Public Health Accreditation Board Standards. APM capability focuses on continuous quality improvement in the public health system, including the ability to use evidence- based or promising practices, maintain an organization-wide culture of quality improvement, and use nationally recognized resources to monitor progress toward achieving organizational objectives.

This capability was one of the lower ranked in the model. Other than the *ability to uphold accepted business standards* (90.2%) half or fewer of LPHAs were able to provide in the remaining sections. Low scores in workforce development suggest the need for HR training and support. While some of this training could be outsourced, every Administrator needs to understand how to do an employee evaluation based on measurable competencies. Low scores for legal services capability could be addressed statewide through a contract with an organization that can research public health law and provide high quality counsel on request, as needed. Overall low scores for APM suggest the need for systemic training on establishing a strategic plan, how to

conduct a community health assessment, how to convene partners and collaboratively develop policies and then communicate those to the public.

Figure 11

Map of Accountability and Performance Management Capability



Regions Legend

Table 28

Capacity Responses for Accountability and Performance Management & What would you need to do Accountability and Performance Management effectively?

Accountability	
Uphold accepted business standards	90.2%
Assure compliance with national and PHAB standards	43.2%
Quality Assurance	
Develop a performance management system	54.5%
Quality Improvement	
Continuously evaluate and improve organizational processes	41.1%
Maintain a culture of quality improvement	50.5%

APM	Yes Cluster	No Cluster	Total
Hiring	14.9%	32.5%	47.4%
Training	10.1%	27.6%	37.7%
Technology	2.2%	3.5%	5.7%
Partner	0.0%	0.4%	0.4%
Support	0.0%	1.8%	1.8%
Resistance			-
Not necessary	1.3%	5.7%	7.0%
% of Total	28.50%	71.50%	228

Table 29

Detailed Capacity Responses for Accountability and Performance Management

Accountability and Performance Management	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to perform according to accepted business standards and assume responsibility for public health actions in accordance with relevant local, state, and federal laws and policies and to assure compliance with national and Public Health Accreditation Board Standards.							
Ability to uphold accepted business standards and assume responsibility for public health actions in accordance with relevant local, state, and federal laws and policies.	2.7%	1.8%	5.4%	20.5%	65.2%	4.5%	90.2%
Ability to assure compliance with national and Public Health Accreditation Board Standards.	28.4%	18.3%	10.1%	10.1%	29.4%	3.7%	43.2%
Ability to develop and maintain a performance management system to monitor achievement of organizational objectives.							
Ability to develop and maintain a performance management system to monitor achievement of organizational objectives.	19.1%	18.2%	8.2%	28.2%	24.5%	1.8%	54.5%
Ability to identify and use evidence-based and/or promising practices when implementing new or revised processes, programs and/or interventions at the organizational level.							
Ability to continuously evaluate and improve organizational processes, including using planning tools such as Plan-Do-Study-Act (PDSA) cycles.	26.2%	22.4%	10.3%	21.5%	15.9%	3.7%	41.1%

Accountability and Performance Management	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to maintain an organization-wide culture of quality improvement using nationally recognized framework quality improvement tools and methods.	22.0%	17.4%	10.1%	25.7%	21.1%	3.7%	50.5%

Organizational Administrative Competencies (OAC) Capability

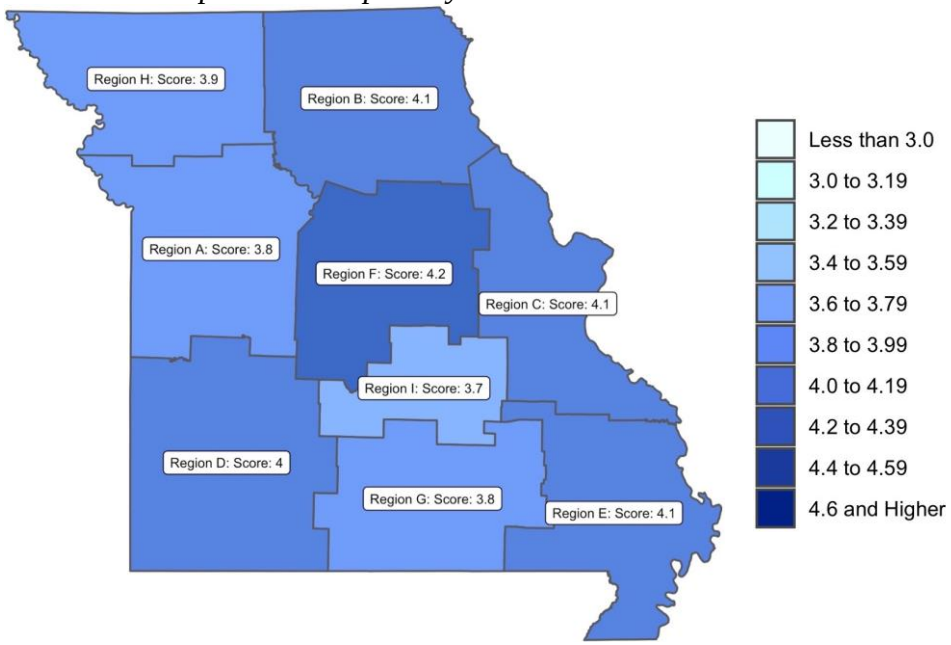
The Organizational Administrative Competencies (OAC) capability reflects the ability to demonstrate competence in cross-cutting skills required for governmental public health leadership. In order to deliver foundational public health programs and services, public health agencies should achieve competency in cross-cutting skills such as leadership and governance, information technology, human resources services, legal services, financial management, contract and procurement services, and facilities and operations management. Agencies should demonstrate competency advocating for the role of governmental public health, leveraging funding, defending budgets, incorporating ethical standards, assuring continuous quality improvement, using performance management systems, developing employees, adjusting to shifts in culture and environment, and managing change.

This capability was ranked generally strong. Fiscal management was ranked above 90% in all sections. Other areas averaged around 75%. The lowest service was to voluntarily pursue public health agency accreditation (27.7%). In order to better understand this finding, Table 33 shows a list of the barriers that LPHAs identified to becoming accredited in the next three years. Addressing gaps in equity capacity may be accomplished through partnerships with university schools of public health to assist

with analysis and measurement. Addressing issues with contracting would involve collaboration with DHSS to simplify the contracting process and to establish a master calendar of contract report due dates. Again, the greatest needs were for hiring and training, although the need for hiring was higher (46.3%) than for other capabilities.

Figure 12

Map of Organizational Administrative Competencies Capability



Regions Legend

Table 30

Capacity Responses for Organizational Administrative Competencies & What would you need to do OAC effectively?

Leadership and Governance	
Lead internal and external stakeholders to consensus and in action planning	66.1%
Serve as the public face of governmental public health	90.7%
Health Equity	
Strategically coordinate health equity programming	63.9%
Support health equity work	65.0%
Information Technology	
Support, maintain, and use electronic communication technology	75.8%
Access electronic health information	61.5%
Keep protected health information (phi) and confidential	83.8%
Human Resources	
Recruit and retain a competent public health workforce	72.3%
Deliver workforce training	66.3%
Engage in and document workforce performance review	69.7%
Fiscal Management	
Comply with fiscal standards regarding fiscal management, contract, and procurement	93.5%
Perform routine accounting activities	90.7%
Manage all outgoing contracts	92.4%
Manage all incoming grants/contracts	94.3%

OAC	Yes Cluster	No Cluster	Total
Hiring	8.9%	37.4%	46.3%
Training	7.9%	19.6%	27.6%
Technology	1.6%	11.0%	12.6%
Partner	0.2%	0.9%	1.2%
Support	1.2%	4.0%	5.1%
Resistance	0.0%	0.7%	0.7%
Not necessary	1.9%	4.7%	6.5%
% of Total	21.70%	78.30%	428

Facilities and Operations	
Procure, maintain, and manage safe facilities	90.5%
Legal Capabilities	
Access and use legal services in public health initiatives	68.8%
Accreditation	
Voluntarily pursue public health agency accreditation	27.7%

Table 31

Detailed Capacity Responses for Organizational Administrative Competencies

Organizational Administrative Competencies	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to lead internal and external stakeholders to consensus, with movement to action, and to serve as the public face of governmental public health in the department's jurisdiction. Ability to directly engage in health policy development, discussion, and adoption with local, state, and national policymakers, and to define a strategic direction of public health initiatives. Ability to engage with the appropriate governing entity about the department's public health legal authorities and what new laws and policies might be needed.							
Ability to lead internal and external stakeholders to consensus and in action planning.	10.7%	19.4%	3.9%	26.2%	35.0%	4.9%	66.1%
Ability to serve as the public face of governmental public health in the community.	6.5%	1.9%	0.9%	29.9%	56.1%	4.7%	90.7%

Organizational Administrative Competencies	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to strategically coordinate health equity programming through a high level, strategic vision and/or subject matter expertise which can lead and act as a resource to support such work across the department.							
Ability to strategically coordinate health equity programming relevant to the LPHA communities served.	13.3%	17.1%	5.7%	42.9%	20.0%	1.0%	63.9%
Ability to act as a resource to support health equity work across the department.	18.0%	13.0%	4.0%	29.0%	35.0%	1.0%	65.0%
Ability to maintain and procure the hardware and software needed to access electronic health information and to support the department's operations and analysis of health data. Ability to support, use, and maintain communication technologies needed to interact with community residents. Ability to have the proper systems in place to keep health and human resources data confidential.							
Ability to support, maintain, and use electronic communication technology.	16.5%	2.9%	4.9%	34.0%	36.9%	4.9%	75.8%
Ability to maintain and access electronic health information to support the public health agency operations and analyze health data.	25.7%	10.9%	2.0%	33.7%	23.8%	4.0%	61.5%
Ability to have proper systems in place to keep protected health information (PHI) and confidential organizational data restricted.	9.5%	5.7%	1.0%	17.1%	58.1%	8.6%	83.8%

Organizational Administrative Competencies	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to develop and maintain a competent workforce, including recruitment, retention, and succession planning; training; and performance review and accountability.							
Ability to recruit and retain a competent public health workforce with considerations for succession planning.	11.4%	10.5%	5.7%	33.3%	35.2%	3.8%	72.3%
Ability to deliver workforce training.	16.3%	11.5%	5.8%	39.4%	23.1%	3.8%	66.3%
Ability to engage in and document workforce performance review.	11.8%	9.8%	8.8%	27.5%	40.2%	2.0%	69.7%
Ability to establish a budgeting, auditing, billing, and financial system and chart of expense and revenue accounts in compliance with federal, state, and local standards and policies. Ability to secure grants or other funding (governmental and not) and demonstrate compliance with an audit required for the sources of funding utilized.							
Ability to comply with federal, state, and local fiscal standards and policies regarding fiscal management, contract, and procurement services.	3.7%	0.0%	2.8%	20.6%	62.6%	10.3%	93.5%
Ability to perform accounting activities including payroll, accounts receivable, general ledger, chart of accounts, and accounts payable.	5.6%	0.9%	2.8%	10.3%	65.4%	15.0%	90.7%
Ability to manage all contracts providing services for the agency, including pass-through dollars to consultants and other public and private organizations.	1.9%	1.9%	3.8%	15.2%	66.7%	10.5%	92.4%

Organizational Administrative Competencies	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Ability to manage all grants/contracts bringing money into the agency, including monitoring the compliance with state, federal, and sponsor requirements for the use of the dollars.	2.9%	1.0%	1.9%	18.1%	65.7%	10.5%	94.3%
Ability to procure, maintain, and manage resources to support agency operations (e.g., funding, assets, supplies, and hardware/software).							
Ability to procure, maintain, and manage safe facilities to support agency operations.	5.7%	1.9%	1.9%	21.7%	59.4%	9.4%	90.5%
Ability to access and appropriately use legal services in planning, implementing, and enforcing, public health initiatives, including relevant administrative rules and due process.							
Ability to access and appropriately use legal services in planning and implementing public health initiatives.	15.6%	11.9%	3.7%	22.9%	37.6%	8.3%	68.8%
Ability to voluntary pursue public health agency accreditation via the Public Health Accreditation Board (PHAB) or Missouri Institute for Community Health (MICH).							
Ability to voluntarily pursue public health agency accreditation via the Public Health Accreditation Board (PHAB) or Missouri Institute for Community Health (MICH).	37.6%	20.8%	13.9%	3.0%	18.8%	5.9%	27.7%

Progress Toward Accreditation

LPHAs were asked about their progress toward accreditation through Missouri Institute for Community Health (MICH) and/or their progress toward accreditation through national Public Health Accreditation Board (PHAB). Table 32 shows that 13.4% of LPHAs are currently accredited by MICH, 7.2% are accredited by or seeking accreditation from PHAB, and that 69.6% and 80.4% are not considering applying for accreditation from MICH or PHAB, respectively. Table 33 shows the barriers to accreditation. Two responses dominated: seeking accreditation is cost- (71.6%) and time-prohibitive (68.8%). Additional state funding could help LPHAs with costs, but additional staff may be necessary to give LPHAs sufficient time to work on accreditation.

Although it is not possible to offer recommendations about what the Missouri Public Health system *should do* based solely on these data, perhaps these findings will inform discussions among Missouri Public Health professionals about how accreditation standards relate to the FPHS model, what role accreditation will play in transformation, what barriers will need to be addressed and where, the level of support for accreditation, and how, when, or whether the topic of accreditation should be approached.

Table 32

Progress toward accreditation by MICH and/or PHAB

	MICH		PHAB	
	N	Percent	*N*	Percent
We are currently accredited and not due for reaccreditation for 2 years	15	13.4%	4	3.6%
We are currently accredited and not due for reaccreditation for 1 year	0		3	2.7%
We have applied accreditation and are currently completing documentation	0		1	0.9%
We are NOT currently accredited, but are considering applying within the next year	5	4.5%	2	1.8%
We are NOT currently accredited, but are considering applying within the next 2 years	14	12.5%	11	9.8%
We are NOT currently accredited, and we are not considering applying for accreditation	78	69.6%	90	80.4%
Missing			1	0.9
Total	112	100%	112	100%

Table 33

What barriers do you see to becoming accredited in the next 3 years?

			Level of urbanization			
	Percent of LPHAs citing this as a barrier		Rural	Densely settled rural	Semi-urban	Urban
Accreditation is cost prohibitive	78	71.6%	22	29	19	8
			28.2%	37.2%	24.4%	10.3%
Accreditation is time prohibitive	75	68.8%	18	28	22	7
			24.0%	37.3%	29.3%	9.3%
Developing a Workforce Development Plan	24	22.0%	7	6	8	3
			29.2%	25.0%	33.3%	12.5%
Developing a Community Health Improvement Plan	23	21.1%	7	7	8	1
			30.4%	30.4%	34.8%	4.3%
Developing an Agency Strategic Plan	21	19.3%	6	7	7	1
			28.6%	33.3%	33.3%	4.8%
Conducting a Community Health Assessment	18	16.5%	7	5	5	1
			38.9%	27.8%	27.8%	5.6%
Other barrier	14	12.8%	1	7	4	2
			7.1%	50.0%	28.6%	14.3%
No significant barriers	13	11.9%	3	1	5	4
			23.1%	7.7%	38.5%	30.8%

The second most common need among LPHAs in order to deliver services effectively was the need for additional training for their current staff. LPHAs were asked about how lack of training affected their ability to provide the 10 Essential Public Health Services. As is shown in Table 34, over half of LPHAs say that they do not have adequate training to provide for research or evaluate program effectiveness. The following table also contains the limitations that LPHAs identify as being made more difficult due to a lack of training for LPHA staff.

Table 34
Which 10 Essential Public Health Services are difficult to do because of lack of trained workforce?

	N	Percent of LPHAs
Research for new insights and innovative solutions to health problems	64	58.2%
Evaluate effectiveness, accessibility and quality of personal and population-based health services	49	44.5%
Enforce laws and regulations that protect health and ensure safety	43	39.1%
Develop policies and plans that support individual and community health efforts	39	35.5%
Assure a competent public and personal health care workforce	21	19.1%
Diagnose and investigate health problems and health hazards in the community	19	17.3%
None: Our workforce is sufficiently trained to do all 10 EPHS	19	17.3%
Mobilize community partnerships and actions to identify and solve health problems	18	16.4%
Monitor health status to identify and solve community health problems	14	12.7%
Inform, educate, and empower people about health issues	11	10.0%
Link people to needed personal health services and assure the provision of health care	10	9.1%

Chapter 4: FPHS Areas

FPHS Areas

LPHAs were asked about their capacity to perform activities in each of the six FPHS Areas. For each item, the LPHAs rated themselves on a scale of 1 to 6 in which scores 1 to 3 indicated that the service was not provided, and scores 4 to 6 indicated that the services were provided to some extent. If the FPHA indicated that they were unable to provide a specific service (scores 1 to 3), they were then asked a follow-up: “what would you need to provide this service”, along with seven options: hire more people with this expertise, specific training for our existing people, specific technology, partner with another LPHA, share with another entity, we face resistance in providing this, or we do not think this is necessary.

In each of the following sections, the LPHA responses have been agregated. The reader will find a map of regions in the state with color coding to indicate the level of capacity. Darker colors indicate greater capacity, and the colors are standardized across maps for compariblity. The maps are shaded to match the area of expertise as depicted in the FPHS model. The maps are followed by a table summarizing capacity in each section of the Area and another table detailing what would be needed to improve delivery in that section. A final table contains a detailed breakdown of capacity in each section of the FPHS model.

A Note About Meeting Area Minimums

LPHAs were asked what they would need in order to be able to fully provide in a given activity. The counts of those needs are based on individual activities in which an LPHA reports not being able to meet a FPHS Area. Only those FPHAs who did not meet the minimum (3) were

asked the follow up question and a single LPHA may have identified multiple sections for the FPHS model in which they lacked capacity; therefore, the total count is for number of responses, not the number of LPHAs.

Communicable Disease Control (CDC) Area

Public health agencies work with partners to slow and stop the spread of disease in a community. The Communicable Disease Control (CDC) Area reflects the ability to prevent and stop the spread of disease through strategies such as surveillance, investigation, education, and intervention. These communicable disease control strategies include using surveillance to quickly identify diseases that pose a threat to public health, isolating their cause, and preventing their spread using a variety of methods. Immunizations, community education, and non-pharmaceutical interventions like social distancing play a significant role in communicable disease control.

Communicable Disease Control is the strongest Area of provision with almost all categories above 90%. The only notable exception is for *Seeking funding for communicable disease control initiatives* (58.7%), which is not an outward-facing activity. *Enforcement of emergency health orders* (87.4%) was a significant issue with COVID-19. Although the LPHAs have the authority to issue orders, they depend on the voluntary good will of people to follow the orders. There exists uncertainty about the authority and process to *exercise quarantine authority* (91.9%). The uncertainty hampered many LPHAs from taking decisive action in the early weeks of the COVID-19 outbreak, motivated by concerns about legal action. Difficulty enforcing public health laws is likely to be exacerbated by new legislative challenges to local public health authority proposed for the 2021 legislative session by lawmakers reacting to public health

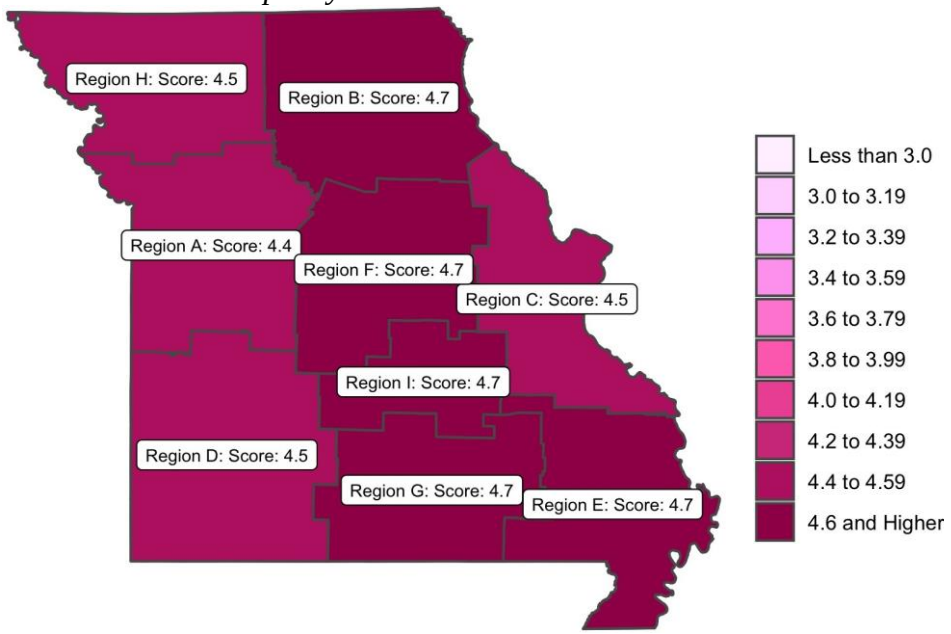
professionals promoting mask-wearing ordinances and encouraging social distancing or stay-at-home orders in response to the global COVID-19 pandemic. The public health response to the pandemic was resisted in many communities, especially rural communities, and has renewed concerns about potential legislative limitations to local public health authority.

Assuring the appropriate treatment of individuals with active tuberculosis (95.5%) is very time intensive. Improving this capability could possibly be an area for partnership or cross-jurisdictional sharing. *Assure access to STD and HIV testing* (92.8%) is a topic for further inquiry. LPHAs do not have to do the testing, just assure access to it. *Developing a communicable disease control plan* (75.3%) capacity can be improved with education and training.

The need for training was also apparent as LPHAs responded to questions about levels of communicable disease control training and capacity to respond to a communicable disease outbreak. As depicted in Tables 37 and 38, going into the pandemic, 95% of Missouri LPHAs had 10 or fewer trained contact tracers on staff and 66% had 5 or fewer. Statewide, LPHAs had 408 total staff trained to administer immunizations; 90% of LPHAs had six or fewer trained staff and over half (58%) had four or less. These numbers are likely higher now at approximately one-year into the COVID-19 pandemic. This area would benefit from a 1-year follow-up survey to track changes. The greatest need to improve provision in CDC (55.2%) is for additional hiring to effectively provide communicable disease control. Given the COVID-19 pandemic response demands placed upon the public health system in Missouri, the reader may find it reassuring that LPHAs report robust capacity to provide communicable disease control.

Figure 13

Map of Communicable Disease Control Area Capacity



Regions Legend

Table 35

Capacity Responses for Communicable Disease Control & What would you need to do Communicable Disease Control effectively?

Provide Information on Communicable Disease Control	
Provide information on prevention of communicable diseases	95.5%
Provide information on immunization	93.7%
Advocate for Communicable Disease Control Initiatives	
Identify communicable disease control community partners and their capacities	94.6%
Develop a communicable disease control plan	75.3%
Advocate and seek funding for communicable disease control initiatives	58.7%
Support community-based communicable disease control initiatives	93.5%
Receive Lab Reports, Respond to Outbreaks	
Receive laboratory and clinical reports	96.4%
Respond to communicable disease outbreaks	97.3%
Notification Services	
Assure notification for partners of newly diagnosed cases of reportable diseases	97.3%
Tuberculosis	
Assure the appropriate treatment of individuals with active tuberculosis	95.5%
Exercise quarantine authority	91.9%
Disease Investigation	
Conduct disease investigations	97.3%
Coordinate Other Communicable Disease Control	

CDC	Yes Cluster	No Cluster	Total
Hiring	16.1%	39.2%	55.2%
Training	8.4%	12.6%	21.0%
Technology	0.7%	2.8%	3.5%
Partner	0.0%	4.2%	4.2%
Support	4.9%	7.0%	11.9%
Resistance	2.8%	0.0%	2.8%
Not necessary	0.7%	0.7%	1.4%
% of Total	33.60%	66.40%	143

Programs or Services	
Facilitate enforcement of emergency health orders	87.4%
Support local screening/testing of reportable diseases	94.6%
Assure access to STD and HIV testing	92.8%

Table 36

Detailed Capacity Responses for Communicable Disease Control

Communicable Disease Control	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Provide timely, statewide- and locally relevant, and accurate information to the health care system and community on communicable diseases and their control.							
Provide timely, accurate, and locally relevant information on communicable diseases and their control.	2.70%	0.90%	0.90%	20.50%	67.90%	7.10%	95.50%
Provide timely, accurate, and locally relevant information on strategies to increase local immunization rates.	3.60%	0.00%	2.70%	30.60%	61.30%	1.80%	93.70%
Identify statewide and local communicable disease control community partners and their capacities, develop and implement a prioritized communicable disease control plan, and seek funding for high priority initiatives.							
Identify statewide, regional, and local communicable disease control community partners and their capacities.	4.60%	0.00%	0.90%	24.80%	67.00%	2.80%	94.60%
Communicable Disease Control	**No-Not able**	**No-Difficulty**	**No-Priority**	**Yes-Minimal**	**Yes-Adequate**	**Yes-Excellent**	**Met**

Develop and implement a communicable disease control plan prioritizing important communicable diseases.	9.20%	10.10%	5.50%	25.70%	46.80%	2.80%	75.30%
Advocate and seek funding for communicable disease control policies and initiatives.	16.50%	13.80%	11.00%	33.00%	22.90%	2.80%	58.70%
Support community-based initiatives for the prevention of communicable disease spread.	2.80%	0.00%	3.80%	34.00%	55.70%	3.80%	93.50%
Receive laboratory reports and other relevant data, conduct disease investigations, including contact tracing and notification, and recognize, identify, and respond to communicable disease outbreaks for notifiable conditions in accordance with local, national and state mandates and guidelines.							
Receive public health laboratory and clinical reports for reference and confirmatory testing related to communicable diseases.	1.80%	0.00%	1.80%	9.00%	78.40%	9.00%	96.40%
Identify and respond to communicable disease outbreaks in accordance with national, state, and local mandates and guidelines.	1.80%	0.00%	0.90%	12.50%	72.30%	12.50%	97.30%

Communicable Disease Control	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Assure the availability of partner notification services for newly diagnosed cases of syphilis, gonorrhea, and HIV according to CDC guidelines.							
Assure notification for partners of newly diagnosed cases of reportable diseases in accordance with national, state, and local mandates and guidelines.	1.80%	0.00%	0.90%	12.50%	72.30%	12.50%	97.30%
Assure the appropriate treatment of individuals who have active tuberculosis, including the provision of directly-observed therapy in accordance with local and state laws and Centers for Disease Control and Prevention (CDC) guidelines.							
Assure the appropriate treatment of individuals with active tuberculosis, including the provision of directly observed therapy in accordance with national, state, and local mandates and guidelines.	3.60%	0.00%	0.90%	8.00%	75.90%	11.60%	95.50%
Exercise quarantine authority in accordance with national, state, and local mandates and guidelines.	5.40%	0.90%	1.80%	11.70%	73.00%	7.20%	91.90%

Communicable Disease Control	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Support the recognition of outbreaks and other events of public health significance by assuring capacity for the identification and characterization of the causative agents of disease and their origin, including those that are rare and unusual, at the appropriate level.							
Conduct disease investigations, including contact tracing and notification.	0.00%	1.80%	0.90%	14.40%	71.20%	11.70%	97.30%
Coordinate and integrate categorically-funded communicable disease programs and services.							
Facilitate enforcement of emergency health orders via statutory authority (community disease containment, mandated treatment, boil water orders, etc.).	7.20%	2.70%	2.70%	22.50%	56.80%	8.10%	87.40%
Support local screening/testing of reportable diseases.	3.60%	0.00%	1.80%	16.20%	70.30%	8.10%	94.60%
Assure access to STD and HIV testing.	6.30%	0.00%	0.90%	17.10%	69.40%	6.30%	92.80%

Table 37

Staff Trained on Communicable Disease Contact Tracing

	Frequency	Percent	Cumulative Percent
75	1	1%	100%
24	1	1%	99%
22	1	1%	98%
14	1	1%	97%
12	1	1%	96%
10	2	2%	96%
9	1	1%	94%
8	3	3%	93%
7	6	5%	90%
6	8	7%	85%
5	14	13%	78%
4	9	8%	65%
3	26	23%	57%
2	28	25%	34%
1	7	6%	9%
0	3	3%	3%
Sum 537			

Table 38

Staff Trained to Administer Immunizations

	Frequency	Percent	Cumulative Percent
11	1	1%	100%
9	1	1%	99%
8	2	2%	98%
7	8	7%	96%
6	5	5%	89%
5	10	9%	85%
4	21	19%	76%
3	38	34%	57%
2	15	13%	23%
1	9	8%	10%
0	2	2%	2%
Sum 409			

Environmental Public Health (EPH) Area

Environmental health is a key part of any comprehensive public health system. According to the American Public Health Association: "Environmental health is the branch of public health that focuses on the relationships between people and their environment; promotes human health and well-being; and fosters healthy and safe communities." The Environmental Public Health (EPH) Area reflects the ability to advance policies and programs to reduce chemical and other environmental exposures in air, water, soil and food to protect people and provide communities with healthier environments.

This area showed moderate levels of provision and great consistency across regions, with all regions reporting an average capacity between 3.2 and 4.0. By far, the greatest need for effective provision in this area is hiring additional staff (55.9%). The areas of highest priority need for training in environmental public health are for *Environmental health disease investigations* (73.5%) and for *Retail food training* (59.0%); details are in Table 39. *Provide information on environmental public health issues* (81.1%) should be readily improvable with training and tools to frame messaging about environmental public health issues. Another area that could be shifted with training and tools is the capability to *develop an environmental public health plan* (67.0%).

Protecting the population from hazardous chemical exposure (59.1%) is done by the Local Emergency Planning Committee and fire department hazardous materials teams in MO. This may explain low scores for this activity. Only one LPHA

in Missouri is trained to respond to a radiation incident, (*protect the population from unnecessary radiation exposure*, 41.2%). There may be another entity responsible for this activity. *Participate in broad land use planning and sustainable development* (25.7%) has not historically been a local public health service in Missouri; however, participation in planning would require significant education for LPHAs to understand their role and the benefit to public health.

Figure 14

Map of Environmental Public Health Capacity

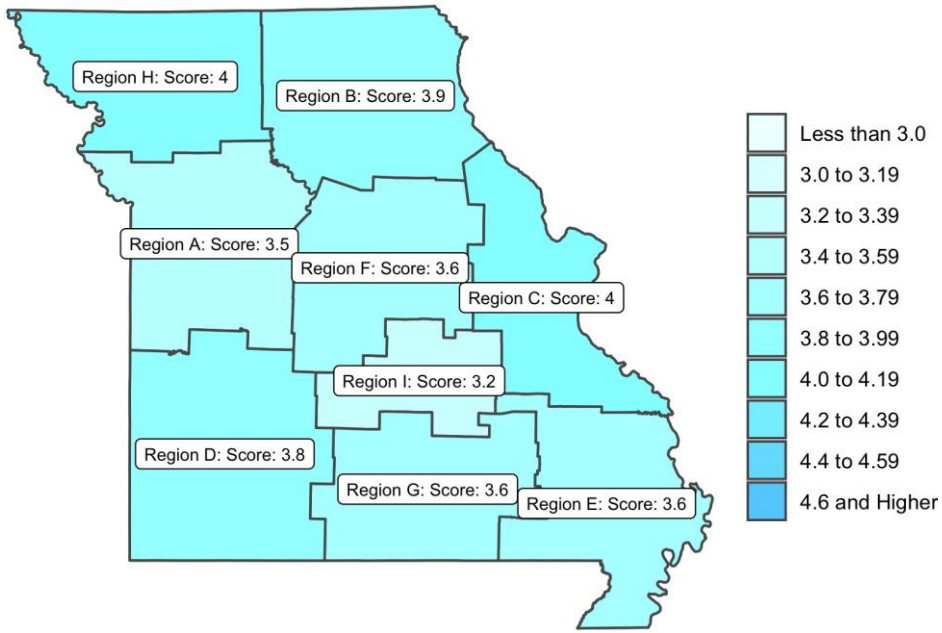


Table 39

Capacity Responses for Environmental Public Health & What would you need to do Environmental Public Health effectively?

Provide Information on Environmental Public Health	
Provide information on environmental public health issues	81.1%
Advocate for Environmental Public Health Initiatives	
Identify environmental public health community partners and their capacities	97.3%
Develop an environmental public health plan	67.0%
Advocate and seek funding for environmental public health initiatives	61.1%
Support community-based environmental public health initiatives	84.5%
Notifiable Public Health Threats	
Conduct mandated environmental public health laboratory testing	70.6%
Conduct mandated environmental public health inspections	88.4%
Radiation Exposure	
Protect the population from hazardous chemical exposure	59.1%
Protect the population from unnecessary radiation exposure	41.2%
Land Use and Sustainable Development	
Participate in broad land use planning and sustainable development	25.7%
Coordinate Other Environmental Public Health Programs or Services	
Coordinate other environmental public health services	70.5%

EPH	Yes Cluster	No Cluster	Total
Hiring	25.9%	30.0%	55.9%
Training	14.9%	6.1%	20.9%
Technology	1.4%	1.1%	2.5%
Partner	0.8%	1.4%	2.2%
Support	7.2%	6.9%	14.0%
Resistance	0.8%	0.6%	1.4%
Not necessary	1.9%	1.1%	3.0%
% of Total	52.90%	47.10%	363

Table 40

Detailed Capacity Responses for Environmental Public Health

Environmental Public Health	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Provide timely, statewide- and locally-relevant, and accurate information to the state, health care system, and community on environmental public health issues and health impacts from common environmental or toxic exposures.							
Provide timely, accurate, and locally relevant information on environmental public health issues and health impacts from both common and toxic exposure sources.	12.6%	3.6%	2.7%	27.9%	53.2%	0.0%	81.1%
Identify statewide and local community environmental public health partners and their capacities, develop and implement a prioritized plan, and seek action funding for high priority initiatives.							
Identify statewide, regional, and local environmental public health community partners and their capacities.	1.8%	0.0%	0.9%	26.4%	68.2%	2.7%	97.3%
Develop and implement an environmental public health plan to prevent and reduce exposures to health hazards in the environment.	11.6%	12.5%	8.9%	25.0%	41.1%	0.9%	67.0%
Advocate and seek funding for environmental public health policies and initiatives.	17.6%	13.0%	8.3%	30.6%	29.6%	0.9%	61.1%
Support community-based environmental public health.	9.1%	1.8%	4.5%	24.5%	55.5%	4.5%	84.5%

Environmental Public Health	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Conduct mandated environmental public health laboratory testing, inspections, and oversight to protect food, recreation sites, and drinking water; manage liquid and solid waste streams safely; and identify other public health hazards related to environmental factors in accordance with federal, state, and local laws and regulations.							
Conduct mandated environmental public health laboratory testing to protect food, drinking water, recreational water use, and liquid and solid waste streams in accordance with federal, state, and local laws and regulations.	22.0%	1.8%	5.5%	18.3%	47.7%	4.6%	70.6%
Conduct mandated environmental public health inspections (including within school, childcare, and correctional facilities) to protect food, drinking water, recreational water use, and liquid and solid waste streams in accordance with federal, state, and local laws and regulations.	6.3%	1.8%	3.6%	16.1%	62.5%	9.8%	88.4%
Protect workers and the public from chemical and radiation hazards in accordance with federal, state, and local laws and regulations.							
Protect the population from hazardous chemical exposure in accordance with federal, state, and local laws and regulations.	25.5%	5.5%	10.0%	22.7%	36.4%	0.0%	59.1%
Protect the population from unnecessary radiation exposure in accordance with federal, state, and local laws and regulations.	43.1%	6.4%	9.2%	18.3%	22.0%	0.9%	41.2%

Environmental Public Health	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Participate in broad land use planning and sustainable development to encourage decisions that promote positive public health outcomes (e.g., housing and urban development, recreational facilities, and transportation systems) and resilient communities.							
Participate in broad land use planning and sustainable development (e.g., consideration of housing, urban development, recreational facilities, and transportation).	44.00%	16.50%	13.80%	13.80%	11.90%	0.00%	25.7%
Coordinate and integrate categorically-funded environmental public health programs and services.							
Coordinate and integrate other categorically funded communicable disease control programs and services. (None listed)	18.10%	7.60%	3.80%	26.70%	43.80%	0.00%	70.5%

Table 41

What are your highest priority needs for training?

	N	% of LPHAs
Environmental health disease investigations	61	73.50%
Retail food	49	59.00%
Emergency response (truck wrecks, natural disasters)	44	53.00%
Environmental childcare sanitation	41	49.40%
Lodging	36	43.40%
Indoor air quality/mold	35	42.20%
Onsite wastewater treatment-construction permits	29	34.90%
Private drinking water - bacteria	27	32.50%
Private drinking water - chemicals	25	30.10%

Maternal Child Family Health (MCH) Area

Healthy People 2020 states improving the well-being of mothers, infants, and children is an important public health goal. Their well-being determines the health of the next generation and can help predict future public health challenges for families, communities, and the health care system. The Maternal Child Family Health (MCH) Area reflects the ability to address conditions that affect health behaviors and improving wellness indicators for women, children, and families. None of the regions reported average provision above 4.0, although average provision is consistently at 3.8 or 3.9, except in the center of the state.

MCH may be one of the easiest areas in which to find additional funding (*advocate and seek funding for maternal, child, and family health initiatives*; 63.3%) if the LPHA has a clear objective and program outline ready for grant applications that arise. In workgroup discussions, some LPHA leaders have noted the complexity of administering the state MCH contract. Perhaps a simplification of the state MCH contract would free up staff time and resources. LPHAs must fit all programming within the program options that are stipulated in the contract. If an LPHA develops programming responsive to a unique local need but that program will not fit within designated categories, the programming may not be funded, regardless of its demonstrated success.

Provide information on ongoing maternal, child, and family health trends (91%) may be improved with better communication strategies around MCH issues. *Develop a maternal, child, and family health plan* (69.3%) can be improved with education and training. *Assure mandated newborn screenings* (43.1%) is often met by depending on health care providers.

Training and education could focus on whether formal partnerships are required to meet this expectation. *Provide information on the consequences of adverse childhood experiences* (53.6%) is relatively new to the public health radar. The premier LPHA for this work is in Kansas City. An area for improvement may be partnership with the brand new DESE division of child health that the Governor created in February 2021.

Figure 15

Map of Maternal Child Family Health Area Capacity

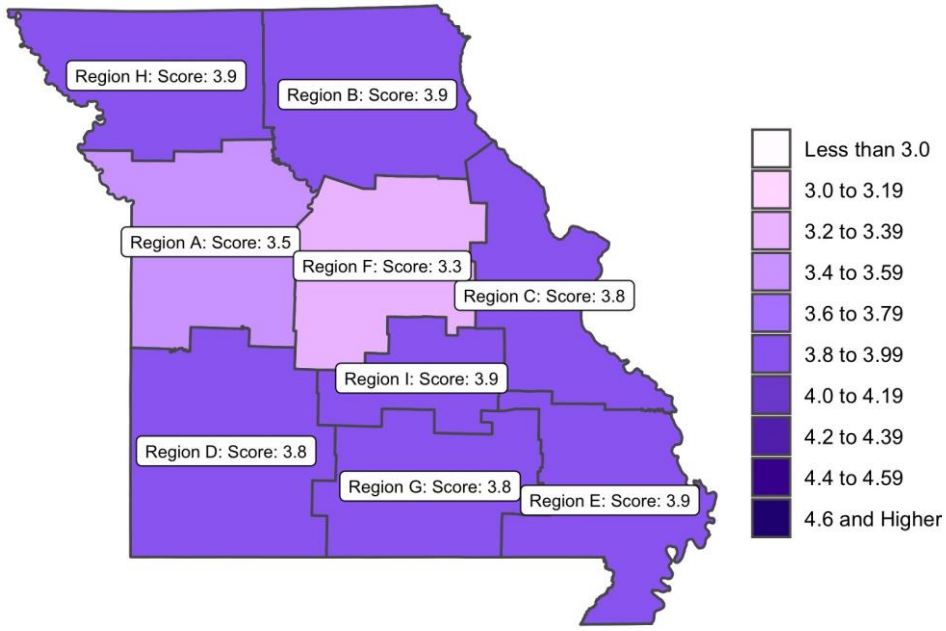


Table 42

Capacity Responses for Maternal Child Family Health & What would you need to do Maternal Child Family Health effectively?

Provide Information on Maternal, Child, and Family Health	
Provide information on ongoing maternal, child, and family health trends	91.0%
Provide information on the consequences of adverse childhood experiences	53.6%
Advocate for Maternal, Child, and Family Health Initiatives	
Identify maternal, child, and family health community partners and their capacities	88.7%
Develop a maternal, child, and family health plan	69.3%
Advocate and seek funding for maternal, child, and family health initiatives	63.3%
Support community-based maternal, child, and family health initiatives	87.0%
Optimizing Development	
Provide information to optimize positive social-emotional development and lifelong health	71.3%
Provide information to reduce infant mortality and pre-term birth outcomes	71.7%
Mandated Newborn Screening	
Assure mandated newborn screenings	43.1%
Coordinate Other Maternal, Child, and Family Health Programs or Services	
Assure access to maternal and infant services	96.3%
Assure adequate pre-natal care	61.8%
Assure family planning services	56.0%

MCH	Yes Cluster	No Cluster	Total
Hiring	19.3%	36.4%	55.7%
Training	15.1%	8.0%	23.0%
Technology			-
Partner	1.1%	1.1%	2.3%
Support	7.7%	7.4%	15.1%
Resistance	0.9%	0.3%	1.1%
Not necessary	1.7%	1.1%	2.8%
% of Total	45.70%	54.30%	352

Table 43
Detailed Capacity Responses for Maternal Child Family Health

Maternal Child Family Health	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Provide timely, statewide- and locally-relevant, and accurate information to the health care system and community on emerging and on-going maternal child health trends.							
Provide timely, accurate, and locally relevant information on emerging and ongoing maternal, child, and family health trends.	5.4%	1.8%	1.8%	37.8%	51.4%	1.8%	91.0%
Provide timely, accurate, and locally relevant information on the consequences of Adverse Childhood Experiences (ACEs).	13.6%	15.5%	17.3%	32.7%	20.0%	0.9%	53.6%
Identify local maternal and child health community partners and their capacities; using life course expertise and an understanding of health disparities, develop a prioritized prevention plan; and seek funding for high priority initiatives.							
Identify statewide, regional, and local maternal, child, and family health partners and their capacities.	5.6%	1.9%	3.7%	36.4%	49.5%	2.8%	88.7%
Develop and implement a prioritized maternal, child, and family health prevention plan, using life course expertise and an understanding of health disparities.	10.8%	9.9%	9.9%	31.5%	36.9%	0.9%	69.3%
Advocate and seek funding for maternal, child, and family health policies and initiatives.	16.5%	11.0%	9.2%	33.0%	29.4%	0.9%	63.3%

Maternal Child Family Health	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Support community-based maternal, child, and family health initiatives.	5.6%	3.7%	3.7%	31.8%	53.3%	1.9%	87.0%
Identify, disseminate, and promote emerging and evidence-based information about early interventions in the prenatal and early childhood period that promote lifelong health and positive social-emotional development.							
Identify, disseminate, and promote emerging and evidence-based information about early interventions in the prenatal and early childhood period that optimize positive social-emotional development and lifelong health.	14.8%	6.5%	7.4%	36.1%	35.2%	0.0%	71.3%
Identify, disseminate, and promote emerging and evidence-based information about early interventions in the prenatal period to reduce infant mortality and pre-term birth outcomes.	18.9%	3.8%	5.7%	32.1%	39.6%	0.0%	71.7%
Assure newborn screening as mandated by a state or local governing body including wraparound services, reporting back, following up, and service engagement activities.							
Assure mandated newborn screenings are performed in order to detect and prevent the developmental impairments and life-threatening illnesses associated with congenital disorders specified for Missouri.	32.1%	15.6%	9.2%	20.2%	22.9%	0.0%	43.1%

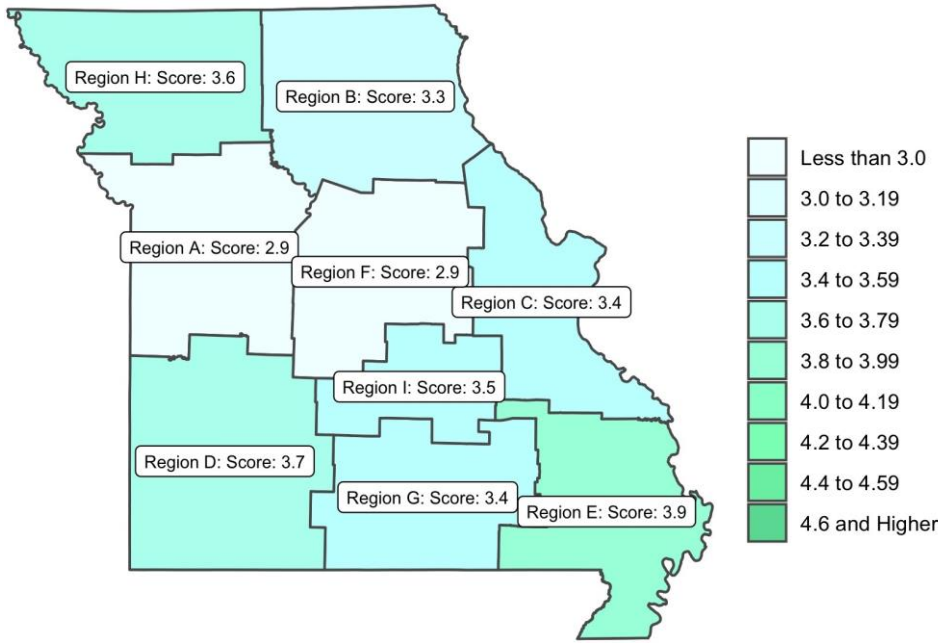
Maternal Child Family Health	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Coordinate/Integrate Other Programs or Services: Coordinate and integrate categorically funded maternal, child, and family health programs and services.							
Assure access to maternal and infant services (e.g., maternity support, WIC).	1.8%	1.8%	0.0%	17.4%	67.9%	11.0%	96.3%
Assure adequate pre-natal care.	21.8%	9.1%	7.3%	29.1%	30.9%	1.8%	61.8%
Assure family planning services.	28.4%	4.6%	11.0%	20.2%	32.1%	3.7%	56.0%

Chronic Disease Prevention (CDP) Area

Chronic diseases are conditions that last for a long time and generally cannot be prevented by vaccines or cured by medicine. Chronic diseases (c.f., diabetes, arthritis, cancer, heart and lung disease, asthma, and obesity) usually require ongoing medical attention and may limit daily activities. Almost 9 in 10 American over age 65 have at least one chronic health condition. The Chronic Disease Prevention (CDP) Area reflects the ability to work with partners to share information, develop policies, and create environments that support activities to prevent chronic disease – activities like smoking cessation, healthy eating, and exercising.

Figure 16

Map of Chronic Disease Prevention Area Capacity



Regions Legend

Table 44

Capacity Responses for Chronic Disease Prevention & What would you need to do Chronic Disease Prevention effectively?

Provide Information on Chronic Disease Prevention	
Provide information on chronic disease	65.7%
Advocate for Chronic Disease Prevention Initiatives	
Identify chronic disease prevention community partners and their capacities	74.7%
Develop a chronic disease prevention plan	39.4%
Advocate and seek funding for chronic disease prevention initiatives	45.1%
Support community-based chronic disease prevention initiatives	68.6%
Reduce Tobacco Use	
Lead community efforts to reduce tobacco use	65.5%
Healthy Eating and Active Living	
Lead community efforts to healthy eating and active living	74.7%
Coordinate Other Chronic Disease Prevention Programs or Services	
Coordinate other cd prevention programs	66.1%

CDP	Yes Cluster	No Cluster	Total
Hiring	30.0%	36.0%	66.0%
Training	10.2%	8.9%	19.1%
Technology	0.7%	1.3%	2.0%
Partner	2.0%	2.0%	4.0%
Support	4.0%	4.3%	8.3%
Resistance	0.3%	0.3%	0.7%
Not necessary			-
% of Total	47.20%	52.80%	303

Table 45

Detailed Capacity Responses for Chronic Disease Prevention

Chronic Disease Prevention	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Provide timely, statewide- and locally-relevant, and accurate information to the health care system and community on chronic disease prevention and control.							
Provide timely, accurate, and locally relevant education on chronic disease, including mental illness, and chemical dependency.	16.2%	13.5%	4.5%	41.4%	22.5%	1.8%	65.7%
Identify statewide and local chronic disease and injury prevention community partners and their capacities, develop and implement a prioritized prevention plan, and seek funding for high priority initiatives.							
Identify statewide, regional, and local chronic disease prevention and management community partners and their capacities.	9.7%	9.7%	5.8%	38.8%	34.0%	1.9%	74.7%
Develop and implement a prioritized chronic disease prevention plan.	25.7%	17.4%	17.4%	22.9%	14.7%	1.8%	39.4%
Advocate and seek funding for chronic disease prevention and management policies and initiatives.	28.8%	15.4%	10.6%	26.9%	16.3%	1.9%	45.1%
Support community-based prevention and management of chronic disease.	19.4%	6.5%	5.6%	38.0%	28.7%	1.9%	68.6%

Chronic Disease Prevention	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Reduce statewide and community rates of tobacco use through a program that conforms to standards set by state or local laws and CDC's Office on Smoking and Health, including activities to reduce youth initiation, increase cessation, and reduce secondhand smoke exposure, as well as exposure to harmful substances.							
Lead community efforts to reduce rates of tobacco use, reduce youth initiation, increase cessation, and reduce exposure to second-hand smoke.	15.9%	9.3%	9.3%	42.1%	18.7%	4.7%	65.5%
Work actively with statewide and community partners to increase statewide and community rates of healthy eating and active living through a prioritized approach focusing on best and emerging practices aligned with national, state, and local guidelines for healthy eating and active living.							
Lead community efforts to increase rates of healthy eating and active living that utilize best practices that are aligned with national and state guidelines.	9.9%	9.0%	6.3%	49.5%	20.7%	4.5%	74.7%
Coordinate and integrate categorically-funded chronic disease programs and services.							
Coordinate and integrate other categorically funded communicable disease control programs and services. (None listed)	23.9%	5.5%	4.6%	41.3%	21.1%	3.7%	66.1%

Chronic Disease Prevention Collaboration. As part of their initiatives to prevent chronic disease, LPHAs were asked about their level of collaboration in four areas: reducing obesity, promoting physical activity, supporting healthy nutrition, and addressing tobacco control. The responses about level of collaboration in these four initiatives are contained in Tables 46, 47, 48,

and 49. This area, perhaps more than any other, truly requires community level involvement. The most successful programs may not be those pushed out by the health department, rather those dreamed up by the community and then supported by the health department. An upstream focus on creation of healthy environments – walkable sidewalks or trails, access to fresh fruits and vegetables, skills in nutritious cooking, achieving healthy lifestyles – will be necessary to move people to make changes that will address chronic disease issues.

In all four initiatives, LPHAs reported that they were more likely to collaborate with others than to directly provide the service themselves. LPHAs were more likely to collaborate to provide support for physical activity and least likely to address obesity. Nearly three-quarters of LPHAs were able to promote nutrition through nutrition assistance programs. To the extent that these programs are funded through national sources, this is an effective use of federal money to reach Missouri communities.

Table 46

In the past year, how has your LPHA provided interventions to address obesity?

Directly provided	19.2%	
Collaborated	23.4%	
Neither	57.4%	

	Directly provided		Collaborated	
Screening adults for obesity and referring patients with 30+ BMI	22	46.8%	19	35.8%
Worksite programs, policies or changes to support healthy food and physical activity.	28	59.6%	33	62.3%
Behavioral interventions to reduce screen time among children.	21	44.7%	28	52.8%
Multicomponent weight-loss interventions with coaching & technology	15	31.9%	25	47.2%

Table 47

In the past year, how has your LPHA provided interventions that support physical activity?

Directly provided	19.6%	
Collaborated	37.1%	
Neither	43.3%	

	Directly provided		Collaborated	
Set up social support for physical activity	43	89.6%	36	52.2%
Make streets safer for pedestrians and cyclists	10	20.8%	41	59.4%
Create or improve access to places for physical activity	18	37.5%	51	73.9%
Increase physical activity in schools	17	35.4%	38	55.1%

Table 48

In the past year, how has your LPHA provided interventions that support healthy nutrition?

Directly provided	24.3%
Collaborated	29.0%
Neither	46.7%

	Directly provided		Collaborated	
Improve access to healthy foods in worksites, schools, or other local facilities	18	21.4%	49	75.4%
Improve healthier food choices through nutrition assistance programs	80	95.2%	18	27.7%
Restrict access to unhealthy foods in school sales	1	1.2%	36	55.4%
School gardens that allow students to garden during school or non-school hours	10	11.9%	27	41.5%

Table 49

In the past year, how has your LPHA provided interventions to address tobacco control?

Directly provided	23.4%	
Collaborated	27.2%	
Neither	49.3%	

	Directly provided		Collaborated	
Reminders for healthcare providers to discuss tobacco cessation with clients	28	49.1%	23	40.4%
Mass health communication with cessation messages and quit line number.	36	63.2%	32	56.1%
Public education about clean indoor air policies or the expansion of these policies.	17	29.8%	33	57.9%
Public education on policies to limit promotion, placement, flavoring, or pricing of tobacco	24	42.1%	34	59.6%

Injury Prevention (INJ) Area

Most injuries are preventable. Public health agencies work with partners through four steps to identify the causes and prevent injuries. The Injury Prevention (INJ) Area reflects the ability to use data to identify injuries and study trends in how injuries are changing over time and the impact of injury prevention programs. This involves isolating causes and risk factors;

working with partners to develop and test prevention strategies, policies, and programs; and evaluating the effectiveness of interventions and apply lessons learned to preventing other types of injuries. Average scores were generally low in this Area with no region reporting over 4.0, and most scores averaging around 3.0. Only a handful of LPHAs reported robust capacity in this area. Education and training to buttress the area should focus on the assurance criteria rather than provision.

Figure 17

Map of Injury Prevention Area Capacity

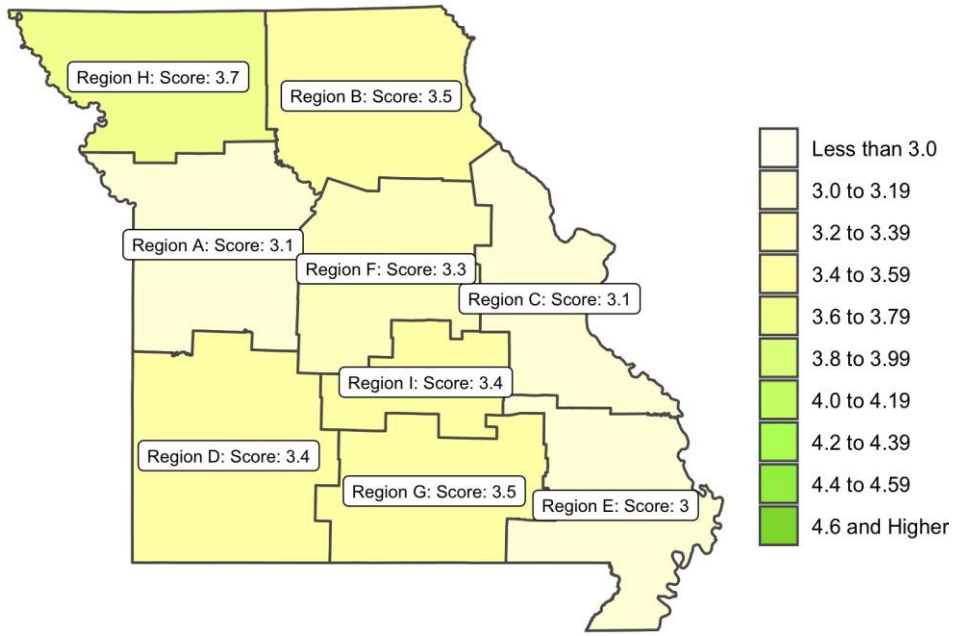


Table 50

Capacity Responses for Injury Prevention & What would you need to do Injury Prevention effectively?

Provide Information on Injury Prevention	
Provide information on injury prevention and control	67.0%
Advocate for Injury Prevention Initiatives	
Identify injury prevention community partners and their capacities	69.8%
Develop an injury prevention plan	44.4%
Advocate and seek funding for injury prevention initiatives	40.0%
Support community-based injury prevention initiatives	67.8%
Coordinate Other Injury Prevention Programs or Services	
Work with partners to mitigate suicide risk	45.8%

INJ	Yes Cluster	No Cluster	Total
Hiring	33.2%	31.0%	64.2%
Training	14.2%	6.7%	20.9%
Technology	0.0%	0.7%	0.7%
Partner	1.1%	1.1%	2.2%
Support	4.9%	3.0%	7.8%
Resistance	0.4%	0.0%	0.4%
Not necessary	3.7%	0.0%	3.7%
% of Total	57.50%	42.50%	268

Table 51

Detailed Capacity Responses for Injury Prevention

Injury Prevention	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Provide timely, statewide- and locally-relevant, and accurate information to the health care system and community on injury prevention and control.							
Provide timely, accurate, and locally relevant education on injury prevention and control.	16.1%	4.5%	12.5%	35.7%	29.5%	1.8%	67.0%

Injury Prevention	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Identify statewide and local chronic disease and injury prevention community partners and their capacities, develop and implement a prioritized prevention plan, and seek funding for high priority initiatives.							
Identify statewide, regional, and local injury prevention community partners and their capacities.	13.2%	5.7%	11.3%	34.9%	33.0%	1.9%	69.8%
Develop and implement a prioritized injury prevention plan.	21.7%	18.9%	15.1%	27.4%	15.1%	1.9%	44.4%
Advocate and seek funding for injury prevention policies and initiatives.	28.6%	9.5%	21.9%	25.7%	13.3%	1.0%	40.0%
Support community-based injury prevention initiatives.	14.7%	9.2%	8.3%	33.0%	33.0%	1.8%	67.8%
Coordinate and integrate categorically-funded chronic disease programs and services.							
Work with partners to implement evidence-based and population-based interventions that mitigate suicide risk.	28.0%	15.9%	10.3%	27.1%	17.8%	0.9%	45.8%

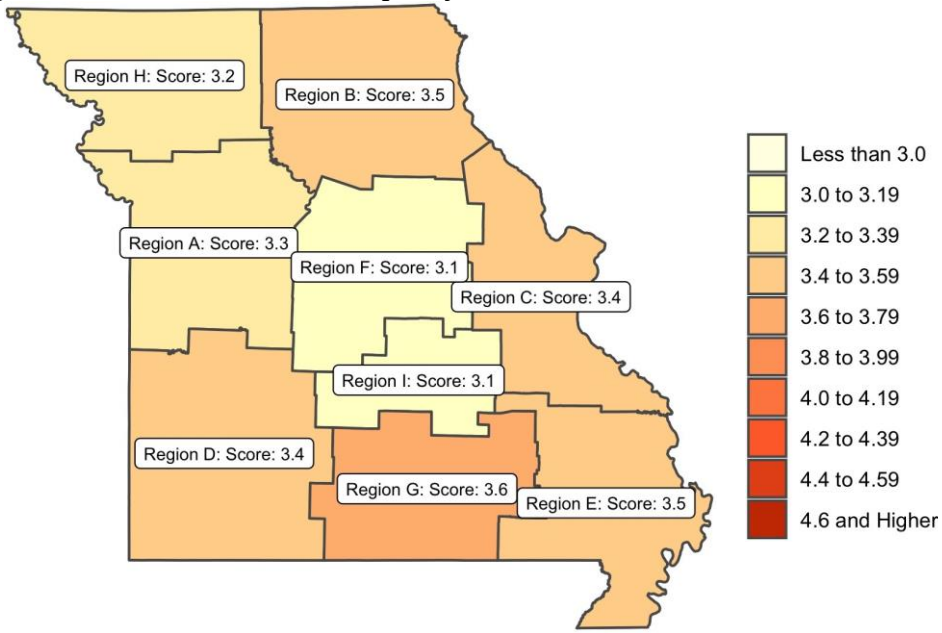
Access to and Linkage with Clinical Care (LNK) Area

Public health agencies provide linkages to care in order to improve community health. Linkages are more than just referrals. They are an opportunity for governmental, clinical, and community partners to work together to support patients and improve care. Together they create a strong network, maximizing community resources and building a strong foundation for community health. Linkages assure everyone has the fair opportunity to reach their full potential and live their healthiest life. The

Access to and Linkage with Clinical Care (LNK) Area reflects the ability to connect individuals with local, regional, and state resources for medical care and behavioral health care. This area was moderate in its provision with very few LPHAs excelling, but most LPHAs being able to provide at least a minimal level of service. *Licensing, monitoring, and discipline health care providers* (12%) has not historically been a public health role in Missouri, which likely accounts for the very low scores.

Figure 18

Map of Access to and Linkage with Clinical Care Area Capacity



Regions Legend

Table 52

Capacity Responses for Access to and Linkage with Clinical Care & What would you need to do LNK effectively?

Provide Information on Linkage to Medical, Behavioral, and Community Resources	
Provide information to the health care system	89.3%
Provide information on the behavioral health care system	53.8%
Provide information on available community resources	92.4%
Inspection and Licensing Health Care Facilities	
Conduct inspection and licensing of health care facilities	10.2%
Licensing, monitoring, and discipline health care providers	12.0%
Advocate for Linkage to Medical, Behavioral, and Community Resources Initiatives	
Identify linkage to medical, behavioral, and community resources community partners and their capacities	66.4%
Develop a linkage to medical, behavioral, and community resources plan	44.0%
Advocate and seek funding for linkage to medical, behavioral, and community resources initiatives	37.6%
Support community-based linkage to medical, behavioral, and community resources initiatives	70.5%

LNK	Yes Cluster	No Cluster	Total
Hiring	31.5%	31.1%	62.6%
Training	11.1%	4.6%	15.8%
Technology	0.3%	0.8%	1.1%
Partner	0.5%	0.3%	0.8%
Support	6.0%	5.6%	11.6%
Resistance	1.5%	0.2%	1.7%
Not necessary	4.2%	2.3%	6.5%
% of Total	55.20%	44.80%	647

Coordinate Other Linkage to Medical, Behavioral, and Community Resources Programs or Services	
Assure access to medical home care and quality care	37.4%
Facilitate clinical and community linkages	65.0%
Distribute therapeutic products to health care providers	18.5%
Assure access to STD and HIV treatment	83.7%
Provide birth and death certificates	99.1%

Table 53

Detailed Capacity Responses for Access to and Linkage with Clinical Care

Access to and Linkage with Clinical Care	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Provide timely, statewide- and locally-relevant, and accurate information to the health care system and community on access and linkage to clinical care (including behavioral health), healthcare system access, quality, and cost.							
Provide timely, accurate, and locally relevant education to the health care system in the LPHA jurisdiction.	4.5%	4.5%	1.8%	32.1%	54.5%	2.7%	89.3%
Provide timely, accurate, and locally relevant education to the community on the health care system.	5.6%	5.6%	3.7%	34.6%	47.7%	2.8%	85.1%
Provide timely, accurate, and locally relevant education to the community on the behavioral health care system.	21.3%	16.7%	8.3%	27.8%	24.1%	1.9%	53.8%

Access to and Linkage with Clinical Care	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Provide timely, accurate, and locally relevant education to the community, on community resources available in the LPHA region.	5.7%	1.0%	1.0%	35.2%	52.4%	4.8%	92.4%
Inspect and license healthcare facilities, and license, monitor, and discipline healthcare providers, where applicable.							
Conduct inspection and licensing of health care facilities to improve patient safety.	75.7%	9.3%	4.7%	0.0%	9.3%	0.9%	10.2%
Improve patient safety through licensing, monitoring, and discipline of health care providers.	77.0%	7.0%	4.0%	2.0%	8.0%	2.0%	12.0%
In concert with national and statewide groups and local providers of health care, identify healthcare partners and competencies, develop prioritized plans for increasing access to health homes and quality health care, and seek funding for high priority policy initiatives.							
Identify statewide, regional, and local medical and behavioral healthcare community partners and their capacities.	18.2%	11.8%	3.6%	26.4%	39.1%	0.9%	66.4%
Develop and implement a prioritized plan for increasing access to quality health care.	24.3%	23.4%	8.4%	24.3%	17.8%	1.9%	44.0%
Advocate and seek funding for policies and initiatives that increase access to quality medical and behavioral healthcare.	33.0%	21.1%	8.3%	25.7%	11.9%	0.0%	37.6%
Support community-based initiatives that increase access to quality medical and behavioral healthcare.	18.1%	8.6%	2.9%	33.3%	36.2%	1.0%	70.5%

Access to and Linkage with Clinical Care	No-Not able	No-Difficulty	No-Priority	Yes-Minimal	Yes-Adequate	Yes-Excellent	Met
Coordinate and integrate categorically-funded clinical health care linkages.							
Assure access to patient-centered medical home care and quality care.	37.4%	13.1%	12.1%	23.4%	14.0%	0.0%	37.4%
Utilize public health staff as facilitators of clinical and community linkages.	21.4%	10.7%	2.9%	23.3%	38.8%	2.9%	65.0%
Procure, maintain, manage, and distribute biological and therapeutic products to health care providers.	69.9%	4.9%	6.8%	10.7%	6.8%	1.0%	18.5%
Assure access to STD and HIV treatment.	12.5%	1.9%	1.9%	18.3%	58.7%	6.7%	83.7%
Provide certified birth and death certificates.	0.9%	0.0%	0.0%	2.7%	54.1%	42.3%	99.1%

Needs for Effective Response

If an LPHA reported not being able to provide a particular service in any of the capabilities or areas, they were asked what would be necessary for them to provide that service effectively. They could choose their top need from among seven options:

1. We would need to hire more people with this expertise (Hiring)
2. We would need specific training for our existing people (Training)
3. We would need specific technology to provide this (Technology)
4. We would need to partner share with another LPHA (Partner)

5. We would need to partner with another entity to assure it (Share)
6. We face resistance in providing this to our community (Resistance)
7. We do not think this is necessary to provide in our community (Not necessary)

Table 54 shows the seven categories and percentages of responses within each. Read vertically, this table shows the distribution of need within LPHAs. Read horizontally, this table allows the reader to compare between services. For example, Community Partnership Development receives the most resistance in the community (10.7%), Assessment and Surveillance would benefit the most from new technology (19.5%), Communications is most likely to be seen as not necessary but by a small margin (5.4%), and although hiring new staff leads in every category, the need for hiring is highest for chronic disease prevention. Table 55 ranks the number of below-3 responses showing the relative number of needs. Services at the top of the rankings indicate the greatest levels of need, the leader being Access to and Linkage with Clinical Care.

Table 54

FPHS needs for Effective Response by Category

	Capabilities							Areas					
Need	**CPD**	**EPR**	**PDS**	**APM**	**COM**	**AAS**	**OAC**	**CDC**	**INJ**	**CDP**	**MCH**	**EPH**	**LNK**
Hiring	50.4%	41.1%	50.2%	47.4%	49.6%	33.5%	46.3%	55.2%	64.2%	66.0%	55.7%	55.9%	62.6%
Training	33.6%	32.6%	42.9%	37.7%	30.4%	33.5%	27.6%	21.0%	20.9%	19.1%	23.0%	20.9%	15.8%
Technology	-	4.0%	1.5%	5.7%	6.9%	19.5%	12.6%	3.5%	0.7%	2.0%	-	2.5%	1.1%
Partner	-	2.3%	0.5%	0.4%	2.9%	1.3%	1.2%	4.2%	2.2%	4.0%	2.3%	2.2%	0.8%
Support	3.8%	13.1%	2.5%	1.8%	4.0%	8.9%	5.1%	11.9%	7.8%	8.3%	15.1%	14.0%	11.6%
Resistance	10.7%	6.9%	1.0%	-	0.7%	-	0.7%	2.8%	0.4%	0.7%	1.1%	1.4%	1.7%
Not necessary	1.5%	-	1.5%	7.0%	5.4%	3.3%	6.5%	1.4%	3.7%	-	2.8%	3.0%	6.5%
Total Needs	**131**	**175**	**203**	**228**	**276**	**394**	**428**	**143**	**268**	**303**	**352**	**363**	**647**

Table 55
FPHS needs for Effective Response by Magnitude of Need

FPHS	Section	Mean	SD	Needs
Linkage to Medical, Behavioral, and Community Resources	Area	3.34	0.90	**647**
Organizational Administrative Competencies	Capability	3.93	0.88	**428**
Assessment and Surveillance	Capability	3.60	1.10	**394**
Environmental Public Health	Area	3.70	0.92	**363**
Maternal, Child, and Family Health	Area	3.77	0.89	**352**
Chronic Disease Prevention	Area	3.38	1.12	**303**
Communications	Capability	4.17	0.99	**276**
Injury Prevention	Area	3.36	1.24	**268**
Accountability and Performance Management	Capability	3.38	1.20	**228**
Policy Development and Support	Capability	3.39	1.25	**203**
Emergency Preparedness and Response	Capability	4.42	0.63	**175**
Communicable Disease Control	Area	4.58	0.65	**143**
Community Partnership Development	Capability	4.27	1.04	**131**

Note. Means and standard deviations are statewide data.

Chapter 5: Discussion, Conclusions, and Recommendations

This report is being prepared just over 3 years from March 1, 2018 when #HealthierMO held its first statewide convening in Columbia, MO. At that gathering, public health professionals and stakeholders from across Missouri discussed the need for transformation within Missouri's public health system. With general agreement from the group, this began a process to establish a Foundational Public Health Services Model for Missouri and has culminated with the evaluation of the capacity of the Missouri's existing public health system to deliver the FPHS model.

The 7 Foundational Capabilities (cross-cutting skills and capacities needed to support basic public health other programs and activities) and the 6 Foundational Areas (basic public health programs aimed at improving the health of the community) that compose the model each have a list of activities that describe what it means to provide that portion of the model. Embracing the six Foundational Areas and underlying the seven Foundational Capabilities is the commitment to health equity and social determinants of health. Each one of Missouri's 114 local public health agencies have now had the opportunity to evaluate their capacity. (Note: after the capacity survey was completed, Independence, MO created a new LPHA, bringing the current total to 115). The results of the capacity evaluation are contained within this report.

Missouri's Approach Serves as a Model to Other States

Three characteristics of this research mark its contribution to the field: breadth, depth, and replication.

Breadth: By cooperating with the Missouri Department of Health and Senior Services, #HealthierMO has been able to collect data from 112 of 114 LPHAs. This 98% return rate allows

us to draw conclusions about the function of the entire system without needing to extrapolate to missing agencies.

Depth: Although other states have evaluated the Foundational Public Health Services Model established for their state, this report marks the first time that scores for each Area and Capability were used to delineate LPHA performance using a cluster analysis. By dividing LPHAs into two groups, roughly corresponding with average ability to provide a certain Area or Capability versus a lack of ability to provide, we were able to deeply evaluate the level of capacity within the system and clearly explain the outcomes to the reader.

Replication: #HealthierMO designed the Missouri FPHS model with guidance from other states who had gone before, and we built the evaluation with consideration of those who follow behind. While other states evaluated their FPHS model with the assistance of paid consultants using proprietary techniques, Missouri's approach to FPHS modeling was intentionally designed so that it can be replicated by other states who are doing their own FPHS surveys. The model design work, the FPHS survey itself, the code written to conduct the analysis, and the model of reporting the results are all freely available to other states to use in their own transformation projects.

Interpretation of the Findings

Capabilities are Foundational. Although it is common to think about public health in terms of the areas of service, such as communicable disease control or injury prevention, we found that LPHAs who are meeting minimums standards for FPHS Foundational Capabilities are 2.3 times more likely to provide the FPHS Areas. Abilities like organizational administrative

competencies, emergency preparedness, and communications are the foundation that supports the Areas of Expertise.

Funding Matters. It is easy to suggest that money is the solution for problems facing Missouri's public health system, but in this analysis, the data clearly bears this out. Per-capita funding alone (apart from all other financial, personnel, or population variables) distinguished the group of LPHAs who lacked capacity from those who possess capacity. The differences in funding are approximately $6.50 per capita for Capabilities and $10 per capita for Areas. Average taxation rate for LPHA service areas were practically identical (0.2 vs. 0.1), so efforts at increasing a mill tax should use the averages in this report to estimate what per capita increases in funding will close the gap in tat specific locale.

LPHA Directors Matter. The challenges of the COVID-19 response have contributed to unprecedented turnover within Missouri's public health system. We noted that LPHAs whose Director or Administrator had more than two year of experience were much more likely to meet FPHS Capability minimums. Director tenure was not associated with provision of FPHS Areas, perhaps because specific LPHA staff specialize in FPHS Areas and are likely to remain even through administrative turnover. Furthermore, we learned that when the LPHA Director is not required to fulfill multiple roles at the LPHA and can focus on the administrative role, that LPHA is more likely to be meeting capability minimums.

The importance of LPHA Directors to the capacity of an LPHA highlights the potential impact of Director turnover as a challenge to future system function. As this report was in its final draft, we learned about the retirement of another LPHA Administrator Director, bringing the total to 22 new Directors since COVID-19 started a year ago (19% turnover) and 27 new in

the past 18 months. Within the last 18 months, 1 in 4 Missouri LPHAs (25%) have experienced a change in their leadership. Because LPHAs led by Directors who have less than two years' experience are approximately 2.7 times more likely to lack FPHS Capability capacity, mitigating the effects of turnover represent a massive challenge to delivering the FPHS model in Missouri. New administrators may perhaps need training and mentoring, collaboration with more experienced-Directors or other professionals to gain vital information, navigate their new positions, and shorten the transition to full functionality.

Training Shapes the Future of Public Health. Going into the COVID-19 pandemic, 95% of Missouri LPHAs had 10 or fewer trained contact tracers on staff and 66% had 5 or fewer. In a state with a population of 6.1 million, only 408 local public health professionals are trained to administer immunizations, 90% of LPHAs have six or fewer trained immunizations staff; over half (58%) have four or less. LPHAs have now increased capacity by cross-training all their staff as contract tracers. It is only through this flexible team approach that LPHAs report success managing the pandemic so far. This suggests the potential value of a shift in the public health system away from job-specific siloes to a multi-disciplinary team approach to building healthier communities.

COVID-19 Response is Robust. We analyzed how LPHAs across Missouri were performing so that we could identify system changes that would most improve consistent assurance of the FPHS components. The highest skillset across the state was for Communicable Disease Control, which has proven vital in the public health response to the COVID-19 pandemic. Note that this data was collected in spring and summer of 2020, early in the COVID-

19 response, and thus Communicable Disease was top of mind for the LPHAs during data collection.

The Future of Transformation

Costing Analysis. Having established the capacity of Missouri LPHAs to deliver the FPHS model across the state, we plan to turn to costing assessment. This should allow us to know where funding gaps exist and assess what the costs would be to fill those gaps. We plan to develop the costing assessment in Phase III of the #HealthierMO initiative.

Articulating the Return on Public Health Investments. Identified as early as the original convening in 2018, an articulation of the return on investment will predicate the appeal for additional funding for public health in Missouri. This explanation must be clear and convincing to policymakers who have the power to appropriate state dollars, and to the general public who will support ballot initiatives or mill taxes. Understanding return on investment will require data collection from the costing assessment and use of techniques like a cost-benefit analysis, as well as support of data collection at the local level.

Effective Communication to Policymakers. The 2021 legislative session will bring unique challenges to Missouri's public health system. Multiple legislative attempts have already been introduced to reduce or strip local control from public health, often in the name of "religious freedom" or as a reaction to perceived excesses in restricting social gatherings during a pandemic. Even simple rules about mask-wearing and hand hygiene have been the foci of grievance against governmental efforts to protect Missourians' health and safety. This is the backdrop against which Missouri's public health system will be making requests for funding and seeking to untangle issues of local control. Effective communication based upon reliable data

collection will help establish why legislators should listen to public health science rather than pandemic propaganda.

Moving from No to Yes

In the analysis, a cluster analysis was used to divide LPHAs into groups that either possess (Yes) or lack (No) overall capacity for FPHS Areas and/or Capabilities. Funding is a prime predictor of group belonging but moving from the No group to the Yes group will certainly require additional support. #HealthierMO can play a role in explaining and supporting this transformation, helping LPHAs to strategically plan and align their priorities. The findings from the capacity survey can provide guidance and focus in moving LPHAs from the "No" to the "Yes" column.

A Template for Transformation. How might a template for transforming of Missouri's public health system take shape? Based on the findings in the FPHS capacity evaluation and our experience with transformation work in Missouri over the past three years, this report offers four data-based considerations for discussions on how to implement transformation of the public health system towards providing the foundational capacities and areas.

1. *Community Health Assessment.* Central to establishing FPHS activities, would be to educate LPHAs on the strategic need for conducting a community health assessment and support their efforts to do so at least once every three years. Strategic planning requires time, money, and effort. Due to limited resources and high demand for local public health services, many LPHAs face the challenge of being reactionary, rather than strategic, in their program and service delivery. This keeps them perpetually in a condition of reacting to immediate needs rather than planning for future needs or

addressing root causes. The community health assessment, while certainly not the only tool available, is a sufficient starting place for discussing future training needs.

2. *Strategic Community Partnerships*. Many LPHAs identified a need to partner with either another LPHA or another entity to effectively assure the FPHS components. Public health agencies have an important role as leaders and conveners of local, regional, and state partners. They must also engage active participation from community members in order to achieve the level of buy-in required for sustainable change.
3. *Programs and Policies*. LPHAs can leverage their relationships with community health partners and fellow LPHAs to encourage public buy-in and support for policy change. Support can also be sought for those programs that would address their areas of lack, identified by the FPHS capacity survey and/or the community health assessment. Perhaps a strategic approach will help address historic low participation in public health programs and lack of change over time.
4. *Data Collection*. Much of what gets accomplished in any governmental system is driven by data. Decisions have to be based on data. Much of the data available to LPHAs is national data that has been extrapolated to states, or state data that can be 3 to 5 years old, neither of which is local, current, or relevant to a community. Knowing how to assess the accuracy of data, how to clean it, and how to analyze requires a level of expertise most local public health agencies in Missouri don't have access to. Universities may be able to contribute data collection and analysis expertise, but this generally requires funding.

5. *Mentorship*. Given the level of turnover among LPHA administrators, the gaps identified by the FPHS capacity assessment, and the need for partnering to address gaps, one way to promote success in transforming the public health system to deliver foundational capabilities and areas would involve a six-month to a year-long program in which a dedicated mentor or coach would walk with the health department to complete the strategy outlined above. This may be someone employed by another health department, but obviously, such a position would need to be monetized. The expert mentor and the receiving LPHA would require a stipend for training, if mentorship was not an established position.

What is the role of the state health department in making these changes?

One area in which the state health department could decrease the workload of LPHAs, freeing up FTE hours and resources would be streamlining contracts and documentation requirements. Many big contracts (c.f. Maternal, Child, and Family Health) require high levels of documentation that can consume many hours of staff time. The lengths of the contract differ, staggering reporting requirement deadlines. A simplified state template for all contracts, with identical reporting deadlines (specifying requirements unique to a given Federal contract), which could be accomplished for relatively low cost and effort, would free up workload and resources for local agencies.

A second area for consideration would be the inclusion of discretionary funding within the contracts. This change has been proposed may times over the last three years. The change would allow LPHAs to direct their service toward programs that are responsive to the needs within the local communities while still meeting the broad purpose for the funding.

Conclusion

There is reason for optimism about Missouri's public health system. The demands of COVID-19 have certainly stressed the system and contributed to turnover among LPHA administrators. Yet, despite the massive change in focus, relatively little has changed behind the chaos. The public health system is not off track; it has not been irreparably damaged. The federal response during the first year of the pandemic is slowly re-normalizing, restoring commitment to science, and addressing the complexities of delivering vaccines to the citizenry. At the local level, COVID-19 has been a profound challenge, but the public health fundamentals still remain.

COVID-19 is expected to dominate public health time deep into 2021. #HealthierMO continues to collect and analyze data in an effort to best support Missouri's public health agencies, facilitating organic changes that will help them assure the FPHS, shape the future of Missouri's public health system, and provide all of us with the fair opportunity to live healthier lives.

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Appendix A: Background of Missouri's FPHS Model

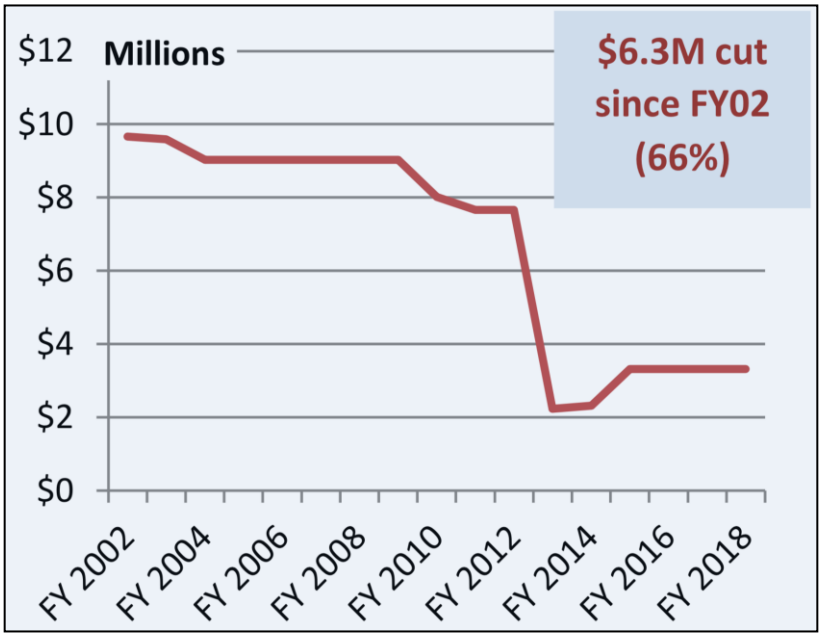
The following information about the development of the FPHS model is derived and excerpted from a report titled *Establishing a Foundational Public Health Service Model for Missouri*, by Todd Daniel, Ph.D., the lead evaluator for the #HealthierMO initiative, May 2019. Its repetition here can serve as a reminder for those who participated in the project from the beginning and an introduction for those who have joined Missouri's public health system workforce since the inception of the #healthierMO initiative.

Establishing a Foundational Public Health Service Model for Missouri

Public health stakeholders in Missouri have long recognized the need for transformative change within the state's public health system. Missouri's public health funding from General Revenue has seen precipitous drops (See Figure 1), resulting second-to-last-in-the-nation status for health funding ($5.88 per capita; Trust for America's Health, 2018) and commensurate drops in national health rankings (#24 in 1990 to #38 in 2018) driven by deterioration in public health indicators such as smoking, violent crime, cancer and cardiovascular death, and childhood immunization rates (United Health Foundation, 2017).

Figure 19

General revenue funding for core public health services in Missouri since 2002



Inadequate funding has exacerbated disparities in the availability of public health services as local public health agencies have compensated through a patchwork of unilateral funding efforts necessarily focused only on the unique needs of their own community. A 2014 survey of 360 public health stakeholders described the "fragmentation" within Missouri's public health system, and the great variability in how local public health agencies are governed, financed, and supported by their communities. Stakeholders also reported a lack of systematic, coordinated approaches to structuring, funding, and delivering public health services. Additionally, stakeholders were concerned that continued reductions in state funding threatened the quality and ability to deliver public health programs and services that directly affect the lives of Missouri citizens. Fundamentally, the survey concluded, the current public health system functions in

"silos", with public health departments across the state isolated from one another, invisible to the public, and underappreciated in public policy discourse.

The observations about the conditions of the public health system that were identified in that 2014 survey are not unique to Missouri. At least nine other states have recognized the need for transformative change in their own public health systems. Each of them undertook a systematic process to establish a package of services fundamental to the function of their public health system that would be responsive to the needs of their citizens. Now, public health stakeholders in Missouri have joined together at the initiative of a project called #HealthierMO to undertake a similar process of public health transformation.

The initial step taken by all states that have transformed their public health system has been to establish standards for the delivery of a core set of public health services. This document is designed for members of workgroups that have been tasked with developing such as set of standards for Missouri. This document will explain the origins of the transformation initiative, the process used by other states to establish their own set of foundational public health services, and present ideas that workgroups may use to formulate a set of foundational services for Missouri. No attempt has been made to predetermine which services are best for Missouri; rather, this document seeks to set forth as much information as possible to inform the decision-making of the Missouri workgroups.

What is an FPHS Model?

Foundational Public Health Services (FPHS) are a minimum package of services that are fundamental to providing adequate public health in a state public health system. They represent a core set of services, without which, it could not be reasonably claimed that a state has a

functional public health system. Establishing a package of fundamental services enables a common understanding about which services are truly essential to be provided by local public health agencies in all communities.

FPHS standards are designed to be minimum standards. As such, all existing FPHS packages fall short of aspirational models or accreditation standards. They may be regarded as a *foundational* set of services. Just as a house with only a foundation would be inadequate to the overall needs of the homeowners, individual local public health agencies (LPHAs) are expected to build upon foundational services, layering additional services to complete the structure of their service model. And just as houses are built to the specifications of their location, LPHAs in various locations will add specificity appropriate to their community, knowing that the structures in each community rest upon the same public health foundation. The Missouri FPHS workgroups may choose to stipulate for local public health associations what additions to the core FPHS model would be required to achieve accreditation standards such as those of the Missouri Institute for Community Health (MICH) or the Public Health Accreditation Board (PHAB).

FPHS standards are meant to be foundational and achievable across the state: neither minimalist, nor aspirational. FPHS standards are not a description of what the smallest health department can do right now; rather, the FPHS model describes the minimal set of services that a competent public health system should be able to supply for all people in the state. Understandably, some LPHAs may need additional help to deliver all of the foundational services. If a given health department cannot deliver the core FPHS services, the response will be to figure out what additional support or resources will be required so that they can. The goal of

the FPHS workgroup is not to fit a model to the existing public health system; rather, it is to bring the system into alignment with a collaboratively established set of foundational standards.

Within the heavily lined box are the five *Foundational Areas* and six *Foundational Capabilities* that collectively constitute the proper foundational public health services model. Above the box are the programs and activities specific to any particular community, about which has been noted: most of a public health department's work is "above the line." *Foundational Areas* are "substantive areas of expertise or program-specific activities" and *Foundational Capabilities* are "the cross-cutting skills and capacities needed to support the foundational areas", or to make the public health system function. "Thus, the model addresses both the infrastructure and programming needed to support a responsive and sustainable agency" (Fisher, 2017).

History of FPHS in the #HealthierMO Initiative

Transforming the Future of Public Health in Missouri (#HealthierMO) is a statewide, grassroots initiative to transform the Missouri public health system into a more robust and sustainable system that is responsive to public health needs across Missouri's culturally diverse communities, so that every Missouri resident has the opportunity for a healthier life. The initiative began in 2014.

After receiving funding through Missouri Foundation for Health and the Health Care Foundation of Greater Kansas City, #HealthierMO engaged public health stakeholders from across the state to identify which areas of the public health system are currently functioning well and prioritize where transformation is most needed. A convening session brought together stakeholders from across Missouri who helped form the *Advisory Council* from their ranks. The

Advisory Council has recommended strategies to transform Missouri's public health system with the input from its public health system stakeholder members, including representatives from rural and urban local public health agencies, state government, public and private universities, and professional organizations.

The second Advisory Council meeting in June 2018 sought to answer the question: "What do we want our public health system to look like, and how do we get there?" To provide advice on answering that guiding question, the Advisory Council and the assembled stakeholders from across the state were joined by Allene Mares, from the State of Washington, and by Michelle Ponce, from the State of Kansas. The presenters and their teams discussed the lessons learned from their state transformation initiatives, their successes, challenges, and their advice for Missouri.

The Advisory Council reflected upon the messages from each of the states and unanimously concluded that – following their lead – Missouri should adopt a set of Foundational Public Health Services (FPHS) that should be provided throughout the state to all citizens. The process of identifying the FPHS would answer the question "What do we want our public health system to look like" and the process of assessing the capacity for the current public health system to provide those FPHS would answer "how do we get there?" The FPHS capacity assessment would go on to form the core of the Phase II #HealthierMO initiative.

In service of Missouri public health stakeholders' mandate to establish a FPHS model for Missouri, the #HealthierMO initiative proposed to form FPHS workgroups. The newly established Executive Committee (formerly the Advisory Council) was presented with a list of proposed participants for the workgroups. The workgroups are to be tasked with understanding

the FPHS development process and then proposing and agreeing upon the components of the FPHS model that best fits the public health system in Missouri.

Development of an FPHS Model

Multiple states have developed a FPHS model for their state, typically at the directive of their state's legislature. Although developing a FPHS model will be time-consuming and complex, an examination of FPHS models from across the U.S. allows a state like Missouri to begin the process with the benefit of multiple models to compare and contrast. There is no universal timetable for the speed by which the process takes place, nor is there an external measure of any particular model's validity. The best model is the one that stakeholders from across the state agree best serves and represents them.

Foundational Public Health Services Capacity Assessment

The development of an FPHS model was followed by an assessment of the capacity for providing those services among all LPHAs across the state. An FPHS capacity assessment allows stakeholders to determine which services are currently available in every region of the state and then plan for mechanisms to "fill in the gaps": to organize, fund, and deliver those services comprehensively to all citizens. Implementation of a package of FPHS allows LPHAs to prioritize service provision and better estimate the costs of services.

The Foundational Public Health Services Capacity Assessment measured both the *capacity* (resources available to them) and *capability* (skills and infrastructure) of the Missouri public health system to deliver. The FPHS capacity assessment was used to establish a baseline for service delivery capacity and capability for as many of the LPHAs as possible (there are 115 in the state).

The second part of the capacity assessment analyzed the data collected from the LPHAs to understand the needs of the health departments based on their characteristics (i.e., how does rural compare to urban, or what services being delivered might be shared cross-jurisdictionally to increase the efficiency of the system?)