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Missouri's Public Health Response to COVID-19: Key Findings and Recommendations for State Action and Investment

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Missouri's Public Health Response
to COVID-19:

Key Findings and Recommendations for State Action and Investment

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Milken Institute School
of Public Health

THE GEORGE WASHINGTON UNIVERSITY



Missouri Foundation
for Health

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ABOUT THE GEORGE WASHINGTON UNIVERSITY MILKEN INSTITUTE SCHOOL OF PUBLIC HEALTH

The George Washington Milken Institute School of Public Health advances population health, wellbeing, and social justice locally, nationally, and globally by: Applying public health knowledge to enhance policy, practice, and management; Conducting rigorous, basic, applied, and translational research; and Educating the next generation of public health leaders, policy makers, practitioners, scientists, advocates, and managers.

ABOUT MISSOURI FOUNDATION FOR HEALTH

Missouri Foundation for Health is building a more equitable future through collaboration, convening, knowledge sharing, and strategic investment. Working in partnership with communities and nonprofits, MFH is transforming systems to eliminate inequities within all aspects of health and addressing the social and economic factors that shape health outcomes.

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Executive Summary

This report from the study, *Strengthening Missouri's Capacity to Respond to Public Health Crises*, summarizes key findings that are relevant to strengthening the state's and local public health agencies' (LPHAs) capacity to respond to future public health crises. With funding from Missouri Foundation for Health, a George Washington University study team conducted 138 stakeholder interviews within public health and other sectors involved in the COVID-19 response, revealing several key opportunities for the Missouri Department of Health and Senior Services (DHSS). Missouri, like many other states, faced great challenges in responding to the COVID-19 pandemic. Missouri now has a singular opportunity to build stronger public health agencies at state and local levels with unprecedented amounts of funding from the federal government. Among the key findings and recommendations are:

Ability to collect and analyze data associated with an infectious disease outbreak was severely lacking.

- The sufficiency and accuracy of state data was called into question on many occasions.
- LPHAs had limited capacity and resources to undertake and sustain surveillance activities and contact tracing.
- The rollout of testing was delayed and the state's testing protocols were confusing for LPHAs. Many LPHAs did not have the capacity or staffing to manage the level of testing needed.
- LPHAs were challenged with tracking vaccine distribution from the state and resorted to local and regional "bartering systems" for redistribution.

Past emergency response experience and planning were not fully leveraged during the pandemic.

- There is tremendous variation in training, skills, and capacity across LPHAs, with many lacking the fundamental infrastructure and expertise to mount an effective emergency response.

- Coordination between emergency response officials and public health officials was often lacking or disjointed. Informal channels of communication were often used to compensate.
- The state uses a Highway Patrol map to define the health regions of the state. This does not align with public health or health care infrastructure, nor does it reflect the population, and was therefore not useful for pandemic response and coordination.
- The health care sector (primarily hospitals and community health centers) took on significant public health functions, ranging from standing up testing programs and doing limited contact tracing to organizing vaccine clinics and redistribution.
- LPHAs reported difficulties surging their workforce to respond to the pandemic.

The state's commitment to financing public health is among the lowest in the country.

- Historically, Missouri has depended disproportionately on federal funds to support public health functions. Those funds are often categorical in nature, i.e., tied to specific programs or services, thus limiting the state's (and LPHAs') ability to establish a public health workforce that can adequately carry out core public health functions or be responsive to emergent needs.
- Federal pass-through dollars for pandemic response, such as CARES Act funding meant to support LPHAs, was sent to county officials, rather than directly to LPHAs. In a number of key instances, funds for pandemic response never reached LPHAs, which undermined their ability to respond.

Consistent guidance regarding public health mitigation measures against COVID-19 was lacking from the state, and complex local governance structures resulted in inconsistent guidance and policy at the local level.

- LPHAs were left without guidance on many issues, such as masking and school attendance, leading to different practices among neighboring municipalities and counties; LPHAs did not see the state as a resource for resolving these differences.
- The state did not consult with LPHAs on pandemic response decisions, thus missing an opportunity to get on-the-ground expertise and assess potential implementation challenges.
- The variable legal authority and governance structures of LPHAs further contributed to confusion around the pandemic response.

KEY RECOMMENDATIONS FOR STRENGTHENING PUBLIC HEALTH INFRASTRUCTURE IN MISSOURI

Recommendation:	The State of Missouri Should:
1 Provide financial support and technical assistance for public health accreditation.	Create a special fund to provide technical assistance for LPHAs to assess readiness for accreditation via the Public Health Accreditation Board, identify costs to close gaps, and cover fees associated with the accreditation application process.
2 Prioritize equity.	Expand funding, staff, and other supports to help LPHAs integrate equity principles into data collection and reporting and community engagement (i.e., trust building, links to social services). Increase workforce and funding for the Office of Minority Health.
3 Build a modernized surveillance system.	Build a modernized system and provide LPHAs or regional bodies with hardware and software to manage the system, consistent with federal standards.
4 Create regional coordinating bodies.	Incentivize and support greater formal sharing of staffing and services among smaller LPHAs, with a lead public health agency designated to convene and coordinate, designed to develop and strengthen all foundational public health capabilities.
5 Bolster the public health workforce.	Support workforce development through equitable recruiting, hiring, and promotion practices; new training programs; enhanced salaries for LPHA leaders with advanced training; and deploy skilled staff within regions.
6 Ensure equitable public health funding across the state.	Provide a minimum level of funding for LPHAs, linked to delivery of foundational public health services and an equity analysis incorporating social vulnerability, and ensure that public health money flows directly to LPHAs.
7 Clarify LPHA governance structure and authorities.	Commission legal analysis to create greater consistency in decision making and oversight across LPHA governance and financing.
8 Harmonize policy development.	Ensure consistent policies across jurisdictions for public health prevention and mitigation measures. DHSS should establish and adhere to protocols for consultation with LPHAs on new policies during emergencies.

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Introduction and Overview

As of July 2021, COVID-19 has tragically taken the lives of more than 10,000 Missourians and upended the social and economic fabric of all its residents. The pandemic severely challenged public health in the state, highlighting the importance of a strong public health system at all levels of government. Unlike any other public health challenge or disaster in recent history, every part of the state (and nation) was simultaneously engaged with pandemic response, and thus resources could not be diverted from other areas to help one region cope with the crisis. COVID-19 tested public health infrastructure and systems in profound ways and serves as a strong reminder of what pandemic preparedness—a focus for public health since the early 2000s—is all about.

In the summer of 2020, the George Washington (GW) University was contracted by Missouri Foundation for Health to assess Missouri’s public health preparedness and response capacities to the COVID-19 pandemic and future public health crises. We used a state- and local-level case study approach, examining the pandemic response statewide, and in three diverse geographic areas—the Northeast, Southwest, and St. Louis regions.¹ This interim report summarizes key findings from GW’s research, including 138 interviews with stakeholders in public health and many other fields that are relevant to strengthening the state’s capacity to respond to future public health threats, and by extension, the capacity of Local Public Health Agencies (LPHAs).² Subsequent

reports will provide more granular findings on region-specific responses to COVID-19 and opportunities for LPHAs and regional partners.

In April 2021, the National Academy of Medicine published the “Public Health COVID-19 Impact Assessment: Lessons Learned and Compelling Needs” report,³ that found common deficiencies across the country, many of which can be remedied by policy, structural, and budgetary changes at the state level. A more concerted effort at building community partnerships is also essential to regaining the trust of the public. A recent national survey showed reduced confidence in state and local health departments, often seen along partisan lines.⁴ Our research in Missouri does not contradict these national findings. Local leaders across the state—whether in public health or health care, or in any of the other sectors dependent on a strong public health voice and system—have expressed concern about this loss of trust, which is central to successfully responding to ongoing health problems and emergencies.

The state now has a singular opportunity to build stronger public health agencies at the state and local levels with unprecedented amounts of funding from the federal government.^{5,6} As of July 2021, Missouri had already received \$921 million in federal funding from the Centers for Disease Control and Prevention for COVID response. Some of that funding was used to surge critical resources

1 Methods and Data Sources can be found in Appendix A

2 For explanation of the role of the 115 local public health agencies in Missouri’s public health system, see <https://health.mo.gov/living/lpha/>.

3 DeSalvo, K., B. Hughes, M. Bassett, G. Benjamin, M. Fraser, S. Galea, N. Garcia, and J. Howard. (2021, Apr 7). Public Health COVID-19 Impact Assessment: Lessons Learned and Compelling Needs. NAM Perspectives. Discussion Paper, National Academy of Medicine, Washington, DC. <https://doi.org/10.31478/202104c>

4 The Public’s Perspective on the United States Public Health System. (2021, May 13). Robert Wood Johnson Foundation/Harvard School of Public Health. <https://www.rwjf.org/en/library/research/2021/05/the-publics-perspective-on-the-united-states-public-health-system.html>

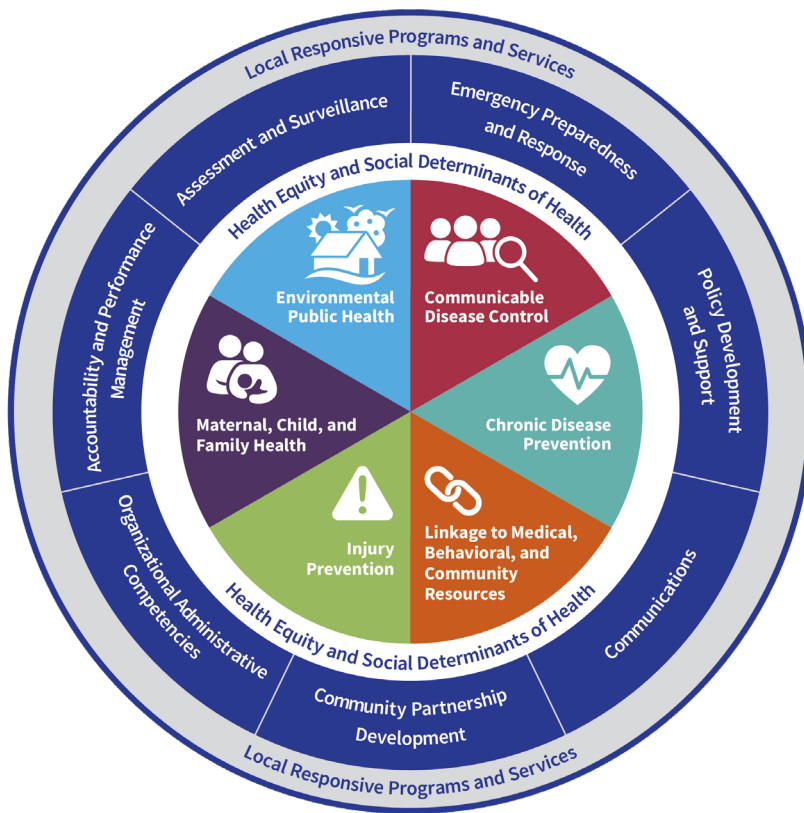
5 Centers for Disease Control and Prevention. CDC COVID-19 State, Tribal, Local, and Territorial Funding. (2021, July 9). <https://www.cdc.gov/budget/fact-sheets/covid-19/funding/index.html>

6 U.S. Department of the Treasury. Coronavirus State and Local Fiscal Funds. (2021, July 9). <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/state-and-local-fiscal-recovery-funds>

in response to the pandemic, but significant portions can also be leveraged for modernization activities. Additional federal fiscal relief funding from the U.S. Department of the Treasury can also be used for public health modernization. This report delineates opportunities for use of these funds, grounded in the evidence the GW team systematically collected and analyzed for the project.

Using the HealthierMO⁷ framework⁸ as a guide, this interim report is organized in three parts: (1) preliminary assessment of state and local foundational public health capabilities; (2) implications of the state’s governance and funding structure for public health; and (3) state recommendations for strengthening the public health infrastructure in Missouri.

MISSOURI’S FOUNDATIONAL PUBLIC HEALTH SERVICES MODEL, #HEALTHIERMO



The state now has a singular opportunity to build stronger public health agencies at the state and local levels with unprecedented amounts of funding from the federal government

- 7 HealthierMO is an initiative of the Missouri Public Health Association with support from Missouri Foundation for Health and other funders that convenes public health agencies and partners to build “a stronger, more resilient public health system.” For more information about HealthierMO, see <https://www.healthiermo.org/>
- 8 According to HealthierMO, Missouri’s Foundational Public Health Services Model “defines a minimum set of fundamental public health services and capabilities that must be available in every community in order to have a functional health system.” For an explanation of the model and the foundational capabilities it outlines, see https://82e4c309-d318-40ba-b895-4b0debd596f5.filesusr.com/ugd/9bd019_00975db1060b4cb9bceacc4062ee53c8.pdf

I. Preliminary Assessment of State and Local Foundational Public Health Capabilities

The National Academy of Medicine publication referenced above used the foundational capabilities⁹—the underpinnings of a modernized and effective public health department—as a lens through which to assess state and local responses to the pandemic. Many of these capabilities mirror the Foundational Public Health Services model that HealthierMO has adopted, and for that reason we are using the same framework, with one addition: a focus on equity. Given the disparate impact of the pandemic along racial, ethnic, and socioeconomic lines, public health’s capability to mount an equitable emergency response and build partnerships and programs to reduce underlying inequities in communities is increasingly seen as foundational in and of itself.¹⁰ This section reviews our preliminary findings within each category of the eight foundational capabilities.

Assessment and Surveillance

HealthierMO defines this capability as the “capacity to collect, analyze, and utilize data to identify and address health priorities.” This is one of the most fundamental functions of public health. During the pandemic, this capacity included conducting surveillance, outbreak investigations, and COVID testing and tracing.

FINDINGS

- **The ability to collect and analyze data associated with an infectious disease outbreak was severely lacking, and on many occasions the accuracy of state data was called into question.** The state initially did not use a unified data system. LPHAs relied upon various tracking and data systems, some quite outdated and most not interoperable across the health sector or with other LPHAs and the state. These weaknesses affected both case reporting and vaccination distribution systems.
- As a result, the state’s data was not timely and was often incomplete, with no formal mechanisms for correcting data in the state’s database. In addition, because new systems were created urgently and impromptu, staff were diverted from key work. The combined deficiency in state and LPHA capacity was reflected by the need for the state to use a contractor, Deloitte, for key surveillance functions that government staff normally handle, including ongoing assessment of the vaccine distribution effort. The state even relied upon Deloitte for COVID outbreak investigations.

9 PHNCI. Foundational Public Health Services Fact Sheet (November 2018). <https://phnci.org/uploads/resource-files/FPHS-Fact-sheet-November-2018.pdf>

10 Indeed, federal legislation to support foundational public health capabilities adds equity to the list of foundational capabilities. See <https://www.congress.gov/bill/117th-congress/senate-bill/674/text?q=%7B%22search%22%3A%5B%22Public+Health+Infrastructure+Fund+Saves+Lives+Act%22%5D%7D&r=4&s=1>

- As noted in the equity discussion below, the surveillance systems were not able to provide sufficiently granular data regarding populations most vulnerable during the pandemic.
- A broad group of stakeholders, including those in public health, health care, professional associations, community organizations, the business community, and educational institutions, reported that problems with data accuracy, availability, granularity, and timeliness hampered efforts to respond effectively to the pandemic.
- **LPHAs had limited capacity and resources to sustain surveillance activities and contact tracing.** Many LPHAs do not have trained epidemiologists who could provide localized analyses of the pandemic for local officials and the community (in the Northeast, in at least one instance, access to a regional epidemiologist was seen as an important resource). During the pandemic, the need for contact tracing outstripped the ability of LPHAs to conduct investigations in the traditional manner.
 - While many LPHAs were creative in bringing on volunteers or using internet-based approaches, this diminished the ability of LPHAs to fully understand and respond to a broad pandemic. These approaches also resulted in frustration by other community sectors that needed support for contact tracing, managing quarantine and isolation, and providing necessary social services.
- Although LPHAs used formal and informal channels to share experiences about their pandemic response, the state did not leverage this knowledge to provide guidance on contact tracing or identify best practices.
- **The rollout of testing in the state was delayed and confusing for LPHAs.** Many LPHAs did not have the capacity or staffing to manage the level of testing needed. Hospitals and health centers often stepped in, but their geographic and population reach was not always as extensive or inclusive as needed. This prevented early understanding of the scope of the pandemic and delayed contact tracing that could have reduced the spread of infection.
 - Early testing sites in the St. Louis region, which had the first COVID deaths in the state, were located in areas with limited testing access for residents at highest risk of poor COVID outcomes, leaving many minority residents distrustful of subsequent local or state public health efforts. Similar sentiments also were voiced in the Southwest region.
- **Tracking vaccine distribution was a challenge, especially in the early stages of the vaccine rollout.** LPHAs and the state were both blindsided at times, not knowing full details about the vaccine supply coming into the state directly to providers and how best to plan for vaccine distribution. The state did not receive information from the federal government about direct distribution channels to FQHCs and pharmacies, and LPHAs felt in the dark about how the state was allocating vaccines at the local level. In addition, tracking and communicating about vaccination deployment among LPHAs and third-party vaccination events (e.g., National Guard, FEMA, and hospitals and health centers) remains a challenge.
 - Despite an effort to control vaccine distribution by the state, many LPHAs engaged in barter systems with each other and the health care system to ensure they were able to meet demand at their local vaccination clinics.

The ability to collect and analyze data associated with an infectious disease outbreak was severely lacking, and on many occasions the accuracy of state data was called into question.

- Most LPHAs did not have vaccine appointment systems that could meet the demand and be interoperable with surveillance/reporting systems.
- LPHAs were forced to purchase appointment systems in the middle of an emergency, often learning to use them as they were trying to stand up mass vaccination efforts.
- **Many LPHAs lacked a full understanding of the underlying health and social service needs of their communities**, especially those most vulnerable in the pandemic, including racial and ethnic minorities, as well as immigrant populations. This hampered their ability to know in advance (or in real time) how to target outreach and services during an emergency.

Emergency Preparedness and Response

HealthierMO defines this capability as the “capacity 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.”

FINDINGS

- **Past emergency response experience, planning, and exercises were not fully leveraged during the pandemic.** We heard nearly universal agreement among the LPHAs that the state did not activate prior plans, in some cases hampering local response efforts. LPHAs felt that preparation for H1N1 and other disasters and outbreaks had been better coordinated. Some of this could be attributed to the loss of dedicated funding for staff preparedness and turnover of staff who had prior emergency experience, but that is only a partial explanation. It should be noted that some smaller LPHAs shared emergency planning staff, which they believe served them well in the pandemic. This could be a model for future preparedness capacity.

Past emergency response experience, planning, and exercises were not fully leveraged during the pandemic.

- **Coordination between emergency response officials (e.g., SEMA and their local equivalents) and public health was often lacking or disjointed.** Informal channels of communication were often used to compensate. From the LPHA perspective, coordination at the state level across the various emergency response structures (the Fusion Cell, SEMA, COADS, and VOADS) was lacking and LPHA perspectives were often missing from decision making.
- **The state uses a Highway Patrol map to define the health regions of the state,¹¹ which was not useful for the pandemic response and coordination** because it does not align with public health or health care infrastructure and does not reflect population density. These pre-existing regional divisions superimposed a structure that undermined working relationships already created by LPHAs.
- **Given the structural limitations of LPHA capacity, the health care sector (primarily hospitals and health centers) took on significant public health functions**, ranging from standing up testing programs and doing limited contact tracing to organizing vaccine clinics and redistribution. In some communities, health care leaders, not LPHAs, were looked to for public health guidance and were viewed as the lead communicators during the pandemic. While multiple funding streams and diverse approaches to responding to the pandemic can be beneficial, they require coordination and information-sharing so that LPHAs are able to fill

¹¹ Missouri Department of Health and Senior Services divides its health reporting regions according to the Missouri State Highway Patrol map. To view the regional map, see https://health.mo.gov/data/gis/pdf/map_ReportingRegions.pdf

gaps in service provision. LPHAs, unlike their health care system counterparts, are alone in having ultimate responsibility for ensuring all community members have equitable access to services such as testing and vaccinations.

- Hospitals and health centers have different abilities to reach diverse communities. They often coordinated their activities, but outside of the St. Louis City/County area, there was no preexisting structure for this kind of coordination. As a rule, LPHAs did not lead or coordinate these activities.
- Hospitals and health centers had independent access to federal funding for their COVID work. This was a benefit for communities, but there was not a mechanism to track resources coming into a community in order to better target LPHA efforts. In many cases, LPHAs were not provided with resources to shore up gaps in community access to services.
- **Few communities had formal or pre-existing mechanisms for coordinating and communicating across sectors** affected by the pandemic beyond public health and health care. Thus, informal or ad hoc mechanisms were used to engage the business community, the education sector, and social services providers—all of whom had important roles to play in pandemic response and were needed to support public health interventions.
- In St. Louis City and St. Louis County, new groups, such as the Rapid Response Team and PrepareSTL, were considered successful interventions for adding social services and community support to surveillance and emergency response strategies. Even with these new entities, substantial behind-the-scenes activity was needed to advance partnership across sectors.

Accountability and Performance Management

As cited by Healthier MO, LPHAs “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.”

FINDINGS

- **Accreditation¹² by the national Public Health Accreditation Board has been embraced by some (usually larger) LPHAs and resisted by others.** Accreditation provides an opportunity to assess the workforce and other capabilities of LPHAs. The cost of accreditation appears to pose a significant barrier, as does the concern that local services may not be comprehensive enough to meet accreditation standards. Some LPHAs viewed the self-assessment process toward accreditation as more valuable than the accreditation itself.

Policy Development and Support

HealthierMO defines this as the “capacity to serve as an expert for influencing and developing policies that support community health and are evidence-based, grounded in law, and legally defensible.”

FINDINGS

- **Confusion existed regarding who had legal authority to make certain decisions locally** and was a central issue in the pandemic. Because the state left many mitigation decisions for communities to decide, a patchwork of policies was developed, ranging from mask ordinances to school closures.
- **Policymaking authority varies greatly among the LPHAs, and most do not have dedicated staff for developing and analyzing policies.** LPHAs also

12 The two accrediting bodies that Missouri LPHAs can voluntarily pursue accreditation through are the national Public Health Accreditation Board (PHAB) and the Missouri Institute for Community Health (MICH). For more information on PHAB, see <https://phaboard.org/what-is-public-health-department-accreditation/>. For more information on MICH, see <https://michweb.org/>.

lacked authority to enforce certain policies, such as mask ordinances. Policies were, for the most part, developed in a reactive way as new challenges emerged. In some cases, separate boards of health could make decisions regarding public health interventions. In other cases, county boards made the decisions. Regardless, local health officers faced significant political pressure and were often undercut by elected officials. Several interviewees even voiced concern that the current LPHA policymaking authority, which does not always require public health expertise or background, appears to have incentivized some local residents to run for public office for the purposes of limiting the authority of LPHAs. Additionally, LPHAs often felt they lacked support from the state in educating their local leadership on the scientific basis of public health interventions.

- **Policymaking is decentralized, causing cross-jurisdictional confusion.** Within one region there could be conflicting policies, creating confusion for the many people who cross county or city borders in their daily lives. There is no mechanism for harmonizing these policies. Overlapping jurisdictional lines created multiple layers of decision making and multiple opportunities for contradictory policies and regulations. One city health department can overlap with several counties, creating added levels of bureaucracy and confusion for communication and LPHA authority. Likewise, some school districts bounded multiple counties, resulting in lack of clarity related to school policies.
- **LPHAs did not receive any specific guidance on many key policy issues,** such as mask policies and school attendance. When LPHAs made decisions at the local level, many felt undermined after the fact by the state's actions or communications and did not see the state as a viable resource for resolving differences between neighboring jurisdictions.
- School policies presented particular challenges, with LPHAs often blind-sided by school board decisions regarding policies for reopening, quarantining, contact tracing, and vaccination. School board autonomy often undercut confidence in LPHA leadership.

- **LPHAs felt they were not consulted before decisions were made by the state.** Decisions about key components of the pandemic response were made by the state and presented to the LPHAs, without prior consultation, as a fait accompli. This was particularly the case with vaccine distribution. Considerable confusion also occurred around the development of the Regional Implementation Teams (RITs), with constantly shifting expectations of the RITs that were not communicated clearly to the RIT leaders let alone the LPHAs dependent on the RITs. This lack of transparency about allocation of scarce resources led to regional resentments: rural communities felt the state built policies that worked for St. Louis and Kansas City but may not have adapted well to rural areas, while some of the larger cities thought the state was biased in providing pandemic resources to rural communities.

LPHAs did not receive any specific guidance on many key policy issues, such as mask policies and school attendance. When LPHAs made decisions at the local level, many felt undermined after the fact by the state's actions or communications and did not see the state as a viable resource for resolving differences between neighboring jurisdictions.

Communications

HealthierMO defines this capability as the “capacity to build trust and engage internal and external audiences with clear, transparent, and timely sharing, receiving and interpretation of information.” Communication was perhaps the biggest day-to-day challenge for all public health officials during the pandemic. Officials were operating in a highly politicized environment, which they had never experienced before, during a public health crisis.

FINDINGS

- **Many LPHAs did not see the state as a reliable source of information** at a time when there were often conflicting messages coming from federal officials. LPHAs looked to one another, to CDC, and to other non-state sources for guidance in developing their policies. When the state did communicate about COVID, the messaging was not always consistent and LPHAs were often not given advance notice of new guidance.
- **Conflicting guidance from neighboring LPHAs** reflects the lack of a formal mechanism for sharing messaging or communication strategies among the LPHAs. Though many LPHAs are members of state-based professional organizations where informal sharing took place, this did not result in unified messaging.
- **Many LPHAs do not have trained public information officers.** As a result, they did not have the ability to target messaging and outreach to specific communities. Facebook was often the prime means for communicating at the local level by smaller LPHAs. With more staff resources, a more sophisticated social media and communications strategy could be adopted.
- **Many LPHAs did not have resources to translate materials into other languages,** which limited their ability to engage immigrant and refugee

communities, including immigrants working in meatpacking plants—one of the key outbreak sites in the state.

- **Lack of trust was a big issue in COVID-related communications with the public.** Interviewees emphasized how critical the ability to mobilize trusted messengers was for them—and these messengers were often not government officials. It is not clear the degree to which LPHAs had developed the relationships with such external communicators. That said, in some areas local community leaders did step forward—including from the medical community and from other sectors, such as the business and faith communities.
- In the St. Louis region, the principal public-facing messenger, especially for information about hospital capacity and inpatient care, was the Metropolitan St. Louis Pandemic Task Force.

Organizational Administrative Competencies

HealthierMO states that delivering foundational public health programs and services requires competencies in “information technology, human resources services, legal services, contract and procurement services, [and] financial management,” as well as “using performance management systems, developing employees, adjusting to shifts in culture and environment, and managing change.”

FINDINGS

- **Missouri’s LPHA workforce demonstrates tremendous variation in training, skills, and capacity.** A number of interviewees admitted they were not trained and did not have the workforce capacity to deal with an emergency of this magnitude. In an attempt to address this deficiency, certain counties relied on a “shared services model,” which was already happening informally or formally in some

regions. Given the recent resignation of several public health administrators across the state¹³ and the difficulty that some LPHAs face in recruiting talent, particularly in rural areas of the state, workforce development will be critical to ensuring a strong public health system for the future.

- **LPHAs reported struggles in surging their workforce during COVID.** The contact tracing burden, as well as outreach work related to testing and vaccination, was a tremendous challenge for LPHAs. Many were quite creative—finding retirees and volunteers in the community, for example—but they were also forced to divert significant numbers of their already over-extended workforce from other public health services to the COVID response. Several interviewees underscored that these approaches are financially unsustainable when the emergency has an undetermined length and expressed grave concern at the severe reduction of routine services that could create new public health challenges, especially related to chronic health conditions, substance use, maternal and child

health, and violence and injury prevention. Interviewees also discussed legal liability concerns with using volunteers and non-government employees for certain functions, with no clear guidance provided by the state in this regard.

Community Partnership and Development

HealthierMO defines this capability as the “capacity to create, convene, and sustain strategic collaborative relationships with partners at the local, regional, and state level.”

FINDINGS

- **The importance of partnerships across sectors—**especially between public health and health care, but also with businesses, education, and social services—was emphasized by almost all interviewees. In some cases, these partnerships were formalized and led by public health. In other cases, public health participated in partnerships convened by others (most often the health sector). Informal relationships were critical to communication, coordination, and elevating key policy or practical issues. However, several interviewees noted that smaller LPHAs in particular did not always have the staff bandwidth to participate regularly in local coalitions or partnerships despite the perceived importance of having public health at the table.
- Two sectors of particular concern were education and social services. In a number of counties, school boards were making decisions about re-opening, quarantine, and other mitigation measures independent of or in direct contradiction of the LPHA. In contrast, social services organizations (housing and food

The importance of partnerships across sectors—especially between public health and health care, but also with businesses, education, and social services—was emphasized by almost all interviewees.

13 See: Munz, M. (2020, October 30). Health department directors across Missouri have left jobs, face threats and harassment. *St. Louis Post-Dispatch*. https://www.stltoday.com/lifestyles/health-med-fit/coronavirus/health-department-directors-across-missouri-have-left-jobs-face-threats-and-harassment/article_fa61a8fb-80dc-55f0-90fa-5a226c054667.html; Patrick, R. (2021, April 4). St. Charles County health director to leave in May. *St. Louis Post-Dispatch*. https://www.stltoday.com/lifestyles/health-med-fit/coronavirus/st-charles-county-health-director-to-leave-in-may/article_184688ef-1930-510d-ab9f-f859774bf64b.html; KMBC News Staff. (2021, May 4). Dr. Rex Archer, Kansas City's top health official, retiring on Aug. 1. *KMBC News*. <https://www.kmbc.com/article/dr-rex-archer-kansas-citys-missouri-top-health-official-retiring/36332371#>.

security programs, for example) had access to most-at-risk populations and yet did not always have desired support from the LPHA to do COVID-targeted work.

- **The capacity of community-based organizations** to participate in partnerships and/or contribute to the local COVID response was variable. Organizations with larger budgets had greater resources to leverage, but this could skew representation of certain interests or communities.
- **In all regions, the need for cross-county partnerships was understood to be important.** In some cases, there are already formal mechanisms for sharing services and coordinating decision making. In other cases, this is far more informal and not as well established.

Equity

HealthierMO includes health equity and social determinants of health “as a lens through which all public health programs and services should be provided.”

FINDINGS

- **Discussions related to equity were front and center in many of the interviews conducted in St. Louis City and County.** The dual pandemics of longstanding racism and COVID-19, in the context of sustained underinvestment in community health and infrastructure, raised concerns that state and local responses would shortchange communities of color who were at greatest risk for poor health and economic consequences.
- Despite affirmations from the state about prioritizing equitable policies and practices (and dedicated staff), disparities were apparent at all stages of the pandemic, including in early testing, data comprehensiveness and accuracy, vaccine availability and outreach, and communications. Further, response efforts that rely on technology to reach the community often exacerbate the preexisting digital divide.

Despite affirmations from the state about prioritizing equitable policies and practices (and dedicated staff), disparities were apparent at all stages of the pandemic, including in early testing, data comprehensiveness and accuracy, vaccine availability and outreach, and communications.

- Considerable expertise within St. Louis City and County across health care, education, social services, public health, and other sectors was not adequately leveraged and integrated at the state and local levels to create equitable action strategies.
- **Equity is not always a priority in other regions of the state.** Various explanations were offered, ranging from the difficulty of talking about equity because of local politics/sentiment to the belief that the issue was not important because some counties had very little diversity among their residents.
- **Equity was often defined by race and ethnicity,** but some interviewees also identified primary language (in areas with significant immigrant populations) and socioeconomic status as key factors. Similarly, the urban/rural differences discussed earlier were sometimes presented with an equity lens.

II. Implications of the State's Governance and Funding Structure for Public Health

Missouri's public health system is highly decentralized in statute and in practice. However, as highlighted by the COVID-19 pandemic, there remain core functions that only a state can effectively guide (and often implement). The state's governance and financing mechanisms contributed to difficulties and inconsistencies in the pandemic response across Missouri. Key findings from our interviews:

GOVERNANCE

The legal authority and the governance structures of LPHAs are variable¹⁴, creating opportunities for some jurisdictions while hamstringing local public health efforts in others. In addition, some LPHAs have overlapping jurisdictions within a county. This creates confusion and inconsistency across the state, especially in smaller jurisdictions.

FINANCING

Public health funds from the state or federal "pass-through" dollars are not viewed as being allocated in a predictable and consistent way. According to many interviewees, these funding challenges have been historically problematic. Yet during the pandemic, public health financing was considered even more deleterious; some LPHAs were bypassed, for example, in the allocation of CARES Act funding—remaining unfunded or tapping their own limited reserves because of jurisdictional or policy differences with their county authorities. The appropriate flow of public health funds was a substantial concern for all LPHAs, but especially those who were completely left out of CARES Act relief. Other challenges mentioned:

- **The state's level of public health funding has been among the lowest in the country for decades.**¹⁵ In 2020, Missouri had the lowest per

14 Local Public Health Agencies by Governance, Missouri Department of Health and Senior Services (2021, July 13). <https://health.mo.gov/living/lpha/pdf/ColorMapLPHA.pdf>.

15 Lang, A., Warren, M., & Kulman, L. (2018). (Issue brief). A Funding Crisis for Public Health and Safety State-by-State and Federal Public Health Funding Facts and Recommendations. Trust for America's Health. <https://www.tfah.org/report-details/a-funding-crisis-for-public-health-and-safety-state-by-state-and-federal-public-health-funding-facts-and-recommendations/>

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person state public health funding in the U.S.¹⁶ Missouri's public health system is decentralized with 115 LPHAs that operate independently from each other, and have varying governance structures and authority to generate revenue—for example through property tax.¹⁷ This variation in governance, financing mechanisms, and differences in relative wealth of communities creates an unevenness in local public health capacity across the state, which during a pandemic, can endanger Missouri as a whole. Some health departments worked well with their governing bodies and received needed financial or governmental support to respond more quickly and comprehensively. Other LPHAs were financially starved by their jurisdictions, with no adequate state response to funding. Given the magnitude of the problem and the nature of an airborne virus, the state's reliance on local financial support for public health was seen by many interviewees as misguided.

- **Historically, Missouri has depended disproportionately on federal funds to support public health functions.** Those funds are often categorical in nature, i.e., tied to specific programs or services, thus limiting the state's (and LPHAs') ability to establish a public health workforce that can adequately carry out core public health functions or be responsive to emergent needs.

16 SHADAC Analysis of Per Person State Public Health Funding, State Health Compare. (2021, July 9). SHADAC, University of Minnesota. <http://statehealthcompare.shadac.org/>.

17 Missouri Department of Health and Senior Services. Local Public Health Agencies (2021, July 9). <https://health.mo.gov/living/lpha/>.

III. Recommendations for Strengthening the Public Health Infrastructure in Missouri

Fundamental to a successful response to a public health emergency, such as a pandemic, is ensuring that every community is served by a strong state and local public health agency with certain foundational capabilities. In this section, we identify actions that can be taken on a statewide basis to improve state and local public health systems in Missouri, as well as cross-cutting changes that the state could support during the post-pandemic period.

PROVIDE FINANCIAL SUPPORT AND TECHNICAL ASSISTANCE FOR PUBLIC HEALTH ACCREDITATION

With some of the workforce funding that is forthcoming, the state could provide technical assistance to jurisdictions as they assess their readiness for accreditation and identify gaps that must be addressed. The Public Health Accreditation Board (PHAB) has a readiness assessment tool that could be used to determine workforce and other infrastructure investments needed by the various LPHAs. The state could create a special

fund that would help LPHAs close those gaps, either on their own, or through a system of regional sharing. There are models for assessing the cost of closing gaps in foundational capabilities that could be applied to the state and LPHAs.^{18,19} (It should be noted that PHAB is revising its accreditation standards to focus more on the foundational public health services; the assessment of needed investments could be framed around the draft standards set to be released this summer.) The state should also commit to paying the fees associated with applying for accreditation, a financial hurdle cited by many LPHAs.

PRIORITIZE EQUITY

The state should expand funding, staff, and other supports to assist LPHAs with targeted efforts to address equity concerns. Such efforts should include LPHA data collection and reporting for racial, ethnic, and other demographic populations; increased community engagement and partnership to build trusting relationships; and

18 See: Mamaril, C. B. C., Mays, G. P., Branham, D. K., Bekemeier, B., Marlowe, J., & Timsina, L. (2018). Estimating the Cost of Providing Foundational Public Health Services. *Health Services Research*, 53(4), 2803–2820. <https://doi.org/10.1111/1475-6773.12816>

19 See: Singh, S. R., Leider, J. P., & Orcena, J. E. (2020). The Cost of Providing the Foundational Public Health Services in Ohio. *Journal of Public Health Management and Practice*. <https://doi.org/10.1097/PHH.0000000000001233>

facilitation of linkages to both health and social services. Further, the state should increase the capacity of the state Office of Minority Health with dedicated staff and funding resources.

BUILD A MODERNIZED SURVEILLANCE SYSTEM

The state should expand its capacity at the state level by building a modernized surveillance system and providing LPHAs (or regional coordinating bodies, as described below) with the hardware, software, and workforce to manage such a system. With major federal funding available for modernizing surveillance and epidemiology functions, the state should work closely with the Centers for Disease Control and Prevention to ensure that the new system being built will be consistent with federal standards.

CREATION OF REGIONAL COORDINATING BODIES

The state should incentivize and support greater formal sharing of critical staffing and service functions among smaller LPHAs, particularly those that would otherwise be inefficient or too costly to be supported by individual LPHAs. Increased sharing could be achieved through the establishment of Regional Coordinating Bodies for all public health functions, including preparedness, that more accurately reflect how health (public health and health care) services are structured in a region.

A lead public health agency should be designated to convene each coordinating unit, which should be inclusive of all the diverse sectors needed for an effective public health response. This approach would address some of the coordination challenges seen during the pandemic response and would, more importantly, provide an opportunity for building competencies and stronger community partnerships within regions—partnerships that often cross county lines in the first place. Key elements of this proposal are outlined below by foundational public health capability:

- **Assessment and Surveillance:** While each LPHA needs a modernized data system, economies of scale suggest that regional epidemiologists might be the most effective way to ensure in-depth analysis of data at the LPHA and regional level. A joint reporting system between the regional LPHAs and the state can ensure greater coordination of data analysis and information among all levels of public health and its key partners. By linking this system to the regional coordinating body that includes representatives of the health care system (e.g., hospitals and health centers), the opportunity to harness all relevant health information in a region is enhanced.
- **Emergency Preparedness and Response:** Regional preparedness planning and coordination staff should be supported by the state, reviving a model developed during H1N1 that many interviewees cited as having been quite successful but was eliminated due to lack of funding.
- **Policy Development and Support:** The state should support an entity or consortium, led by a school of public health or a public health institute, to provide LPHAs with independent policy and legal analyses, including creating localized “off-the-shelf” policies that could be adapted during an emergency. This would promote harmonization of policies across LPHAs and within regions. Few LPHAs have the staff or resources to provide thorough analysis of policy or legal options; this action would provide a stronger foundation for decision making by LPHA staff and local elected leaders.
- **Communication:** The state should support regional public information officer positions. Public communication was a key challenge during the pandemic. As noted earlier, many LPHAs do not have dedicated public information officers. For efficiency and to ensure consistency in messaging, these officers can be hired by the regional coordinating bodies that are created. Even larger LPHAs can benefit from such a process since messaging needs to be coordinated regardless of size.

- **Community Partnership Development:** These coordinating bodies should work with LPHAs to create regional Community Health Improvement Plans and could work toward coordinated Community Health Needs Assessments among the non-profit hospitals in each region. This would encourage regional understanding of community needs and create opportunities for ongoing collaboration, not just during an emergency, which would build greater trust across sectors.

BOLSTER THE PUBLIC HEALTH WORKFORCE

The state should support workforce development through new training programs; enhanced salaries for LPHA leaders who have advanced training; and deployment of skilled staff to serve within regions (e.g., regional epidemiologists). Further, a centralized system for rapid hiring of temporary workers should be organized by the state, with mechanisms for ensuring appropriateness of personnel, compensation, and liability protections.

ENSURE EQUITABLE PUBLIC HEALTH FUNDING ACROSS THE STATE

Providing a minimum level of financing for LPHAs (through state or pass-through federal dollars) could begin to level the playing field. That minimum level could be determined based on the financial requirements for LPHAs and their regions to ensure delivery of all foundational public health services. An equity analysis, incorporating social vulnerability, is needed to determine if different approaches to financing could create a more

even distribution of resources to support LPHAs across counties and cities. Perhaps most critically, public health money should flow directly to the appropriate LPHAs rather than through the counties. This direct flow may require provision of technical assistance with financial management to LPHAs or the flexibility for LPHAs to use fiscal intermediaries, such as local community foundations or regional non-profits, which can manage funds for them. In addition, giving LPHAs more flexibility to braid categorical dollars (and/or provide state funds to support key workforce capacities) would be beneficial.

CLARIFY LPHA GOVERNANCE STRUCTURE AND AUTHORITIES

While attempting to modify the authority and governance of LPHAs is currently politically fraught, the state could commission a legal analysis, perhaps through the Network for Public Health Law, to find ways to create greater consistency in decision making and oversight across LPHAs. As part of the analysis of LPHA governance, a sub-analysis is needed regarding the different ways LPHAs finance their operations.

HARMONIZE POLICY DEVELOPMENT

Even in a decentralized system, especially during emergencies, the state should ensure that there are consistent policies across jurisdictions regarding public health control measures. DHSS should establish, and adhere to, specific protocols for consultation with, and advance notice of, new policies during emergencies.

Conclusion

The public health community in Missouri has had robust conversations about the need for modernization, focused on foundational capabilities and accreditation. This summary report presents key, high-level findings from interviews and observations that reflect statewide gaps or deficiencies. It also outlines key opportunities for policy and system changes needed at the state level to support a stronger public health system across the state and to incentivize modernization of LPHAs that are committed to enhancing their foundational capabilities.

With the influx of significant new federal funds, the state has an opportunity to *both* build state-level capacity in key areas *as well as* support and incentivize key improvements at the local or regional level—actions the state has not had the resources to undertake until now. Importantly, some of the federal dollars can be spent over a multi-year period, which allows for ramping up and sustaining public health capacity for a significant period of time. We believe the recommendations in this report provide helpful guidance and critical areas of focus for Missouri during the remainder of the COVID response, the recovery period, and beyond.

Appendix A: Methods and Data Sources

We used a mixed-methods, qualitative comparative case study approach to conduct an evaluation of the public health response to COVID-19 in Missouri. The findings in this report come principally from qualitative interviews with stakeholders, supplemented by media accounts and other publicly available data sources. A total of 138 one-hour interviews were conducted virtually from August 2020 to May 2021 with 129 stakeholders from state and local public health departments, elected and other government officials, health care organizations, educational institutions, the business community, faith-based organizations, membership associations, and a variety of social support services and other non-profits (Table 1). Because of the dynamic nature of the pandemic, nine stakeholders were interviewed twice over the study period.

We recruited a purposeful sample of stakeholders in three regions of the state to reflect variation in experiences with public health practice, local governmental processes and structures, and potential opportunities for strengthening public health statewide. The three areas were the Northeast, Southwest, and St. Louis regions (Table 2). We recruited additional stakeholders whose perspectives crossed regional boundaries. We began our recruitment strategy with video-calls with five stakeholders recommended by Missouri Foundation for Health (MFH). These calls provided valuable information about the overarching issues experienced by local public health agencies and hospitals. MFH also provided the GW team with a

starter list of potential interviewees. Additional contacts were recruited through snowball sampling, reviews of media reports, and general research techniques. All interviewees were promised confidentiality, and all but the initial five interviewees remain anonymous. Interview questions came from guides developed by GW for this study and customized to the sector represented by the interviewee. In the vast majority of cases, each interview consisted of one individual stakeholder and two GW study members.

Interviews were audio-recorded with permission and transcribed. Alternatively, careful note-taking was used when interviewees did not consent to audio-recording. All of the transcripts and notes were coded using the Dedoose qualitative software platform and following standard protocols for building a codebook and applying the codes to transcripts. Each interview transcript was coded by two or more GW study team members. Coded interview excerpts were reviewed for common themes, both within and across geographic regions. Themes were identified based on a variety of rationales, including the frequency with which they were mentioned in different transcripts and regions, the emphasis with which they were presented, and consensus amongst different GW study team members. This report presents cross-cutting themes, except in cases where we saw substantial regional variation in terms of findings. A subsequent project report will provide detailed case study findings by region.

TABLE 1: NUMBER OF INTERVIEWS BY SECTOR (AUGUST 2020 – MAY 2021)

Sector	Who is Included?	Number of Interviews
Business	Chambers of commerce, business councils, economic groups	9
Community Organizations	Non-profits, for-profits, health networks, community partnerships, social services	14
Education	K-12, higher education, education-focused entities	16
Faith-based	Churches, faith-based social service organizations, religious groups	4
Healthcare	Hospitals and health centers, health care associations, long-term care facilities, behavioral health	36
Policy	Government entities	9
Public Health	Emergency management, LPHAs, research, other public health-focused organizations	50
Total		138

TABLE 2: NUMBER OF INTERVIEWS BY REGION (AUGUST 2020 – MAY 2021)

Region	What Does This Include?	Number of Interviews
Northeast	A mix of counties in Highway Region B*	26
Southwest	A mix of counties in Highway Region D*	34
St. Louis	St. Louis City, St. Louis County, Jefferson County, and St. Charles County	45
Statewide	Statewide healthcare associations, statewide coalitions, Department of Health and Senior Services, state offices and divisions, state initiatives, non-governmental organizations	33
Total		138

*Missouri Department of Health and Senior Services divides its health reporting regions according to the Missouri State Highway Patrol map. To view the regional map, see https://health.mo.gov/data/gis/pdf/map_ReportingRegions.pdf

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