Maryland Commission on Public Health

Assessment Team Report

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Acknowledgements

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Introduction and Scope

In support of the Maryland Commission on Public Health, a team from the University of Maryland School of Public Health and Morgan State University School of Community Health and Policy gathered and synthesized information from a wide variety of sources to assess Maryland's foundational public health capabilities and its ability to respond to public health challenges. The assessment team worked collaboratively with Commission during all phases of the assessment to receive feedback on the sampling frame, the assessment data collection tools, and the interpretation of the findings. This report describes the methodology used to collect and analyze data, as well as details the findings from the different components of the assessment.

Methodology

Qualitative Interviews

Overview: To supplement the work of the five Commission workgroups (i.e., Governance and Organizational Capabilities, Funding, Workforce, Data and Information Technology, and Communications and Public Engagement), the assessment team at the University of Maryland was tasked with gathering confidential qualitative data through personal interviews from a variety of public health leaders in Maryland, all of whom were selected because of their critical role in the public health infrastructure.

Sampling Frame: A list of individuals for possible inclusion in the sample to be interviewed was initially developed using the entities specified in the legislation that gave rise to the Maryland Commission on Public Health and others of interest to Commission members. The list was then reviewed several times by Commission co-chairs, workgroup co-chairs, and workgroup members. The list grew in tandem with the need to understand specific components of the public health system as the Commission work was unfolding.

Final Sample: This report contains the findings from 76 interviews with 104 individuals. The final set of participants included leadership from all 24 local health departments (LHDs) as well as the Maryland Department of Health (MDH), who were asked questions about their capacity to fulfill the foundational public health capabilities, their successes and challenges, as well as their ideas for the future of the public health infrastructure in Maryland. Interviews were also conducted with elected state and county officials, as well as leaders of state-level agencies, commissions that address health-related issues, advocacy groups, and health-related associations to gain their perspectives.

Interview Questions: Because the intent of the interviews was to allow for candid conversations about participant perspectives and experiences, a set of question probes was developed that could lead to meaningful dialogue. These probes were developed in collaboration with Commission leaders and workgroup members and reviewed several times as feedback was obtained. Different types of individuals were asked questions related to their roles, responsibilities, and knowledge. Interviews, designed to last no longer than one hour, were conducted by either Zoom or telephone by one of two members of the assessment team, each of whom have doctoral degrees and longstanding experience in the public health field.

Additional details on the interview questions and participants can be found in Appendix 1.

Focus Groups

Purpose: Twelve virtual focus groups were conducted to collect more detailed information on key topic areas. The focus group topics were generated by the Commission co-chairs and developed with extensive input and review from the Commission co-chairs and the workgroup co-chairs. The final focus group topics were:

- Academic Partnerships
- Assessment and Surveillance
- Behavioral Health
- Chronic Disease
- Communicable Disease
- Communication and Public Engagement
- Environmental Health
- Human Resources
- Injury and Violence Prevention
- Maternal and Child Health
- Public Health Emergency Response and Preparedness
- Public Health Nursing

Information Collected: Similar to the interviews, the focus groups discussed successes and challenges, as well as the participants' ideas for the future. A Facilitator Guide was developed for each focus group in collaboration with Commission workgroup members and included discussion questions that tapped into the specific expertise of focus group participants. An overview of the focus group questions is provided in Appendix 2.

Methodology: The focus groups were scheduled for one hour and were conducted by Zoom.

Participants: The focus group participants were identified in two ways. First, for topics that had an established ad hoc group of LHD personnel through the Maryland Association of County Health Officers (MACHO), invitations to participate in the appropriate focus group were sent to the group members. Second, for topics where there was no established ad hoc group, a form was sent to the Health Officers to nominate staff members within their LHDs to participate. Invitations to register were then sent to the nominated LHD employees to participate in the scheduled focus group. For any group with more than 15 participants registered, a selection of participants was approved to participate in order to ensure geographical diversity.

Organizational Survey

Purpose: The purpose of the organizational survey was to collect information on the structural and operational aspects of MDH and the LHDs.

Information Collected: Survey questions were primarily derived from suggestions provided by the Commission workgroups. Additional questions were added by the assessment team to collect information that complemented the responses captured in other assessment activities. Efforts were made to not duplicate questions asked in the interviews and focus groups. The final survey was reviewed by the Commission and workgroup co-chairs. These questions collected primarily quantitative data, although open-ended questions were used where more detail was needed.

The LHD survey contained six sections: Organizational Structure, Workforce/Personnel, Funding, Procurement, Data and Information Technology (IT) Infrastructure, and Communication and Public Engagement. The MDH survey collected information on the same topics but was organized based on the office within MDH that was most appropriate to respond for each topic.

Methodology: LHD responses were collected using an online survey that was available from December 2024 to January 2025. Each LHD completed one survey. MDH responses were collected in early 2025.

Sample: All 24 LHDs completed the organizational survey. Responses were also received from five offices within MDH.

Secondary Analysis of NACCHO Survey Data

In Spring 2025, the National Association of County and City Health Officials (NACCHO) shared de-identified data for Maryland LHDs collected from two surveys with the Commission Assessment Team. The 2022 Profile Study collected information on the capacities, funding, governance, and activities of LHDs in the United States.[1] Profile Study data were available for twenty Maryland LHDs. NACCHO also provided Maryland data for the 2023 Forces of Change survey; however, data were only available for nine Maryland LHDs. Therefore, this report includes responses only from the Profile Study.

Public Comments

Sixty-seven individuals provided comments through the combined vehicles of listening sessions, online comment portal submission, and voice messaging. The Commission hosted six public listening sessions throughout the state organized to support geographic representation. Each listening session began with a presentation about the purpose of the Commission's work and the value of the listening sessions and commenced with the receipt of comments. The listening sessions were live streamed to support accessibility for those who could not attend in person. Individuals who attended in person were able to sign up to offer comment during the session. Those who joined virtually were given the opportunity to submit their comments using an online form on the Commissions website or to leave comments by voicemail on a designated phone number. The online portal to submit comments remained open from April 2024 until December 2024.

Thematic Analysis and Integrative Reporting of Findings

This report contains integrated findings from the assessment components described above. On a rolling basis, as the confidential interviews and focus groups were completed, detailed notes from the interviews and transcripts of the focus groups were read and reviewed by each member of the University of Maryland assessment team independently to derive key themes, with each of the five workgroup topic areas as a guiding framework. This process continued for six months, with the assessment team meeting regularly from October 2024 to March 2025 to discuss their findings from reviewing the material.

Findings from the other assessment activities were discussed as they became available and integrated into the final report in March 2025. Specific findings from the public comments were integrated into the report through discussions with Dr. Hawkins from Morgan State University and finalized with her input. Quantitative data from the organizational survey was analyzed descriptively, and qualitative data from the survey's open-ended responses was reviewed to identify key themes. These findings were then integrated into the qualitative findings from the interviews, focus groups, and public comments through discussions with the assessment team. The detailed timeline of data collection and analysis activities can be found in Appendix 3.

[1] For additional detail about the NACCHO Profile Study, please visit https://www.naccho.org/resources/lhd-research/national-profile-of-local-health-departments.

The narrative of this report is organized in the following way:

- The first section presents findings related to the Workgroup Topics, to specifically complement the activities and findings of the Commission Workgroups. Key Findings describe the collective voices of participants from the qualitative data gathered regarding their perspectives on the status of issues, followed by Participants' Ideas for the Future regarding possible improvements.
- The second section presents findings related to two areas denoted as Special Topic Areas: Partnerships and Emergency Preparedness. Although these were not Commission workgroup topics, these are critical dimensions of the public health infrastructure in Maryland.
- The third section presents findings related to Selected Health Issues that were specified in the legislation establishing the Commission on Public Health. Specifically, the legislation required that we assess the impact of the foundational public health capabilities on the state's ability to respond to COVID-19, overdoses, and maternal and child mortality.
- The fourth section describes five Crosscutting Findings that did not fit completely within a specific workgroup topic but rather were broad themes emerging from the assessment.
- Lastly, the section on Areas of Future Exploration summarizes the assessment team's thoughts about critical public health issues that could benefit from further discussion.

The report contains statements in dark blue italic font that are reflective of participant voices. Most statements are composites of multiple quotes captured during the interviews. Direct quotes were also included but confidentiality was preserved. No quotation marks are used.

Data emanating from the assessment activities provide a rich understanding of the status of Maryland's public health infrastructure. The findings, along with the work of the Commission Workgroups, can serve as the basis for recommendations for improvement of public health operations and activities in Maryland.

Abbreviations and Acronyms Used in This Report

BOH – Board of Health
CDC – Centers for Disease Control and Prevention
CRISP – Chesapeake Regional Information System for our Patients
DBM – Department of Budget and Management
EHR – Electronic Health Record
FTE – Full-Time Equivalent
HO – Health Officer
IT – Information Technology
LHD – Local Health Department
MACHO – Maryland Association of County Health Officers
MDH – Maryland Department of Health
NACCHO – National Association of County and City Health Officials
OCMP – MDH Office of Contract Management and Procurement
PHAB – Public Health Accreditation Board
PIO – Public Information Officer
STI – Sexually Transmitted Infection

Workgroup Topics

Governance and Organizational Capabilities

Framing Questions

- Are health departments organized and able to fulfill the foundational public health capabilities?
- How is the Maryland model of shared governance working?
- What key elements of the governance and organizational capabilities of MDH and LHDs can be enhanced or modified to improve and accelerate the delivery of foundational public health services, including behavioral health?

Key Findings

The core of public health activities in Maryland is centered in the governmental public health system, which is comprised of MDH and 24 LHDs.

Taken together, more than 7,000 individuals work in some capacity throughout the core fabric of Maryland's public health system, which consists of the MDH and 24 LHDs. MDH provides funding, oversight, and coordination of public health activities. Other entities in the state government work directly with the LHDs as well as through MDH on health-related issues. At the community level, LHDs aim to fulfill the foundational public health capabilities as described by the Public Health Accreditation Board (PHAB; see Figure 1). Table 1 also shows the breadth of public health services undertaken by the LHDs. Importantly, though it is not included in the figure below, behavioral health is considered an additional foundational area in Maryland. In addition to programmatic activities and services, public health operations include securing and managing grant-funded programs, monitoring health-related trends, communicating with the public, establishing partnerships, and collaborating with stakeholders.

Figure 1. Foundational Areas and Capabilities from the Public Health Accreditation Board

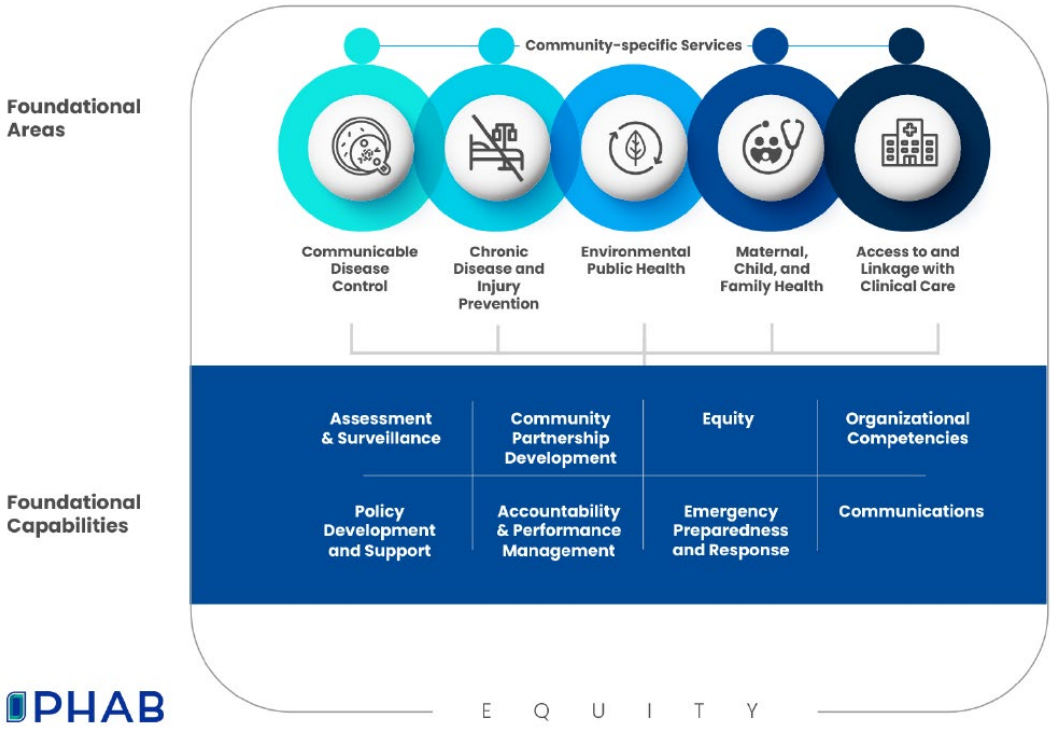


Table 1. Local-level Responsibility for Public Health Activities				
	Performed by LHD directly	Contracted out by LHD	Provided by others in community	Not available in community
Immunization				
Routine adult immunizations	89%	5%	95%	0%
Routine childhood immunizations	100%	5%	95%	0%
COVID-19 adult immunizations	100%	16%	79%	0%
COVID-19 child immunizations	100%	16%	79%	0%
Screening for Diseases/Conditions				
BMI	58%	11%	79%	5%
Cancer	58%	47%	89%	0%
Cardiovascular disease	37%	5%	100%	0%
Diabetes	47%	11%	100%	0%
High blood pressure	74%	11%	100%	0%
HIV/AIDS	100%	5%	84%	0%
Other STDs	89%	16%	89%	0%
Tuberculosis	95%	5%	74%	5%
Treatment for Communicable Diseases				
HIV/AIDS	58%	21%	89%	5%
Other STDs	84%	16%	84%	0%
Tuberculosis	95%	0%	68%	5%
Maternal and Child Health				
Early and periodic screening, diagnostic, and treatment	37%	5%	68%	0%
Prenatal care	5%	0%	100%	0%
Well-child clinic	26%	5%	89%	0%
WIC	79%	0%	26%	0%
Other Health Services				
Behavioral/mental health services	68%	32%	100%	0%
Comprehensive primary care	5%	0%	100%	0%
Home health care	5%	0%	100%	0%
Oral health	58%	5%	95%	0%
Substance abuse services	74%	37%	95%	0%
Epidemiology and Surveillance Activities				
Behavioral risk factors	89%	5%	68%	0%
Chronic disease	84%	5%	74%	0%
Communicable/infectious disease	100%	11%	63%	0%
Environmental health	100%	0%	42%	0%
Injury	68%	0%	53%	0%
Maternal and child health	89%	11%	58%	0%
Syndromic surveillance	79%	0%	53%	0%

Table 1, continued				
	Performed by LHD directly	**Contracted out by LHD**	**Provided by others in community**	**Not available in community**
Population-based Primary Prevention Activities				
Chronic disease programs	89%	26%	79%	0%
Injury	63%	11%	53%	0%
Mental illness	79%	21%	79%	0%
Nutrition	89%	21%	84%	0%
Opioids	100%	32%	79%	0%
Physical activity	68%	16%	84%	0%
Substance abuse (non-opioids)	100%	21%	79%	0%
Tobacco	95%	26%	58%	0%
Inspection Activities				
Body art (tattoos, piercings)	21%	0%	16%	53%
Campgrounds and RVs	74%	0%	21%	11%
Children's camps	58%	0%	53%	11%
Food processing	37%	0%	68%	0%
Food service establishment	100%	0%	5%	0%
Health-related facilities	37%	0%	63%	0%
Hotels/motels	21%	0%	42%	16%
Housing (inspections)	26%	0%	79%	0%
Lead inspection	42%	0%	74%	0%
Private drinking water	89%	0%	32%	0%
Public drinking water	37%	0%	84%	0%
Recreational water (lakes, pools)	100%	5%	21%	0%
Schools/daycare	53%	0%	79%	0%
Septic systems	95%	5%	16%	0%
Tobacco retailers	79%	26%	32%	0%
Other Environmental Health Activities				
Air pollution	26%	0%	84%	0%
Food safety education	89%	0%	47%	5%
Hazmat response	26%	0%	95%	0%
Indoor air quality	37%	0%	74%	5%
Land use planning	58%	0%	84%	0%
Noise pollution	47%	5%	79%	0%
Public health nuisance abatement	100%	0%	37%	0%
Radiation control	16%	0%	84%	0%
Vector control	53%	0%	79%	0%
Other Activities				
Animal control	26%	5%	89%	0%
Emergency medical services	5%	0%	100%	0%
Laboratory services	37%	26%	95%	0%
School health	63%	5%	63%	0%
School-based clinics	42%	0%	47%	26%

Notes: 2022 NACCHO data for n=19 LHDs. Respondents were allowed to select all that apply; percentages therefore may total more than 100% across rows.

Maryland's governmental public health is replete with professionals who are singularly dedicated to improving the health of Marylanders.

The state is fortunate to have public health professionals at both MDH and the LHDs who are highly skilled and knowledgeable. In particular, many of the LHD Health Officers (HOs) were recognized by external stakeholders as talented individuals who have a deep commitment to public service.

Partners support and enable both MDH and the LHDs to deliver foundational public health services.

A wide variety of partners (e.g., state government agencies, community partners, and health care organizations) collaborate closely with MDH and LHDs and serve in various capacities to make service delivery possible and enable communications to the public. Relationship building is central to the success of Maryland's public health infrastructure (see Partnerships).

The shared governance model between MDH and LHDs presents strengths and challenges to LHDs.

The shared governance model provides funding stability, professional expertise in specific areas, and needed oversight. Historically, the approach was meant to provide protection against decision-making that could be based purely on local political climates. Overall, there is general support for the shared governance model among the LHDs, but it can be difficult operationally, as described below.

It is a benefit and a curse. I have worked in both centralized and decentralized settings before. The shared model gives support, but has less flexibility to address concerns, especially related to funding, or the directives the state issues. The state doesn't always understand what the county is like or what is going on locally day-to-day.

Currently, the level of oversight by the state involves significant bureaucratic complexities and has created slowdowns in two major operational areas: a) recruitment and hiring of personnel; and b) grants management.

With respect to personnel, the state's Department of Budget and Management (DBM) purportedly sets the rules governing job classification, compensation, and recruitment and hiring processes that need to be applied at the local level when employees working within the LHD are officially employed by the state. With respect to grants management, the requirements imposed by MDH on the LHDs are often dictated by the rules governing federal funding flow-through to state subdivisions. These regulations from DBM and MDH can be administratively burdensome because of the length of time it takes to manage these processes which undermines efficiency developing and implementing public health activities and services. These burdens were identified as an issue across assessment activities.

There is an expressed need for enhanced communication between MDH and the LHDs.

There is a perceived lack of transparency in communication between MDH and LHDs, which has led to feelings of disrespect and a desire to improve communications so that misunderstandings are avoided. LHDs perceive communication with MDH as often unidirectional and feel that communications from the state are prescriptive directives without opportunities for constructive dialogue. For example, even in cases where the local entities might not be able to change the outcome of a new policy, the LHDs would welcome the opportunity to learn about the origins of the policy and have frank dialogue to improve understanding of policies, procedures, and funding requirements, as well as the opportunity to inform MDH of the their perspective on how the decision will impact on the LHDs.

At the same time, from the perspective of the MDH, LHDs are sometimes unaware of both the constraints that MDH is under and unaware of responsive and corrective efforts that MDH undertakes in response to the LHDs' concerns. MDH holds a monthly meeting with the HOs, and HOs are involved in several MDH and other state agency workgroups and committees. These touchpoints signify MDH's commitment to valuing the input of the local entities. The need to attend to multiple priorities simultaneously and time constraints can preclude thorough communication to the LHDs about the efforts and activities of MDH. Thus, the LHDs might be left unaware of efforts MDH is making to work on or remedy an issue. Therefore, the LHDs are not hearing the message that MDH is aware of a problem, and working on a solution, or that they do understand the implications for local entities, but multiple priorities prohibit timely attention to it.

Sometimes the state has to say no, but generally our approach is, how can we help you, get you where you need to be. There are challenges and rules. I like rules, but I also like trying to figure out how to be creative within those rules and boundaries. It is interesting. How can we make it work?

While some communication mechanisms exist, clearer, more regular, timely, bidirectional dialogues would go a long way to alleviating current tensions between MDH and the LHDs. These communications could focus on news of upcoming opportunities, potential funding challenges, expected changes to policies and procedures, and programmatic developments and experiences. LHDs desire opportunities to share their vision with MDH for tailoring programmatic activities to meet the local needs of community members.

The quality and quantity of current communication and dialogue forums are limited within MDH, and between MDH and several other state agencies and partner organizations.

Internal lines of communication between MDH subdivisions are not optimal and sometimes are perceived as fragmented and siloed. There was an expressed desire for improved communication within MDH. For example, MDH bureaus or offices that interact with the LHDs on specific programs are sometimes unaware of which other MDH offices also interact with the LHDs.

Public health isn't only an MDH issue. It is embedded in other areas of our community functioning and government structure, like transportation, housing, agriculture, and aging. Public health is everywhere.

I am not seeing the level of collaboration needed to tackle our problems as system-level issues. Sometimes there is work in one part that should involve other departments, but I don't know if that happens. We need more horizontal integration to address issues.

Years ago, I remember communication between the environment, labor, and health agencies that led to flagging individuals who had high blood lead levels due to exposures in the workplace. That way, when people show up at the doctor's office with symptoms, there can be a quicker explanation of what's going on. That's not happening now to the extent it should. We need to be able to better connect the dots.

Many internal systems at the state level lack personal interaction, creating delays and frustration.

Technology does not always translate into more efficiency. Direct personal communication is desired both within MDH and between MDH and other entities.

I want to talk to someone about what I need, but instead I have to put in a ticket. It's hard to type that on a ticket, and sometimes personal interaction is more efficient.

The Maryland Association of County Health Officers (MACHO) provides regular communication venues and valued support.

MACHO serves as an umbrella advocacy organization for the LHDs and regularly represents their views and perspectives to outside entities. As a convener, connector, and collaborator, they facilitate monthly HO meetings that are considered a "lifeline." They provide the LHDs with updates regarding funding opportunities, policy changes, and other important issues affecting LHDs. MACHO also organizes several ad hoc groups that meet regularly to bring together individuals that fill certain roles within the LHDs (e.g., Public Information Officers [PIOs], Human Resources personnel, epidemiologists). These ad hoc groups were consistently highlighted by the LHDs as very valuable. Informally, LHDs provide support and guidance to each other as they implement front line public health activities and services. They often help fill gaps in guidance from MDH, problem solve, and learn from each other, such as sharing information about available datasets and how to access them.

MACHO connects us to agencies that we might not have thought about to help us solve a problem. As LHDs, we share collective experiences around reporting and best practices for our respective communities. Before, during, and after the pandemic, the Public Information Officers monthly meeting has been a lifeblood.

Several state agency leaders and health-related partners expressed a desire to enhance cross-entity communications.

The sheer volume of activities that are being implemented within MDH and across multiple state agencies that are responsible for health-related issues, coupled with workforce shortages, makes communication difficult. Moreover, because many other entities outside government are involved in public health-related activities, including advocacy organizations, health care service delivery entities, and health profession member groups (see Partnerships), improvements in communication between health-related associations and MDH would help raise awareness of shared goals, leverage potential collaborators, and ultimately create a united front toward fulfilling these goals.

Maryland's health-related associations want to be more helpful.

There was a clear desire among several health-related professional groups in Maryland to increase their collaboration with MDH and provide advice regarding the development and implementation of large public health initiatives.

Our goal is to have regular meetings with MDH and be clear about what each role is and develop a plan to support one another in that work. That would be a major success—we are ready to hit the ground running.

It should be clear to associations like mine what the state's health-related goals are. The state should let us help them achieve those goals. If you don't need us, still let us know what the goals are. We might still be helpful by accident, or we might have a good idea.

There is a desire to enhance core operational and management expertise at the state level to increase efficiency and ultimately improve the public health system's ability to fulfill its foundational public health capabilities.

From the perspective of LHDs, it is recognized that the state has a deep bench of expertise in a wide variety of public health areas, including maternal and child health, epidemiology, infectious disease control, emergency response, and others. The LHDs expressed a need for more assistance from MDH in the following areas: grant preparation, submission, and post-award monitoring; data procurement, management, analysis, and translation to inform data-driven strategic planning; developing comprehensive prevention plans; understanding policies that affect community health; program evaluation; and workforce development and innovation. This expertise could then be tapped by the LHDs that do not have the local resources to execute these capabilities and help to more fully and effectively implement foundational public health services.

PHAB accreditation would provide a path forward toward strategic planning at the local level, but some LHDs lack the resources to pursue accreditation.

Half of the LHDs in Maryland are accredited by PHAB, 29% are exploring it, 8% are actively pursuing it and the remaining 18% are not pursuing accreditation. Accreditation requires formalized accountability of activities and outcomes with data and strategic planning, both of which are variable across counties. Pursuing accreditation requires significant staff time, energy, and resources, which is limited due to programmatic demands. For LHDs who have received accreditation, the process itself of having to internally examine goals and activities was considered a useful exercise. LHDs in smaller counties (by population size) are less likely to be accredited; only three of the LHDs in Maryland's eight smallest counties are accredited, compared with all the LHDs in the eight largest counties.

A lack of clarification exists between state, county, and local authorities as it relates to legal authority.

Complicated or ambiguous statutes at the state and local level have resulted in issues in which it is unclear where legal authority lies (e.g., the legal authority to mandate masking during the COVID-19 pandemic, or legal authority to regulate/enforce environmental policies).

Local Boards of Health (BOHs) provide an additional layer of guidance to the LHDs and are comprised of individuals with varied disciplinary backgrounds.

Table 2. Final Authorities Held by Local Boards of Health in Maryland	
	% of LBOHs
Adopt public health regulations	90%
Advise LHD or elected officials on policies, programs, and budgets	75%
Set and impose fees	65%
Hire/fire agency head (e.g., medical director/health officer)	45%
Approve the LHD budget	40%
Set policies, goals, and priorities that guide the LHD	35%
Request a public health levy	20%
Impose/enforce quarantine or isolation orders	15%
Impose taxes for public health	15%
None	0%
Note: 2022 NACCHO data for n=20 LHDs.	

Participants' Ideas for the Future

Maryland is in many ways already a national leader in public health, but maintaining this leadership position will require an enduring commitment for MDH and the LHDs to work together even more strongly as a united front. Moreover, there is a clear desire to strengthen and streamline the operations within MDH and their partnerships with affiliated sister agencies within the government and outside of the government. Leveraging these partnerships will improve the state's ability to implement programs in the foundational public health areas. Although it was acknowledged that governance issues are complex, clarification among everyone involved is necessary to define the responsibilities of state, county, and local authorities. Expanding the bench of expertise available to LHDs is also a critical need.

- **Improve the quality and regularity of communication between LHDs and MDH.** Better communication throughout the public health system would improve its capacity to address public health issues efficiently and effectively. This communication could include sharing models of success that could be scaled for broader implementation. Creating mechanisms for regular and clear communications between MDH and LHDs (e.g., dialogue forums, biannual conferences) in addition to the monthly Health Officers meeting could build trust, improve relationships, and help everyone understand the shared frustrations regarding timeliness of notifications about important issues, including policy changes and funding opportunities.

- **Strengthen horizontal lines of communication within MDH and between MDH and other state agencies**. Enhanced collaboration could alleviate unnecessary duplication, streamline workload, and potentially lead to partnering on funding opportunities.

- **Clarify the roles and responsibilities of state, county, and local authorities for matters of administrative policy, especially around hiring personnel.** There is a critical need to understand which agencies have authority over which policies and how administrative operations can be streamlined.

- **Hire several senior staff positions within MDH to ensure follow-through of the Commission's recommendations.** These individuals would be primarily responsible for implementing the recommendations of the Maryland Commission on Public Health, and monitoring the success of changes made to the system as a result. Moreover, they could be instrumental in designing and implementing large cross-cutting public health initiatives by leverage multiple governmental state agencies and external partners.

- **Expand core expertise with panels of experts that can provide technical assistance to both MDH and the LHDs on a timely basis.** Additional administrative assistance teams at the state level could help streamline processes such as workforce development; grant preparation, submission, and post-award monitoring; and data procurement, management, and analysis. On the programmatic side, expert assistance would be highly desired for data-driven strategic planning; prevention planning; policy development; community health; and program evaluation. This expertise could assist LHDs to more fully and effectively implement foundational public health services. One example of a successful partnership model is the Consumer Health Information Hub. The Horowitz Center for Health Literacy at the University of Maryland School of Public Health was designated by law in 2022 as the state's Hub.

- **Formalize ad hoc groups to support staff working in behavioral health, injury and violence prevention, maternal and child health, nursing, communicable disease, and chronic disease prevention and management**. The existing ad hoc groups facilitated by MACHO were consistently highlighted by their members as invaluable. This group structure should be expanded to additional focal areas, and could be leveraged to bring together group members and MDH to share ideas on what is working well and what might need improvement.

Funding

Framing Questions

- How sufficient are the financial resources provided to health departments to fund work in the foundational public health areas as well as other high priority initiatives?
- How can funding be optimized and made more flexible to deliver improved public health services for today's and for tomorrow's challenges?
- What challenges are experienced with respect to the procurement and spending of grant dollars?
- How could the procurement processes and contractor oversight at the state and local level be improved to promote accountability, and the efficiency and effectiveness of public health service delivery?
- In what ways could additional funding be used to fulfil critical needs?

Key Findings

Funding is insufficient to support both programmatic public health activities and the operational infrastructure of the state and local health departments.

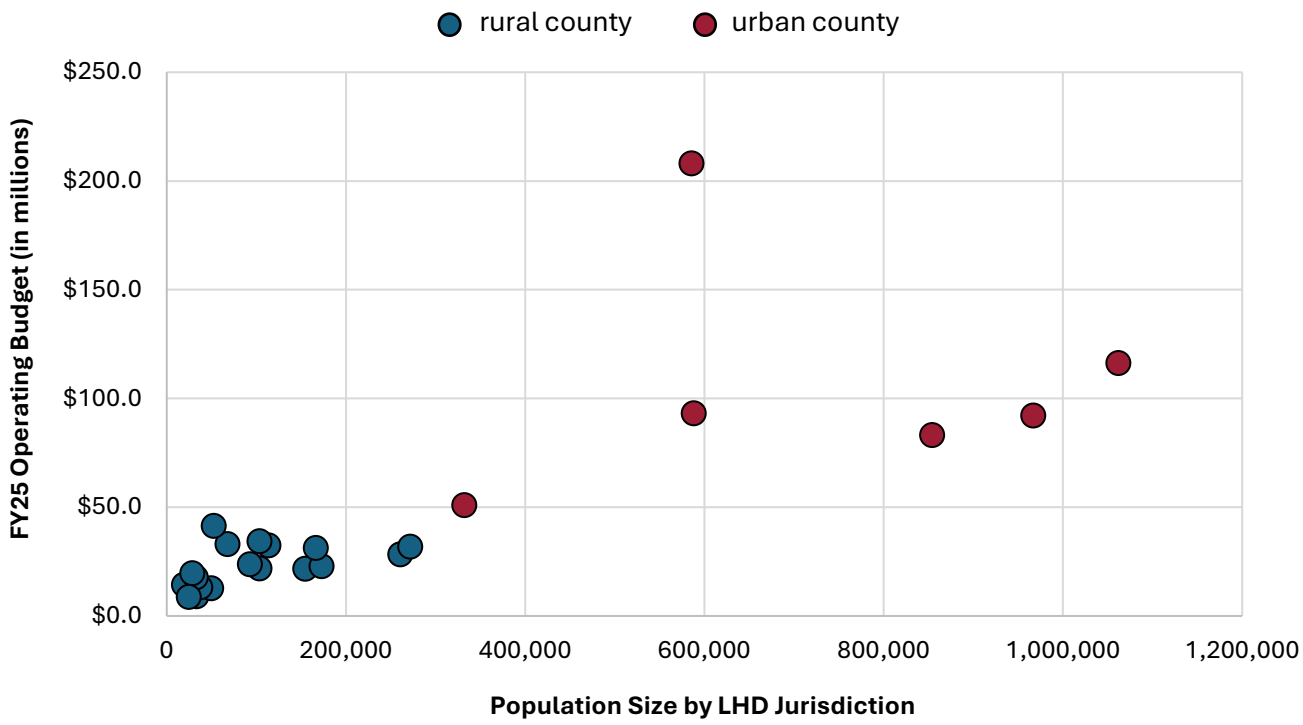
Budget constraints hinder core public health operations, such as staffing and program implementation. Inflation and ongoing reductions in public health funding exacerbate these challenges. The maintenance of existing programs or implementing new initiatives is difficult given the limited financial resources to cover both salaries and program costs. The contraction of COVID-19 funding will lead to declines in Maryland's ability to deliver essential services and provide resources to communities (e.g., mobile vans for service delivery might go unused because of a lack of funding for associated personnel).

Operating budgets vary widely among the LHDs.

The FY25 operating budgets among the LHDs vary from $8,600,000 to more than $200,000,000, totaling $1,060,000,000 across all 24 LHDs. The mean operating budget is $44,100,000, and the median operating budget is $29,700,000. Figure 1 shows that operating budgets are strongly correlated with the size of the population within each jurisdiction, such that LHDs in larger, urban counties have consistently higher budgets than smaller, rural counties. However, it is important to note that population size does not necessarily reflect the needs of the population. For example, in rural counties with fewer care providers in the community, there may be greater reliance on the LHD staff to provide clinical services.

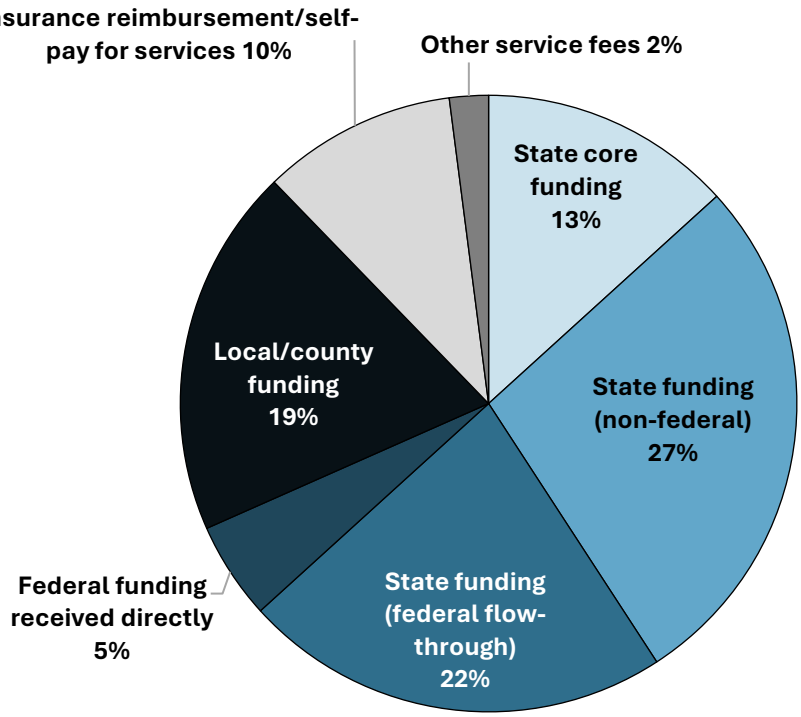
Overall, local/county funding, state funding (non-core), and federal funding passed through state entities make up approximately one-quarter each of LHD budgets, while Core Funding from the state is relatively limited (see Figure 3). Across LHDs, dependence on local/county funding ranges widely, from 5% to 71% of the operating budget. LHDs who receive less county support tend to rely more on insurance reimbursements and other state funding than other LHDs. There is relatively less variation in the proportion of the budgets that comes from Core Funding, which ranges from 8% to 21%.

Figure 2. Variation in LHD Operating Budgets by Population Served



Note: Population data come from the 2020 Census.

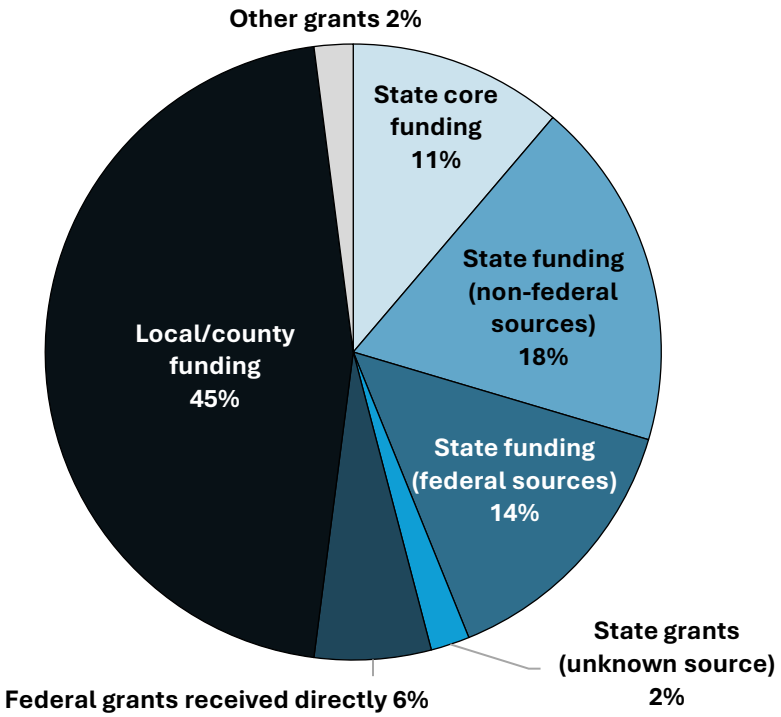
Figure 3. Financial Support for the LHDs: Funding Sources for LHD FY25 Operating Budgets



Many LHDs face significant funding limitations that affect their ability to hire and retain personnel, especially in primary care, nursing, epidemiology, communication, and evaluation, all of which are necessary for implementing essential programs.

As shown in Figure 4, the LHD workforce is supported primarily through county funding and to a lesser extent by state grants and Core Funding. Federal grants received directly by the LHD as well as other grants (e.g., foundation grants) do not support a significant proportion of employees.

Figure 4. Financial Support for the Local Public Health Workforce: Percentage of LHD Employees Supported by Funding Sources



Priorities for programming and initiatives are often determined by the availability of funding rather than the results of community needs assessments.

Ideally, needs assessments should determine areas of need, and funding should then go toward meeting those needs. Currently, available funding often dictates public health programming and programmatic priorities rather than the needs of the community. Not enough resources are devoted to proactively addressing health problems before they become medical or behavioral crises. The cost savings associated with preventive strategies are well known within the field of public health, but the system has not adopted a suite of preventive strategies that can be used to address problems in a more proactive way than is currently done (see Shifting Gears from Reactive to Proactive Strategies). There are several promising examples of demonstration projects that could be scaled up and evaluated for their broader application.

More flexibility in how to spend money at the local level is desired, but the state needs to balance flexibility with accountability.

There is a perception among the LHDs that funding received from the state to execute programmatic activities follows a "one size fits all model." However, there is variation between MDH, elected

officials, and state agency leaders regarding the perceived level of flexibility afforded to the local entities to creatively address the various needs of their community members. While it is generally known that federal flow-through dollars have inherent restrictions, it would be beneficial to specifically clarify the adaptability of different types of funding. Furthermore, more flexibility in funding allocation could improve health outcomes as it would allow LHDs to direct funds most effectively to their priority needs, which might vary by community. From the perspective of MDH, any additional flexibility must not come at the expense of accountability.

One-year funding periods create challenges in implementation and evaluation of public health programs and new initiatives, thereby threatening their sustainability.

The predominance of funding through "soft money" sources threatens the sustainability of public health operations. One-year funding cycles create challenges, because it can often take several months to receive the money and start up a program. Delays in receiving state grants is a particular challenge for LHDs. Other administrative requirements, including IRB approval, can also use up valuable time, leaving only a few months to implement programs before funding ceases.

One year of funding does not allow for the refinement of programs, much less a comprehensive evaluation of the effectiveness of programs, practices, or the implementation of new policies. Evaluation is increasingly a requirement to receive funding by federal and state agencies, but only process evaluations are possible within a short time frame. Process evaluations can be conducted during the year of funding, but seeing corresponding health outcomes requires longer-term evaluations. A catch-22 situation ensues—sustaining funding becomes very difficult if effectiveness outcomes of a promising short-term program are not demonstrated. For example, a community program to address food insecurity among school children might not be able to demonstrate improvements in school performance in the same year the program was initiated. In that case, funding might cease because outcomes were not demonstrated.

Instability in funding can impede partnership development and erode trust by community members.

Individuals in the community are reliant on services that require a steady stream of funding to remain operational. Developing productive, mutually beneficial partnerships with community organizations and community members takes significant time and dedicated effort. When funding is delayed or ends suddenly and services are discontinued, community members and organizations might feel abandoned and not willing to participate in future opportunities, contributing to public mistrust in public health.

Grants management systems to track and monitor multiple funding streams are antiquated and cumbersome, if they exist at all.

LHDs must manage many disparate sources of funding (e.g., Core Funding from the state, county matches, external grants and contracts, reimbursement for services, permitting and septic-related fees). Current software systems are not efficient for monitoring and managing the numerous sources of funding that LHDs have, thus requiring significant staff time even for very small grants.

Similar technical barriers exist at MDH. The Office of Contract Management and Procurement (OCMP) currently uses five separate software platforms to manage different components of procurement/contracting, which hinders the efficiency of the process. A single platform that allows for a contiguous, more efficient process is desired.

Current procurement requirements lead to delays in fulfilling objectives.

State procurement policies and procedures are set up to procure goods much better than they are to procure services. Public health personnel working locally and at the state level sometimes require ad hoc services quickly because of an emerging crisis or event (e.g., school-based infectious disease testing, assessment of a possible environmental hazard). The procurement process has been more complex and detail-driven overtime, resulting in a current system that is overly cumbersome and requires multiple steps that have unclear functions. Reviews by the Office of the Attorney General was cited as a particularly slow step in the procurement process, and the legal counsel at MDH described the volume of contracts submitted by the LHDs as difficult to manage. Clarifying and possibly simplifying the procurement procedures is highly desired.

It would really help to standardize the procurement process, provide more timely responses to questions, and make the whole process more transparent. Once you initiate the process, you are in a black box and have no idea what progress is being made.

Staffing for procurement and contracting varies widely, and limited staffing can result in delays, inefficiencies, and errors.

At MDH, OCMP initiates hundreds of contracts each year, with 361 procurements, interagency agreements, and memoranda of understanding initiated in FY24. The office has 21 FTEs dedicated to procurement, including a full-time chief of procurement, 16 procurement officers, and four procurement managers. Similar to the LHDs, the day-to-day monitoring of contracts is primarily assigned to other health department staff outside of procurement. OCMP does provide high-level oversight and guidance for the contract monitors, and more closely assists when contracts that are high value, politically sensitive, or underperforming.

The number of contracts currently executed/managed by the LHDs ranges from fewer than 20 to over 300, with an average of approximately 100 contracts. The staff time dedicated to procurement (e.g., a Procurement Officer) also varies widely, from 0 to 5 FTEs, as does staff time dedicated to monitoring existing contracts (from 0 to more than 10 FTEs). However, this staff time does not vary proportionately to the number of contracts; some LHDs with more than 100 contracts had 1 or less FTE, whereas some LHDs with less than 50 contracts had 10+ dedicated FTEs.

Approximately half of the LHDs shared that not having sufficient funding for dedicated procurement/contracting staff is a challenge. Not all grants have indirect cost policies that allow covering such administrative staff, or the indirect cost rate is too low to cover a meaningful amount of administrative time. Due to the lack of dedicated procurement staff, procurement-related tasks and especially monitoring contracts are often shared among program staff who wear many different hats. Because procurement/contract management is not their primary responsibility, they are sometimes not fully trained in contracting tasks. Staff turnover further complicates this, as it can lead to inconsistencies, and delays in hiring can leave the LHDs without staff in these roles for a long time.

Assigning these critical functions as additional duties to already overburdened staff members leads to delays, inefficiencies, and an increased risk of errors.

Insurance contracting and billing is highly burdensome for the LHDs.

Contracting and billing processes are a source of significant administrative burden for the LHDs, particularly for those who must provide expanded clinical services to fill gaps where there is a lack of health care providers in the community. LHDs are responsible for contracting with insurance companies, and this process is difficult, "unduly cumbersome," and slow. Maryland Code requires that the contracts be approved by the Secretary of Health and the local BOH. While the timeliness of BOH approval varies by jurisdiction, the Secretary's approval process was noted as a source of particularly protracted delays. For these reasons, it can take months to execute contracts, and the LHDs may be unable to bill for services during that time.

Furthermore, the time and effort required for the LHDs to manage billing and reimbursement is onerous. Clinical billing is governed by many rules and policies from the insurance companies that make the process complicated and time-consuming. Small errors can result in denials or payment delays. Insurance companies also frequently issue incorrect denials which require further staff time to submit appeals. These issues can lead to delays in payment that are difficult to manage for LHDs operating on thin budgets.

The Strategic Data Initiative (SDI)[2] review is a notable pain point for LHDs in the contracting process.

The SDI review process was described by the LHDs as fraught with problems, overly burdensome, and unclear. The requirements also limit the LHDs' ability to partner with small, local businesses who cannot afford the required audits (e.g., SOC 2, HITECH).

Participants' Ideas for the Future

Tight budgets impede Maryland's ability to address immediate and long-term public health needs. A community-specific, needs assessment-driven approach to funding is critical to ensuring that public health programming meets community needs. Flexible funding, without sacrificing accountability, will assist the LHDs in delivering programming and services that best serve their jurisdictions.

- **Increase funding for public health operations and programmatic initiatives.**
- **Explore options for multi-year operational budgets with the stipulation that funding is contingent on availability.**
- **Establish dialogues between MDH and LHDs regarding the balance between flexibility of funding and accountability, as well as methods of tracking performance and evaluating programs.**
- **Explore state-level protocols for contracting with insurance companies to improve efficiency and reduce burden on LHDs.**
- **Use standardized forms and documents across state agencies, including contract templates.**

[2] An overview of the SDI review process is available at https://health.maryland.gov/iac/Pages/sdi.aspx.

- **Invest in a digital platform to track contracts and grants and their progress throughout the system**. A fully digital procurement platform that tracks contracts throughout the entire procurement process both at MDH and the LHDs is highly desired.

- **Expand training for LHD staff in billing and reimbursement processes** to reduce additional burden associated with incorrect billing, denials, and payment delays, as well as training for both LHD and MDH staff in procurement procedures and contract management (e.g., how to establish clear performance measures/expectations for vendors), particularly for those who are not dedicated procurement officers, to reduce administrative delays and errors.

We need to invest in better systems to monitor funding and expenditures as well as hire skilled and well-supported personnel and procurement teams. In this way, we can streamline processes, reduce delays, and ensure that resources are acquired efficiently, and expenditures are monitored to support critical public health programs.

Workforce

Framing Questions

- What are the skillsets needed for a well-functioning public health workforce?
- What current workforce shortages exist today?
- How well are health departments able to recruit personnel to join the workforce?
- What are the challenges in hiring qualified individuals?
- What are the challenges associated with turnover?
- How can we retain qualified individuals to remain in the workforce?
- What administrative impediments need to be removed to improve human resource processes?
- What approaches and partnerships can enhance workforce availability, capacity, readiness, and skills for todays and tomorrow's public health challenges?

Key Findings

A strong public health infrastructure in Maryland requires a large, diverse workforce with skills and expertise in a wide variety of disciplines.

Many different types of skillsets are needed in the public health workforce. In addition to operational personnel (e.g., administrators, finance, human resources, supply chain and procurement managers, human resources, information technology), the public health workforce includes community health workers, a variety of clinical professionals (e.g., nurses, physicians, dentists), epidemiologists, program implementation staff, communications personnel, environmental health specialists, and food safety workers. To address the continuum of public health activities, Maryland's workforce is comprised of individuals with backgrounds in a wide variety of disciplines, such as public health, nursing, medicine, dentistry, epidemiology, and law. It is becoming more evident that individuals with expertise in the areas of data management and analysis, artificial intelligence, health care financing and organizational change management are also critically needed to address contemporary challenges and maintain a well-functioning public health system.

Among the LHDs, based on full-time equivalent (FTE), the largest workforce is nursing (i.e., registered nurses, licensed practical nurses, and advanced practice nurses), followed by office and administrative support staff, and business and financial operations staff (see Table 3). The clinical workforce is significantly larger than the workforce of traditional public health occupations, such as epidemiologists and health educators.

The size of the LHD workforce varies widely by jurisdiction.

The number of employees within each health department ranges from 67 to 857, with a median of 175 employees (see Figure 5). The workforce size differs significantly by rural/urban designation; the mean employee count for LHDs in rural counties is 160 (ranging from 67 to 279), compared to 664 among Maryland's urban jurisdictions (range 308 to 857; see Table 4). The workforce size is also a function of the jurisdiction's population size.

Table 3. Size of Workforce by Occupations, Totaled Across LHDs	
Occupation	**FTE**
Nursing (including RNs, LPNs, and APRNs)	1131.9
Office and administrative support staff	827.2
Behavioral health staff	547.8
Community health workers	491.6
Nursing aides and home health aides	402.4
Environmental health workers	328.3
Health educators	166.8
Oral health care staff	86.9
Animal control workers	64.3
Preparedness staff	54.6
Nutritionists	50.1
Epidemiologists	45.3
Public information professionals	43.0
Public health physicians	27.0
Laboratory workers	17.0
Note: These numbers reflect the total number of FTEs reported across 23 LHDs in Maryland who reported data by occupation in the organizational survey.	

Figure 5. Public Health Workforce in Maryland: Number of Employees by LHD

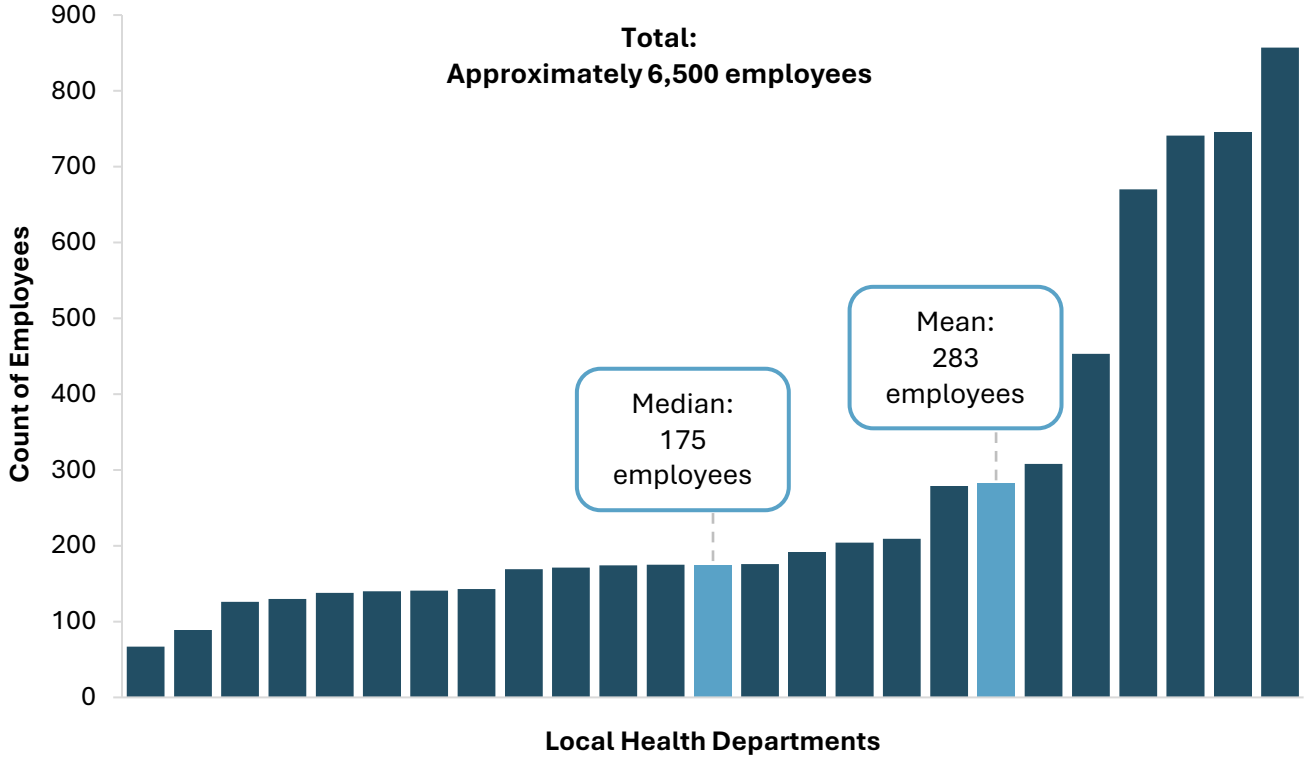


Table 4. Overview of Workforce Size, Population Size, and Rural/Urban, by LHD				
	Population size*	LHD employees		
		Number (headcount)	FTE	Count of current vacancies
Rural jurisdictions				
Allegany County	68,106	279	265.6	9
Calvert County	92,783	141	138.9	26
Caroline County	33,293	169	114.0	56
Carroll County	172,891	140	135.0	12
Cecil County	103,725	126	124.0	11
Charles County	166,617	192	175.5	27
Dorchester County	32,531	130	121.3	13
Frederick County	271,717	171	162.0	17
Garrett County	28,806	209	186.1	7
Harford County	260,924	175	169.0	4
Kent County	19,198	143	131.7	8
Queen Anne's County	49,874	89	83.0	7
Somerset County	24,620	67	66.6	2
St. Mary's County	113,777	176	176.0	21
Talbot County	37,526	174	145.5	6
Washington County	154,705	138	132.0	10
Wicomico County	103,588	--	--	9
Worcester County	52,460	204	--	18
	Mean:	160.2	145.4	14.6
	Median:	156.0	136.9	10.5
Urban jurisdictions				
Anne Arundel County	588,261	857	768.8	100
Baltimore City	585,708	741	684.0	--
Baltimore County	854,535	670	668.2	89
Howard County	332,317	308	271.4	26
Montgomery County	1,062,061	746	676.5	49
Prince George's County	967,201	453	453.0	178
	Mean:	629.2	587.0	88.4
	Median:	705.5	672.3	89.0
Overall				
	Mean:	**282.5**	**265.8**	**30.7**
	Median:	**175.0**	**165.5**	**13.0**

Workforce data come from the organizational survey. -- indicates missing data.
**Population data come from the 2020 Census.*

Workforce shortages are pervasive, and individuals with particular skillsets are in high demand.

Many individuals who had long histories of work experience left or retired from the public health workforce during the COVID-19 pandemic, creating new workforce shortages and intensifying prior shortages. Workforce shortages exist in four broad areas. First, individuals with expertise in core public health areas are needed, including epidemiology, prevention science, and biostatistics. Second, due to the proliferation of misinformation and the public's distrust of public health, there is a need for health communication experts who can translate science-based information. Third, there are clinical workforce shortages, including public health nurses, pediatricians, primary care providers, behavioral health care clinicians, and addiction medicine clinicians. Lastly, individuals are needed who have expertise in information technology and data management. These deficiencies in the workforce are further exacerbated by the need for the workforce to reflect the diversity of the communities being served by them.

Interestingly, the size of the overall workforce at the majority of LHDs has remained stable (43%) or grown (38%) since Fall 2019 (i.e., pre-pandemic), suggesting that some COVID-specific shortages have now been resolved. However, four LHDs (Baltimore City, Cecil, Carroll, Worcester) have experienced a shrinking workforce in that timeframe, with reductions ranging from 6-25%. It could be that the existing shortages are in critical positions that are "highly felt" by the LHDs.

Table 5. Change in LHD Workforce since Fall 2019

Change	LHDs
Grown by 26% or more	Allegany, Anne Arundel, Howard, St. Mary's
Grown by 16-25%	Montgomery
Grown by 6-15%	Baltimore County, Charles, Harford, Kent
Stayed about the same (within 5%)	Calvert, Dorchester, Frederick, Garrett, Prince George's, Queen Anne's, Somerset, Talbot, Washington, Wicomico
Decreased by 6-15%	Baltimore City, Carroll, Cecil
Decreased by 16-25%	Worcester

Note: Organizational survey data for n=23 LHDs.

There is an expressed desire to expand and strengthen the multidisciplinary skills of the workforce to address current and emerging public health challenges efficiently and effectively.

You need public health expertise, but you need the relationship building skills and the communication skills to build a bench of effective operators and leaders with the cross-training we need to solve the diversity of problems in a variety of settings that constitute the public health space.

Some areas of the state are impacted more by workforce shortages than others.

Rural counties such as those in Western Maryland and the Eastern Shore struggle to recruit and retain a workforce, particularly those early in their career, who are willing to commit to working and living in rural counties. Workforce shortages have also occurred due to a re-shuffling of individuals in the existing workforce in one location who take better paying jobs in a different location.

Recruiting individuals for the workforce is compromised by low salary levels.

Working in the public health arena is associated with lower salaries and fewer benefits compared to the private sector, making the positions less attractive to potential hires. Salaries are not competitive with private sector jobs.

The state job classification system has made it difficult to get skilled, qualified individuals into jobs in the LHDs and MDH.

Some positions that are needed in public health do not exist within the state's human resource system. The situation has worsened during the last five years. Using existing job classifications that do not adequately describe the position fails to attract the attention of potential qualified applicants.

The workforce mindset of individuals entering the workforce differs from earlier generations. There is a need to highlight benefits that extend beyond traditional benefits.

State positions do not have the inherent value they had to earlier generations who had a longer-term perspective on their relationship with their employers and where guaranteed future pensions were valued over high salaries. A large proportion of the incoming workforce prioritizes flexibility in work schedules, telework options, and higher salaries over benefits such as retirement fund contributions. The marketing of state-level positions needs to be improved (e.g., highlighting the total compensation package, articulating the value of benefit packages, marketing entry level positions as a valuable "stepping stone" to gain experience in the field) and/or perhaps offering paid competitive fellowships that carry prestige.

Other states that have compensation calculators where you can, as a human resources representative, visually show the candidate the total compensation. Having that kind of tool would be useful.

The pipeline into the public health workforce needs to be expanded and intentionally nurtured.

Several passive and active recruitment strategies are used in recruitment (e.g., postings on the state employee recruitment website, Indeed®, and job fairs). Sustained recruitment efforts are needed to broaden the reach for potential candidates for both state and local positions.

Some academic pipelines exist, but there is strong interest from all parties to expand and strengthen academic partnerships.

Public health education in Maryland is very strong. There are four accredited schools and programs of public health, numerous other undergraduate and graduate public health or related programs, schools of medicine, nursing, dentistry, and a variety of other allied health professional training to build Maryland's public health workforce. Often, partnerships between LHDs and academic institutions are based on geographic proximity; however, broader arrangements are growing. The Hilltop Institute at the University of Maryland, Baltimore County provides an example of how a successful academic partnership with MDH can respond to public health needs while operating independently. The three Maryland Area Health Education Centers, supported by the University of Maryland School of Medicine, are another example of a successful program to connect health professionals with community services. Pipelines and partnerships at both the undergraduate and graduate level are important, and pipelines in essential areas beyond what is strictly considered "public health," such as computer science or information technology, should not be overlooked.

The ability to hire personnel is impeded by specific administrative inefficiencies with Maryland's state human resources requirements.

The number of steps and approvals required by the human resources system to hire is extremely burdensome. Cumbersome and lengthy hiring processes deter candidates and create instability in the workforce. Specific barriers include the lack of flexibility in recruitment procedures, limitations in JobAps (the program used by the state to manage hiring), the rigidity of job classification titles, and the inability to offer competitive incentives. In some cases, promising candidates are lost and the second or third choices are hired because of issues with job posting requirements and hiring delays.

The steps it takes to go from developing a job description to post the job is in the 100s. For an entry-level position, 30 approvals might be needed to get it posted. A lot of manual labor is involved copying and pasting from spreadsheets—lots of time-intensive work and a ton of wasted personnel hours.

As a result of these administrative and bureaucratic delays, hiring often takes months. The LHDs' median time-to-fill[3] ranges from 35 days to 215 days. For half of the LHDs, their median time-to-fill exceeds 80 days. Median time-to-fill is longest for state merit positions (113 days), followed by local merit positions (75 days), and shorter for contractual/special payments positions at the state and local level (52 and 35 days, respectively). At MDH, the median time-to-fill for merit positions was 67 days in 2024.

The inefficiencies with the human resources system are frustrating for all individuals in management positions. Critical positions are vacant because of lack of funding and the administrative difficulties that create delays in hiring decisions. The ability to fulfill programmatic responsibilities and implement foundational public health capabilities is severely compromised as a result.

The numerous vacancies in public health positions, coupled with high turnover, are major vulnerabilities to Maryland's public health system have serious implications for the success and effectiveness of public health programming.

The effectiveness of programs can be impeded by instability in positions. Turnover at MDH and LHDs have resulted in loss of institutional knowledge. Turnover at MDH makes it difficult for staff members at the LHDs to have a key contact person on whom they can rely. Many employment vacancies exist within the public health system. Turnover places a huge burden on the remaining staff leading to burnout. Rebuilding institutional knowledge and personal connections is very labor and time intensive.

The public health workforce was a consistent and explicitly expressed issue of interest across listening sessions and among the comments submitted online. Programmatic suggestions and priority issues from the public came with the need for having the appropriate personnel and structure to sufficiently address various public health issues as well as the funding to do so.

Extreme challenges exist in retaining skilled professionals. Reclassification, incentives, and promotional opportunities are extremely limited.

Limited pathways for promotion and advancement further deter candidates from staying in the workforce, thereby creating instability and inefficiencies. It is difficult to retain qualified individuals

[3] Time-to-fill, as defined by the CDC, is the number of calendar days from the date the job description was posted for hiring to the date of the first day of work.

without incentives. The rigidity of job classification titles (as mentioned earlier) and supervisory policies (e.g., nurses cannot supervise social workers) affects promotion pathways and precludes offering competitive incentives.

Highlighting the good work of the existing individuals who have chosen governmental public health as their career choice is imperative.

The dedication and passion that the public health workforce exemplifies is extraordinary given the environments in which they work. New ways of incentivizing the workforce to maintain their compassionate mindset are needed because recognition would aid in building morale among the workforce.

It's belief in the mission. People who do this work for many years do it because they really believe in what they're doing, they believe their efforts are for the greater good. That's what keeps people here. Find those people and nurture their passion. Recognize them for the good they do. Make them feel part of a group. Give them an identity. Show pride for the work they do.

Offerings for training and continuing education exist; leadership, mentorship, and onboarding training were identified as gaps.

Professional development activities for existing personnel have become more common. Required trainings are more numerous and perhaps burdensome. Onboarding of new staff is often not adequate, usually due to competing demands of day-to-day deliverables and mandates. There is a need to build mentorship into the public health infrastructure at both the state and local level. Strengthening onboarding and mentorship could help with retention and morale. Leadership or administrative management training is not common among the existing workforce, as these skills are not typically covered in the public health or medical education curriculums. The available promotions at MDH often move people from content expertise roles to supervisory positions, yet these content experts can lack supervisory training. Lack of strong supervisors can then lead to issues in retention.

State telework policies have created challenges for the public health workforce.

Concurrent with the post-COVID-19 era have been major technological advances that create new conveniences (e.g., remote work) but require new skills and present challenges to management and leadership. Although this is not unique to public health, the bureaucracy and rigidity of the public health infrastructure make it less equipped to adapt to these changes. This is not atypical of government agencies, but personnel within LHDs and MDH see opportunities to make improvements.

There is a perception that the state telework policy is a "one size fits all" model, which leads to problems within the health departments. Telework is appropriate for some positions, but community health work largely requires building in-person relationships and face-to-face contact with constituents in the communities that we serve. More nuanced policies that acknowledge/ accommodate different needs and preferences would be prudent.

Building a diverse workforce that is representative of the community and understands the community it serves is a priority.

Maryland is one of the most diverse states in the United States, and it is critical that the workforce can interact with multi-generational community members who are racially, linguistically, and socioeconomically diverse. In addition, today's workforce must also be able to interact with and

reach community members with varying levels of proficiency and comfort with technology. They must be competent in a wide variety of communication methods to meet the needs of the public. The comfort level with technology is highly variable across communities and generations, and thus individuals working in public health must be competent in a wide variety of communication methods to meet the needs of the public. Even internally, there is a need to meet the needs of the multi-generational workforce who have different levels of skill and comfort with technology and in-person communication.

Public health nurses are the largest group by occupation within the local health departments but feel undervalued by the state.

More than 1,000 registered nurses, advanced practice nurses such as nurse practitioners, and licensed practical nurses work within the local health departments in Maryland, providing direct care, managing care coordination, and administering public health programs. Recently, the state adjusted job requirements for care positions, either "downgrading" them such that a position that previously required a Registered Nurse can now be filled by a nursing assistant or expanding them such that social workers, counselors, etc. can be hired. While the intent behind these changes might be to ease recruitment and hiring where shortages exist, some public health nurses interpret these actions to mean that the state does not value or respect the specialized training and strengths that nurses bring to the table.

Public health nurses expressed a need to resurrect nursing leadership representation at the Maryland Department of Health, such as a Chief Nursing Officer, which previously existed. Such leadership could coordinate nursing-related activities across Maryland (e.g., continuing education), provide technical assistance specific to nursing, and advocate for nurses, particularly when developing policies or revising job classifications that affect nurses.

Participants' Ideas for the Future

A key and urgent step forward to ensuring that Maryland has a strong public health workforce is to have dialogues between state and local leaders regarding how to eliminate the bottlenecks in the hiring process for personnel. Not having individuals with the right skillsets and experience levels in the right positions governmental public health workforce can have a negative cascade effect on workplace efficiency and morale. Once individuals are hired, new and creative ways of retaining and incentivizing the current workforce must be implemented. To strengthen the workforce, the state should:

- **Restructure state job classifications to meet the needs of a modern public health workforce.**
- **Hire individuals at salaries commensurate with experience and expertise.**
- **Reduce administrative burden of hiring processes to reduce time-to-hire.**
- **Provide training opportunities for existing personnel, especially with respect to onboarding, cross-training, leadership, supervision, and management.**
- **Strengthen partnerships with academic institutions to establish a more solid school-to-job pipeline and to offer creative opportunities for career advancement.**

- **Review and re-assess educational requirements for positions within the public health workforce.** For example, some positions that currently require a master's degree could be re-evaluated to determine if a bachelor's degrees in public health or certificate programs would be sufficient.

- **Explore creative ways of incentivizing potential candidates to enter the governmental public health system.**

- **Fund a volunteer coordinator position to provide continuity and leverage volunteer participation to improve emergency preparedness.**

- **Establish a nursing leadership position at the state level (e.g., a Chief Nursing Officer) to coordinate public health nursing activities.**

- **Build a permanent workforce rather than hiring continuously to address "hot topic" issues.**

Data and Information Technology

Framing Questions

- How are data being used to understand the health needs of the state and local communities?
- What impediments exist to access data?
- How are data being used to drive strategic planning and evaluation of public health activities?
- What key data, data analytics and IT issues, if addressed, could maximize assessment and surveillance, public health planning, accountability, performance management and effective and efficient collaboration with the health care delivery system?

Key Findings

Data are used to understand the prevalence of various health issues affecting the community.

Local data gathering efforts are used to understand the health issues that affect community members. Data accessed from federal sources provide state-level information, such as the Youth Risk Behavior Survey conducted by the Centers for Disease Control and Prevention (CDC). Epidemiologists and data analysts are critical positions within the governmental public health infrastructure to make use of data to fully understand the health status and contributing factors to the health of Marylanders. More individuals with expertise in these areas are needed (see Workforce). Only half of the LHDs currently have a dedicated epidemiologist or statistician on staff.

> *Our assessment and administrative people, IT people, epidemiologists—all of those are general funded positions, and that eats up the majority of our budget. We don't have enough funding to analyze the data and use the analyses to make decisions.*

The current IT infrastructure has limited interoperability.

Data systems are disjointed, lacking the ability to "speak to each other," which results in duplicative data processes (i.e., entering the same data into multiple programs). This limited interoperability of current systems is inadequate for today's data needs. Having multiple data systems impedes public health experts' ability to connect and work efficiently at a systems level.

Aging infrastructure and outdated technology are significant barriers to efficient operations.

Many public health departments operate out of older facilities that lack the space or modern amenities needed for effective service delivery. The vast number of outdated data systems used is extremely burdensome. Technological challenges arising from outdated electronic health records and insufficient IT support hinder efficiency.

LHDs expressed a need for a universal public health electronic health record (EHR) platform.

Currently, there are many EHRs that are used by the LHDs, and some that work better than others for public health needs. Many LHDs explained that most of the EHRs that they can choose between were originally designed for something besides public health. This, along with requirements to utilize data systems used by the state, has resulted in most LHDs using multiple EHR platforms; approximately three-quarters of LHDs currently use four or more systems. PatTrac, CAREWare, and Patagonia are the most widely used platforms. These EHRs are currently used to track an array of information (see Table 6), which would need to be incorporated into a universal EHR to meet the needs of the LHDs.

Table 6. Services/Programs Using An EHR Platform	
Service/program	**% of LHDs using EHR for service**
Behavioral Health (at least one service/program)	**88%**
Behavioral health care coordination	75%
Harm Reduction Program	29%
Crisis mobile services	21%
Crisis walk-in services	33%
Court-mandated evaluations	33%
Outpatient behavioral health treatment services	63%
Peer recovery support services	63%
Residential/inpatient behavioral health treatment services	21%
Chronic Disease Prevention/Management (at least one service/program)	**79%**
Cancer screenings and treatment	67%
Asthma/lead control	67%
Diabetes education/management programs	17%
Tobacco/vaping cessation programs	25%
Oral Health (at least one service/program)	54%
Fluoride applications	50%
Emergency dental coverage	46%
Dental evaluations and treatment clinical services	54%
Infectious Disease Tracking and Control (at least one service/program)	**100%**
Tracking of sexually transmitted infections (STI; including HIV)	88%
Treatment of STIs (including HIV)	88%
Tuberculosis clinic	96%
Immunizations	100%
Environmental Health (at least one service/program)	**100%**
Food safety	96%
Wastewater management (septic/percs)	71%
Drinking water (wells)	79%
Recreational water monitoring (pools, beaches, etc.)	75%
Rabies (animal-side)	67%
Campgrounds	67%
Mobile home parks	79%
Community environmental health complaints	75%
Maternal and Child Health (at least one service/program)	**100%**
Administrative Care Coordination Unit (ACCU)	83%
Home visiting programs (e.g., Nurse Family Partnership, Healthy Families)	88%
Reproductive health clinic	21%
Other Programs/Services (at least one service/program)	**96%**
Health equity assessment	13%
Injury prevention	67%
Medicaid transportation program	33%
Occupational/employee health	42%
School-based health clinics	38%
Other clinical services	75%
Note: Organizational survey data for n=24 LHDs.	

Current data systems are used to understand service delivery but have limited utility.

Currently, some systems are not able to count both services and the people receiving those services. Systems are needed that can answer all the following questions: How many patients are receiving a service? How many times is the same person receiving a service? How many people who receive one service show up in another service? How many people are reached? Where are the service gaps? This also requires systems to be able to speak to each other, across types of systems, and across jurisdictions.

Access to data is not consistent across public health entities which impacts effectiveness.

Public health data are collected through many different systems, and accessing data from these systems is difficult. Barriers to access and utilization include:

- Data access that relies on "who you know"—i.e., personal connections between health department staff and contacts at other departments/agencies
- New HOs and staff who might not be aware of all the data that currently exists
- Lack of data sharing agreement templates, or cumbersome data sharing agreements
- Difficulties sharing data across counties, even when patients travel across counties for care

Community health needs assessments are limited in their utility to serve as the foundation for public health activities.

Community health needs assessments are typically focused on quantifying the prevalence of problem outcomes in a community rather than assessing the contributory factors that might give rise to various health problems. Many community-level factors are highly influential in shaping individual behavior but are not typically measured on community health needs assessments. For example, perceived safety and the availability of walking paths in a neighborhood could influence exercise opportunities. Similarly, social determinants of health are often limited to individual-level profile variables (e.g., race/ethnicity, education) rather than including macro-environmental level conditions in which people live, work, and play that influence their health behaviors. If we are to improve the use of data to drive programming, which was a notable theme emerging from public comments and interviews, then we should also ensure high levels of data quality and that the measures used are adequate and meaningful.

CRISP is a sophisticated data system that collects data from patients who receive care at hospitals and providers in Maryland. Support for expanding CRISP for use as a public health EHR is dependent on familiarity with its capabilities.

Approximately half the LHDs (46%) currently use an EHR platform that connects to CRISP. Accessing information from CRISP is already widespread among the LHDs. Data on hospitalizations/emergency department visits, substance use disorder and overdose fatalities/non-fatalities, COVID-19 reports, and the Prescription Drug Monitoring Program were utilized by more than three-quarters of LHDs, as is the Public Health Dashboard. Use of CRISP for Medicaid redeterminations and communicable disease information was less common. Only one LHD does not currently access these types of information from CRISP.

CRISP is connected to every hospital and has the ability to do encounter alerts. CRISP could have encounter alerts that are public-health oriented or social service oriented. A lot of the primary care doctors have an alert for their Medicaid patients. It's about leveraging CRISP for public health.

Improved timeliness of data availability is needed to drive prevention strategies, messaging, and other public health activities.

Epidemiologists understand why premature data releases can cause issues when presenting data to external parties, such as the public or elected officials. However, delayed release of datasets for analysis can make it difficult to identify emerging trends, drive prevention initiatives, and be responsive to the public and elected leaders who might not understand why data are delayed. Some state agencies/departments prepare data to be publicly available more quickly than others; learning about those agencies' processes/systems could help to identify ways of streamlining it for agencies experiencing delays in data release.

Dashboards are an efficient method for improving data access and transparency.

MDH dashboards are a valuable asset, and additional dashboards that afford the opportunity to examine local-level data would be welcomed. Dashboards free up time and effort (as they replace the need for staff to process multiple and repeat requests for data), allow for greater transparency, and improve the timeliness of data sharing. However, currently, finding MDH dashboards can be difficult, because they are generally housed within their sponsoring administration/office's page throughout the MDH website. A "one-stop public health dashboard" webpage that houses all MDH dashboards in one location would be very helpful.

Regionalization of data collection, data surveillance, and contact tracing must not exclude access for the LHDs. Regionalization of data efforts can have unintended consequences.

Efforts to establish an efficient regional surveillance contact can have unintended consequences. For example, the regionalization of STI surveillance and contact tracing has led to many LHDs being unable to follow cases, conduct contact tracing, and monitor trends. This has resulted in increases in STIs in multiple counties.

The current workforce lacks individuals with contemporary IT expertise.

Although 42% of LHDs reported that they had at least one staff member with expertise in public health informatics, many expressed the opinion that finding, hiring, and retaining individuals with contemporary expertise in data management and analysis is difficult. The disparity between public and private sectors salaries is particularly amplified for IT positions.

Lack of automation and data system coordination burdens the workforce at both MDH and LHDs.

This outdated IT and data infrastructure creates unnecessary and redundant efforts on the workforce such as still requiring/demanding manual entry, use of Excel spreadsheets, manually re-entering data from one system to another, and unautomated systems. Only 29% of LHDs have fully automated lab reporting, and 21% have fully automated case reporting and syndromic surveillance reporting. There is a need for more automation to avoid duplicative work and free up staff time.

Participants' Ideas for the Future

The LHDs expressed a need for better communication between MDH data providers and the LHDs (the epidemiologists, ideally, but at least the HOs) about when data are available. Specifically, they suggested a listserv that would a) provide a timetable of when to expect key datasets, and b) provide notifications of when data are made available. Additionally, more consistent processes for requesting data across the MDH agencies, including a designated contact for each agency, would be helpful. Pursuing MOUs or other data agreements that facilitate data sharing would be valuable for the health departments. Finally,

making all published data available to LHD staff as an Excel download (instead of PDF only) is a small change that would be very helpful.

- **Increase funding for data collection and analysis efforts.**
- **Invest in modernizing hardware and software to improve data management, assessment and surveillance capabilities, service delivery and evaluation.**
- **Improve timeliness of notifications regarding when data is available to individuals who need the data for planning purposes.**
- **Reduce barriers to accessing existing data through the provision of templates for interagency data use agreements and memoranda of understanding.**
- **Designate specific individuals within agencies who could be a single point-of-contact regarding data on specific topic areas.**
- **Ensure all LHDs have access to epidemiological support across content areas.**
- **Establish a public health electronic health record system (e.g., explore how to leverage existing systems or existing plans for data systems). Such a system should have integrated billing capabilities.**

Communications and Public Engagement

Framing Questions

- What approaches do health departments use to keep the public informed about health issues?
- What barriers exist to translating science into effective messaging?
- How does the recent rise in misinformation impact the ability of public health professionals to communicate?
- In a rapidly changing health information environment, what are the best ways to communicate and share actionable information with the public and get meaningful input from the public?

Key Findings

Communication with the public has two broad goals—to disseminate science-based health information and to relay information about public health services and clinical care.

Ongoing science-based messaging in clear language and free from professional jargon, using terms the public understands, is critical to break through the vast amount of non-science-based messaging occurring daily. Health departments must feel accessible, and public health services are not useful if the public is unaware that they exist.

A wide variety of methods are being used to communicate with the public.

Much of the public is unfamiliar with the broad array of activities and services that constitute public health. Therefore, public health leaders in Maryland use multiple strategies to provide communities with health-related information. Different populations have different needs, such as multilingual resources and culturally tailored messaging. Traditional methods, such as flyers and in-person engagement are effective complements to digital strategies like social media. The breadth of communication tools used by the LHDs, specifically, can be seen in Table 7.

Table 7. Communication Tools Used by the LHDs

Communication tool	% of LHDs using tool
Print media (e.g., brochures, flyers, newsletters) distributed to organizations in the community	100%
Webpages with health information	100%
Facebook®	100%
Ads on broadcast media (TV or radio)	96%
Print media (e.g., brochures, flyers, newsletters) mailed to recipients	71%
Instagram®	67%
Electronic media (e.g., newsletters) emailed to recipients	67%
YouTube®	54%
Ads/posters in transportation settings (e.g., ads a bus stops, on buses)	46%
LinkedIn®	46%
X® (formerly Twitter)	46%
Note: Organizational survey data for n=24 LHDs.	

The effectiveness of these communication methods varies both regionally and by the population being reached. Social media was most frequently named by the LHDs as an effective communication channel. Facebook was highlighted as having high engagement, though it may be more effective for older populations. Instagram was mentioned for younger populations, though it is considered

"inconsistent" in terms of its reach. Additionally, paid geo-located ads on social media are generally more effective than simply posting on the health department's own accounts. Billboards were mentioned by rural counties as an effective strategy, with static billboards being more successful than digital signage. YouTube, X, and radio ads were most frequently named by the LHDs as ineffective communication tools.

> *One of the biggest challenges of effective communication for public health is that there are so many ways to communicate, and they all reach different audiences. It takes a lot of time and energy (and funding sometimes) to engage with all the different channels and media.*

The variety of languages that LHDs and MDH use (or strive to use) has expanded dramatically.

Providing resources and information in the languages spoken by Maryland residents is critical for effective communication. All LHDs currently provide resources in Spanish, although some expressed a need to expand their Spanish offerings. Other languages in which resources are currently provided included: Chinese (Mandarin/Cantonese; 25%), Haitian Creole (21%), Korean (13%), French (8%), Vietnamese (8%), and American Sign Language, Dinka, Nuer, and Tagalog (each 4%).

State and local health departments need additional resources to translate information into different languages, particularly in Haitian Creole, Mandarin, Cantonese, and Arabic. Translation service costs are not always covered by grants. This diversity of communication needs, as well as the proliferation of misinformation, has added to the labor burden of both the LHDs and MDH.

While progress has been made, many challenges remain to reach subpopulations and successfully align messages with local contexts to ensure maximum impact.

Some groups are harder to reach than others and require intensive efforts to disseminate information. Many local news sources are drying up (e.g., local newspapers shutting down or changing how often they go to print), and it can be difficult to get local information out or know where it will be seen.

> *Public health is not a professional advertising group. The downside is we will always fall short because we are a government agency and not an influencer group.*

In-person events allow for more conversations with community members.

Over-reliance on online communication can be limiting and unreliable because social media evolves so quickly, and it is difficult to predict whether a post will be seen by many or only a few. "Old school" methods of face-to-face communication during in-person events must be part of any public health communication strategy.

> *Information must be in a format the public understands. Some of our staff has gone to literacy trainings to help. We have a doctor that did a Facebook live with the Spanish population that was well received. We have hired more bilingual staff, because people need to see and hear people that look like them.*

Effective public communications significantly add to the workload of existing public health workers; utilizing experts in health communications and health literacy is highly desired.

Overall, the complexity of communications in the world today has added enormous burdens to public health work, and the field has not been able to keep up in terms of resources, funding, or staffing. One-quarter of LHDs do not have a dedicated communications team or PIO. The daily demands

placed on both MDH and the LHDs can leave little time for developing a full communications campaign. Often there is only time for a flyer or a social media post. In some instances, there is little time to update websites and fix expired or broken links.

Public mistrust in public health is a significant barrier to absorbing health-related communications.

Public health's image problem has existed for some time but was significantly exacerbated by the COVID-19 pandemic. Issues with trust in public health broadly, and health departments and public health officials more directly, remain in the aftermath of COVID-19. Health information and recommendations are often viewed with high levels of skepticism and negativity since the pandemic.

If you mention public health, the response is "oh, you are going to make me do something I don't want to do, like vaccinate, lockdown, wear mask, etc."

Mistrust in science and the proliferation of misinformation is widespread. There are concerns about the amount of misinformation that people are exposed to on a regular basis, for example, often around the effectiveness and safety of vaccinations. There is a feeling that many people are not interested in doing something "for the public good" anymore. Health departments struggle to find successful communication approaches to overcome the misrepresentation of scientific evidence. Translation of scientific evidence remains a high priority, but a constant challenge.

Good communication is predicated on good relationships. Partnering with relevant and "trusted" messengers/influencers is critical for building a trusted relationship with the public.

Sometimes the same health message will be better received when it comes from a community partner—ideally a community "champion"—than when it comes from the health department. Therefore, finding and developing relationships with the right messengers is crucial. Trust can facilitate public health efforts or, if absent, impede public health efforts. Messengers must be believable, relatable, trusted, and able to engage with the priority population to have an impact.

Trusted messengers are needed but can be hard to find. What do we need to do to be trusted, or can we identify the trusted individuals in other networks? Our job is not necessarily to get people to listen to us, but our job is to figure out how you trust the right message, and figure out who those messengers are, and work with them.

Communication isn't about saying it loudly; it's about community building. It requires patience and investment. You can't just say it; you need to get other people to help you say it.

Establishing a continuous and stable messaging system with trusted partners will strengthen the public health support system and build messaging resilience against misinformation.

Dialogue needs to happen regularly, not only when there is a crisis or an ask. Building trusted partnerships is an ongoing endeavor; communications must happen throughout the year to solidify relationships so that they endure during times of stress.

Sharing data and facts is not enough. Information must be made relevant through stories and lived experiences.

Collecting and reporting data are core mandates for public health professionals. However, data can feel abstract, and public health is ultimately about people (someone's child, grandchild, parent, etc.). Public health officials need to remind the public and decision makers that the data and numbers reflect individuals and communities. Compelling testimonies and real-life examples from constituents or advocacy groups provide weight to the message and present complicated information in accessible and understandable formats. They help translate public health from the population level to the impact on the individual. Finally, today, the public has an increasingly limited attention span. It is important to have an "elevator pitch" that is brief, concise, and does not use too much jargon or "dry doctor speak."

Personal stories give weight to the advocacy process. Research serves as a foundation for knowing what story you need to tell; and it helps in setting priorities, but for policy makers, you need that additional layer of lived experience to tell a compelling story. Data is abstract, it doesn't help you establish a personal connection. Stories of lived experiences do. You need both.

Uni-directional communication is not public engagement.

Communication campaigns and other health messaging provide information to the public but are not always designed with the input from the public. Further, when engagement with the public is attempted, the response may be weak because the relationship is tenuous. Engagement with the public is an essential ongoing activity that requires trained and supported personnel. Such engagement may serve to mitigate mistrust and improve receptivity to public health messaging. Consistent and quality engagement strategies improve the quality, acceptability, and responsiveness of programs and initiatives, and their chances of success when the community has been involved in planning, development, and implementation.

Communications and relationships with elected officials need to be strengthened. Elected officials desire information that is compelling and clearly demonstrates the need for public health activities.

Many HOs have strong relationships with their legislators, but there is a need to build better, ongoing relationships with government and elected officials. Some legislators expressed that they are not aware of the LHDs' budget constraints and that more information would be welcomed. If they do not understand that investing in prevention and prioritizing public health is important, funds will not flow to public health. Legislators concerned with fiscal priorities may not fully appreciate the link between current public health spending and improved health outcomes and savings in the future. Improving policymakers/ legislators' understanding of public health and the value of prevention is critical.

Our health department director is extremely communicative and is able to explain the issues to us in a way that makes sense and makes them real, not just a brainy explanation. She brings it to our level and explains why this matters to everyone. She respects others and meets them where they are.

Communication with elected officials often only occurs when a problem arises. However, forging relationships through regular communication and meetings about the needs of their constituents is very important. This should include meetings without demands or requests, with the focus on relationship building, and can include inviting officials to community events that showcase public health initiatives.

Legislators appreciate receiving information quickly, in clear language, and without too many unnecessary details. Balancing evidence-based facts with real-life stories is necessary. Additionally, legislators want to hear from constituents, not only the HOs. They value the Maryland Association of Counties' perspective and hearing what is happening in other jurisdictions.

Recently, I only had time for people to have a seven minute meeting with me. I don't have time for pleasantries; march in and get to the point. Practice the pitch, get it down, short and to the point.

Evaluation of communication methods and campaigns is lacking.

There is limited funding, time, and resources for evaluations of communications campaigns. The structure of many public health communications makes it difficult to evaluate impact. Often, only the reach of the communications can be measured. There are challenges in evaluating the effectiveness of social media campaigns as well.

Participants' Ideas for the Future

To maximize the impact of communications with the public, trust with the community must be rebuilt. Efforts are underway to do so, but momentum must be sustained, ideally with additional resources for dedicated communications staff. Outsourcing to experts or having more available training and skill building in health communications and health literacy could improve the ability to create persuasive broad reaching messaging from "the dinner table to the decision makers" to combat misinformation. Strengthening our ability to communicate will help us compete with the vast array of social media influencers and sources of misinformation that are pervasive today. Public engagement is a distinct and valued public health capability. We must create more opportunities for true public engagement. Evaluations should strive to examine both reach and impact of communication strategies. Legislation for programmatic directives must include funding for evaluation.

Overall, health communications need to be treated as a consistent need (there is never a time when messaging is no longer needed), and individuals with this specific area of expertise should be utilized, with available funding dollars and workforce development to reflect that need.

- **Create regular mechanisms to truly engage with the public, with an emphasis on bi-directional communication.**
- **Evaluate communication campaigns methods for their impact.**
- **Translate and disseminate data for policymakers on a more regular basis – (e.g., "Maryland data point of the month" on a specific health issue).**
- **Explore options for communicating the value of public health across the legislature, rather than only in health-related subcommittees.**
- **Enhance resources for written and oral translation services.**
- **Engage a dedicated PIO/communications lead at every LHD who is provided with sufficient support and resources for marketing available services and evaluating communication strategies.**

- **Identify more trusted messengers of health information and expand the use of both stories and data in communications.**

- **Create forums for showcasing and sharing experiences of promising or successful models.**

Special Topic Areas

Partnerships

Framing Questions

- How do partnerships enhance health departments' capacity to fulfill their missions?
- What partnerships exist and are they valuable?
- Have partnerships been developed to their full extent and are they with the right partners?
- What are the barriers to developing and maintaining productive partnerships?

Key Findings

Partnerships play a key role in the public health infrastructure.

The public health infrastructure relies heavily on a breadth of partnerships (see Table 8). These partners support public health by:

- Providing extra personnel and/or expertise
- Connecting and providing trusted outreach to priority populations
- Providing support space for hosting events, seminars, testing, clinics, vaccination sites, etc.
- Conducting community needs assessments
- Sharing health-related communications
- Providing and/or accessing data to supplement LHD data
- Supporting the needs of priority populations
- Advocating for healthy communities
- Developing new technologies

Partnerships between MDH and many other entities are a critical part of the public health system.

MDH diligently works to forge partnerships with numerous types of entities and leverage their expertise in many areas of public health such as behavioral health, maternal and child health, infectious diseases, and chronic diseases.

Partnerships with health care associations and providers are strong and an essential link between prevention and care/treatment.

A wide range of beneficial partnerships exist for the LHDs and MDH that include primary care providers, dentists, emergency medical services and emergency departments, federally qualified health centers, hospital systems, and behavioral health treatment/recovery-oriented organizations.

These partnerships fulfill a variety of functions including laboratory testing and timely processing of specimens, advocacy, providing care and services (e.g., screenings to identify high-risk individuals), conducting needs assessments, and providing access to data. Health care association partnerships fill critical functions such as tracking and acting on legislation that will affect local entities, providing technical assistance and training, assisting with marketing efforts, and other forms of support.

LHDs have strong partnerships with numerous local community partners that help facilitate and support their efforts.

LHDs rely on partnerships with a variety of key players and organizations in their communities. These partnerships are essential to their work and help them connect with communities and maximize resources.

Table 8. Example Public Health Partners	
State Agencies	**Health Care Service Delivery Partners**
Department of Aging	Addiction treatment providers
Department of Agriculture	Hospitals
Department of Budget and Management	Laboratories
Department of Education	Mental health providers
Department of Environment	Primary care providers
Department of General Services	Pediatricians
Department of Information Technology	
Department of Labor	**Local Partners**
Department of Occupational Safety and Health	Elementary and secondary schools
	Correctional facilities
Advocacy Organizations	Faith-based organizations
Maryland Association of Counties	Fire departments
Maryland Assembly on School-based Health Care	Homeless shelters
Maryland Hospital Association	Housing Authority
Maryland Public Health Association	Law enforcement
Maryland Rural Health Association	Libraries
Mid-Atlantic Association of Community Health Centers	Local boards (e.g., local boards of education)
Maryland Nurses Association	Recovery support organizations
Maryland Dental Action Coalition	Non-profit organizations
Maryland State Medical Society (MedChi)	Soup kitchens and food banks
	Transportation Authority
Commissions and Other Entities	YMCA Boys and Girls clubs
Maryland Health Care Commission	
Chesapeake Regional Information System for our Patients (CRISP)	**Policymakers**
Maryland Community Health Resources Commission	State Legislators
Maryland Health Services Cost Review Commission	County Executives
Umbrella Organizations	**Academic Institutions and Health-related Programs**
Local Health Improvement Coalitions	Area Health Education Centers
Board of Health	Extension programs
Maryland Association of County Health Officers (MACHO)	
Maryland Association of Counties (MACo)	

This list is not exhaustive but demonstrates the breadth of partnerships necessary for success in protecting and promoting the health and wellbeing of Marylanders.

Fostering a sense of partnership with community members and populations is needed.

Community partnership development goes beyond collaboration with established entities to include establishing partnerships with community members and populations. At its best, authentic community engagement is the tool that creates realistic partnerships between state and local health departments and the respective communities being served. This requires members of the community and populations impacted by inequities to be involved in decision-making.

There can be challenges in establishing fruitful academic partnerships.

Academic partnerships need careful consideration and structuring to maximize benefits. Some academic partnerships work better than others. Key factors include level of faculty involvement, faculty oversight of students, availability of stipends or credits, and ability of the health department to supervise on site. Partnerships should reduce the burden on LHDs rather than add burden.

Increased communication and data sharing would strengthen all partnerships.

Lack of communication and data sharing can be a concern that hinders partnerships. Particularly when state or local government agencies are serving the same populations and families, having open communications and a system in place to securely share information and data could improve both partnerships and the efficiency of services provided. Opportunities for improving communications and transparency such as a secure portal, a one-stop information hub, or weekly calls or memos should be identified.

Partnerships between state and local public health entities and the K-12 school system are integrated into the public health infrastructure and functioning well.

Many examples exist of very fruitful collaborations between LHDs and K-12 schools, including establishing school-based health centers, employing school health nurses, and implementing early intervention programs to effectively address developmental delays at an early age.

Mutually beneficial academic collaborations exist between MDH and the LHDs and both undergraduate and graduate educational programs, but strengthening and expanding these partnerships is desired.

These include undergraduate and graduate programs in public health, nursing, social work, pharmacy, and medical schools (see Areas for Future Exploration).

Partnerships between state and local public health entities and businesses in the private sector are emerging, especially after the pandemic.

Successful partnerships have been forged between LHDs and the business community through membership in the Chamber of Commerce. For example, pharmacies are a relevant business partner for communicable disease control and continue to provide additional avenues for outreach as well as logistical support and assistance in reaching the public with messaging.

Many funding opportunities emphasize partnership and collaboration.

Funding opportunities that require or encourage partnerships are increasingly used to incentivize partnership development and to maximize the impact of resources.

Local partnerships face challenges after the COVID-19 pandemic.

The pandemic strengthened some partnerships, but others need rebuilding after the pandemic. Many public health's partners experienced high burnout after COVID-19. For example, many faith-based organizations feel drained from the partnership, and some struggle with providing public health messaging that can put them at odds with their congregations who do not welcome the messaging. There is a need to reassess how to engage successfully with partners such that the partnership is supportive, goals are aligned, and the partners feel valued.

MDH and LHDs must continually search for new partners.

The LHDs have their "go-to" partners but must continually explore ways to identify and connect with new partners. LHDs in larger counties typically have more potential partnerships available whereas LHDs in the smaller counties often draw from the same pool of partners. A benefit of the smaller counties' relationships with their partners is well-established and extremely close relationships. However, due to the limited partners in the area, it also can result in excessive strain on these partnerships, leaving the partners feeling overtaxed.

Emergency Preparedness and Response

Framing Questions

- How prepared are communities to respond to an emergency or public health crisis?
- What are the advantages and disadvantages of the current system in terms of readiness?
- What resources can be mobilized to support and enhance the effectiveness of emergency preparedness and response and the Medical Reserve Corps?
- What/where are the deficiencies in both infrastructure and operations?
- Where are the opportunities for improvement?
- How can the effectiveness of the Maryland Responds Medical Reserve Corps be increased?

Key Findings

Maryland is not fully prepared for a major crisis; state agency leaders do not feel adequately prepared.

The COVID-19 pandemic underscored the importance of robust readiness for any type of widespread disruption that could have health consequences—including natural disasters, cyberattacks, bioterrorism, and other viral outbreaks. MDH leads emergency planning at the state level and provides essential guidance and support to local jurisdictions. Officials at both MDH and other state-level agencies identified many logistical weaknesses that hinder readiness and response. The state faces challenges in aligning strategies with the unique needs of diverse local jurisdictions.

I am sad to report that we have not improved our plans for emergency preparedness since 9/11. We made recommendations that were never implemented. We aren't any better prepared today than we were after 9/11. Many LHDs don't have the financial or personnel resources to be ready.

LHDs rely on state guidance and support for emergency responses.

LHDs rely on, and greatly appreciate, the state guidance and support for emergency responses, including providing new and emerging information, resources, and coordination efforts. Some LHDs feel more prepared than others, but most LHDs feel fairly prepared with respect to general emergency preparedness and understand their deficiencies. However, their degree of confidence was tempered by the fact that it is impossible to predict readiness for something as widespread, unpredictable, and longstanding as what was experienced during COVID-19. Localized, time-limited emergencies are easier to manage than widespread, ongoing emergencies like COVID-19, where everyone was competing for the same resources, prohibiting reliance on others to help. It is important to bring all LHDs up to a preparedness standard because as a senior MDH leader expressed, "*all emergencies start local*," and those first actions taken in a potential emergency can be crucial.

During the pandemic response, the State's acquisition of a contact tracing and contact investigation software system was invaluable, as was their acquiring resources via a contract with NORC for people to support the contract tracing/case identification work. Had MDH not done that, each LHD would have had to try to cobble together a system to perform all the functions with ease, without fail, and to be modified as the situation and rules changed over time. It would have been a disaster.

Deficiencies in the integration of lab processes and infrastructures could/will challenge emergency responses.

Improvements have been made in some areas such as automating data surveillance and reporting systems.

> *We have been looking at ways we can automate the processes. For example, with biosurveillance, we have a weekly report that is now a weekly dashboard upload rather than a person doing it by hand, which is what it used to be. Now that frees up staff so they can use their time and capabilities in better ways that helps us more.*

However, many challenges remain including lack of interoperability of the data systems, lack of integration of lab and surveillance data, lack of modernization with some laboratories still rely on sending reports by fax, timeliness concerns, and repeated unsuccessful transport of specimens reported from certain geographic areas of the state.

> *It is hard for the state and LHDs to monitor what is happening. Demographics are missing, and that is a problem from a health equity standpoint. Not all data is being shared from Labcorp or Quest. You don't know if you are getting all of it—if more exists. You don't know the ZIP code or geographic location. We have bits and pieces*.

Maryland's dependence on federal funding for emergency preparedness and response is an enormous vulnerability.

The Office of Preparedness and Response as well as all infectious disease work at the state level currently function on federal funds, not state funds. These federally funded programs and Maryland's response capability are at risk if the federal source funding is eliminated or reduced.

Staff and expertise shortages contribute to deficiencies in readiness

The loss of staff during and after the COVID-19 pandemic has caused lasting shortages. Staffing and resources at some LHDs are currently deficient to respond effectively and quickly to a public health emergency. For example, one county estimated that if they needed to quickly hire nurses to help with a response, it would take at least six weeks to get them on board. Those new hires are not as familiar with the preparedness trainings as more senior individuals who have left their jobs. Some LHDs had more team members with the skills needed for an emergency, and many emphasized the importance of learning from past experiences to strengthen resilience in the face of future public health crises.

There is variability in available local resources among the LHDs.

Some LHDs are in counties with strong Emergency Operations Centers (EOCs) that serve as resources for them during emergencies, but not all counties have EOCs. Not all counties have a mass distribution site or facilities for a call center. Having an incident command structure/plan in place is important because events unfold rapidly in an emergency. Some LHDs are more prepared for certain emergencies than for other types, most often for those emergencies that might be expected in their area. For example, the counties who are in the plume area for the nuclear power plants located in Southern Maryland region conducted drills regularly for possible emergencies. Additionally, there is seasonal variability in resources and staffing.

Partnerships are an essential component of preparedness and response.

LHDs emphasized the importance of partnerships for community support and to buffer staffing attrition and shortages. Localized knowledge and community connections make partner organizations invaluable in emergency preparedness efforts, though additional resources are needed to enhance their capabilities. However, some community partners have expressed feeling burnt out and overburdened.

Maryland needs to prepare for politicalization of future emergencies and responses.

The politicalization of COVID-19 negatively impacted the ability to respond to the pandemic. Some counties needed law enforcement details assigned to them for protection. Challenges that occurred during the COVID-19 pandemic have led many public health workers, other government or partner agencies, volunteers, and the public to be wary of politicalization in future situations. A statute that protected public health workers was not passed, but is worth exploring again to provide reassurance to public health workers.

Deploying/reassigning personnel from one area of the state to another can be difficult and is a missed opportunity.

Currently, there is no method for temporarily deploying people to other areas within the state during an emergency. This includes deploying state employees, non-state employees, or volunteers from one LHD/region to another region where more support is temporarily needed for an emergency response. This is a missed opportunity to maximize human resources in an emergency. The ability to quickly deploy volunteers or state or county employees would provide a nimble response that could have a large impact on the outcome of an emergency response. The state human resources protocols and regulations do not allow for fast hires in times of emergencies. It is nearly impossible to develop and execute contracts rapidly in emergency situations (see Workforce).

The benefit of a centralized system is the ability to redistribute resources. In Maryland, we have the structure but not the process.

Drills and trainings are essential for readiness but challenging to conduct.

More drills, both tabletop and real, across the state are important to increase preparedness and ensure that all new staff have participated in drill training. Full participation is crucial to the success of the drills; however, it can be hard to get all partners involved on board. For example, when the drills include care providers (particularly in rural areas with limited providers), the care providers must close their offices for a half day or full day to participate. They are hesitant to do that. These participation challenges exist for other necessary partners such as law enforcement, fire departments, and community partners.

Requirements to complete multiple federal trainings are labor-intensive. For example, FEMA grants require one type of training, while CDC grants require a similar type of training. However, the trainings cover very similar material, and it can feel redundant to require employees to complete both.

Communication channels during emergencies need to be clarified, strengthened, and also maintained during non-emergency periods.

There is a need to clarify the emergency chain of command between the Office of the Governor, the Maryland Department of Emergency Management, MDH, and the LHDs. Additionally, clarifying the roles and expectations of the health departments and health care providers and identifying any

overlap would be beneficial to avoid disruptions and miscommunications. Transparent and bi-directional communication about best practices and effective implementation strategies is needed. Building an open and active communication system at all levels is important as is the recognition that effective strategies may vary by situation or location.

During the COVID-19 response, some counties established communications channels/systems that are still in place and ready to be re-activated as needed. There is a need to have dedicated times/forums on an ongoing basis for LHDs to share ideas and brainstorm problems. LHDs could learn from each other on preparations and best strategies before there is an emergency. Some examples of ideas that could be shared:

- Printing out hard copies of plans as well as electronic in case there is a cyber attack
- Mobilizing school health staff when possible as part of an emergency workforce (for LHDs that oversee school health)
- Incorporating mental health and substance use personnel into the deployment groups
- Having a database and contact list, ability to start a hotline, and communication plan ready
- Using small outbreaks as training opportunities (e.g., a seasonal pertussis outbreak)
- Using vehicle emissions sites as drive-through testing centers and for emergency medical distributions
- Having weekly calls with all relevant players and a joint information system to keep everyone informed
- Identifying in non-emergency times any potential lab concerns including access to lab data, lab results, data flow, or data testing issues

Maryland Responds Medical Reserve Corps and other volunteers are underutilized.

Volunteers are an essential component of emergency preparedness and response. Some LHDs' ability to use volunteers during the COVID-19 pandemic effectively offset delays in hiring or transition to contractors or other employees. However, the LHDs were generally split in their utilization of the Maryland Responses Medical Resources Corps (MRC) volunteers, specifically; half said that 0-20% of volunteers at the LHDs during that time were from the MRC, while 41% said it was 81-100%. LHDs in the larger, urban counties were more likely to use MRC volunteers than LHDs in small, rural counties. During the pandemic, volunteers gave the LHDs time to get contractors in place and helped fill the staffing gap. However, word spread about potential issues with the MRC (e.g., that it was not user-friendly or could involve liability), so some did not even bother to try to use the system.

There is untapped potential in Maryland volunteers. Different emergencies have different volunteer demands and anticipating these various needs with a robust supply of volunteers would strengthen Maryland's response readiness. LHDs expressed the importance of having volunteers that are representative of, and from, their communities. Recruitment of volunteers may also be less successful when it comes from the state rather than local sources. Targeted recruitment of mental health professionals as volunteers would ensure that Maryland is prepared to provide psychological first aid and mental health support in emergency situations.

The MRC volunteer program is inconsistently used, owing in part to its cumbersome application process, particularly for recruiting potential volunteers with medical/nursing degrees. These potential volunteers have extra layers of application scrutiny that can delay the onboarding process to the extent that the potential volunteers' application cannot be completed during the emergency. Revising

and simplifying onboarding procedures would maximize its potential to recruit volunteers. Additionally, allowing local branding of the program could help in attracting local volunteers who want to serve their own community ("*local people respond better to local initiatives*"). The impact of the program could also be increased by broadening the roles that MRC volunteers from just emergency response to other public health needs, such as staffing community events (e.g., rabies clinics) or staffing community trainings (e.g., CPR, Narcan, and Stop the Bleed classes).

Opportunities exist to reduce the burden of readiness training.

Ongoing communications within MDH, between MDH and LHDs, and between the LHDs could identify opportunities for collaboration and sharing of ideas on trainings and readiness. As an example, some LHDs have all their staff trained in incident command and practice frequently. One LHD uses flu clinics as practice for emergency response/incident command. These flu clinics act as PODs (points of distribution) where staff are assigned together and always work together at the same place, which helps build smooth functioning teams for the future.

> *We don't have to reinvent the wheel. If the department next door or agency down the street is doing it already, we don't have to redo it.*

Risk assessment and bolstering community resiliency is preparedness.

The primary focus has been on the readiness of the public health infrastructure to respond to emergencies. Not emphasized but noted was also a perspective that preparedness should include risk assessments to identify population vulnerabilities and responsive strategies that could bolster the resilience of particularly vulnerable communities when an emergency arises. This includes anticipating the ability of vulnerable populations to respond to emergency situations, such as being able to evacuate in a hurricane or isolate when exposed to an infectious disease.

Explore additional partners and volunteers: retired military veterans, AmeriCorps, public health, nursing, or medical student volunteer networks.

It is important to have local volunteer networks ready to jump into action. Investment in funded volunteer coordinator positions could improve readiness and efficiency, as there are no resources currently for volunteer coordinators. Engaging with volunteers early and often, such as including them in drills and other "blue sky activities" is also important to ensuring that volunteers are prepared to act during an emergency.

> *I can make the case that we would get our money back [with a volunteer coordinator]. We would be able to leverage so much more out of a volunteer network than it costs. All those volunteers that work with us become part of our communications network.*

Applying Foundational Capabilities to Selected Health Issues

As required by the legislation establishing the Commission on Public Health, in conducting the assessment we explored the impact of the foundational public health capabilities on the state's ability to respond to the particular public health issues of COVID-19, overdoses, and maternal and child mortality.

COVID-19 Response

Opinions differ as to Maryland's preparedness for the next pandemic. Many LHD and MDH staff feel "battle ready," prepared, and drilled for an infectious disease outbreak. Others are very concerned that Maryland is underprepared, especially for a widescale and enduring event.

> *Local health departments think they are ready, but they are not. COVID shook people up, but we have a short memory. We haven't solved the supply chain issues. Many facilities don't have a backup supply of something as simple as gloves – we have gone back to a world where COVID never existed.*

In reviewing Maryland's COVID-19 response to gain insights and assess future readiness, key elements identified included trained staff, strong communications systems, solid partnerships, and equipment infrastructure.

Most agree that post-pandemic workforce attrition has led to a lack of institutional knowledge. Many in this current workforce were not involved in the pandemic response and there is a need for more drills and trainings to bring new workforce up to speed (see Emergency Preparedness and Response).

One of lessons learned from COVID-19 pandemic was a need for a rapid and fluid communication system between all levels of the public health infrastructure. The pandemic positioned everyone in a reactive mode under intense pressure. State leadership's responsiveness and quick issuing of certain decisions was done to protect and be responsive to Marylanders. However, LHDs often felt they were placed in difficult positions because state leadership (such as the Office of the Governor or MDH) publicly announced decisions or plans without giving the LHDs advance warning. The LHDs were then caught off guard, and this contributed to public distrust and public dissatisfaction with public health officials. The response sometimes appeared disorganized, disjointed, and officials appeared to not be on same page. If state leadership had been able to inform the LHDs and other local officials beforehand, unified messaging and plans could have been prepared. Learning from this experience, future emergency planning should include thorough preparation of communications strategies to maintain a unified message and avoid a repeat of these negative public optics. Now that these cracks have been identified during the last pandemic, they can be filled and the communication infrastructure strengthened.

COVID was a frequent topic among public comments. The relevant foundational capabilities implied from public comments include communication, data driven decision making, policy development and legal analysis. There was concern that current strategies and messaging are inadequate. Several expressed the elimination of mask mandates in health care settings as a failure of public health.

...people deserve science-based communication to educate themselves about the risks of COVID.

...my family and I should not have to worry about COVID exposure and infection when we are seeking medical care.

Just as doctors wear gloves when touching patients, they should be wearing masks when sharing the air.

I am writing to plea for more education to schools specifically on Covid, how it transmits (it's airborne), and how to mitigate (clean air and masks). Children are being repeatedly infected with this neurovascular disease in schools and it's shameful. We have the tools, but schools are completely clueless.

During the pandemic, some partnerships and networks were strengthened while others became strained.

Having trust established with communities and key partners before an emergency occurs could make all the difference. It is important to know your community and what political capital you do and don't have.

Having experienced one pandemic has given Maryland an advantage against future pandemics in that many of these systems and operating plans instituted during the COVID-19 response are still in place. For example, during the pandemic, quickly switching to telework was an enormous challenge for many agencies. Today, the public health infrastructure is much better equipped and prepared to smoothly switch to working remotely if necessary because the infrastructure of laptops and remote capabilities have been established and could be rapidly reactivated. Similarly, many communications channels that were established during the pandemic are ready to be re-activated as needed. Some LHDs have kept their mobile units from COVID active by repurposing them for screenings or other outreach. Others have been innovative in finding small ways to keep training and drills in place such as using flu clinics for incident command staff opportunities to practice their training before an emergency, which is very helpful to stay prepared.

We do not know what the next emergency will be, but some needs will inevitably be similar. While Maryland has time, Maryland should fully prepare before the next emergency arises.

Overdoses

The high prevalence of drug overdose in Maryland has concerned government leaders, leaders in public health and health care delivery systems, and our communities at large for years. Significant recent progress has been made in reducing drug overdose deaths in Maryland due to the concerted efforts of many different agencies working with community partners. Sustaining these initiatives will require continued resources to recruit and hire more individuals with expertise in behavioral health. Because overdoses signal a long history of struggles with addiction for many, expanding efforts in substance use prevention and early intervention is required to ultimately reduce drug overdose deaths (see Shifting Gears from Reactive to Proactive Strategies).

Efforts are underway to respond to the overdose crisis.

By executive order, Governor Wes Moore moved the Opioid Operational Command Center (OOCC) into the MDH, renaming it Maryland's Office of Overdose Response to broaden the state's efforts to combat the opioid and drug overdose crisis.

Technological advances have helped disseminate information related to overdose statistics.

The Maryland Overdose Dashboard has facilitated efforts to disseminate information about the trends in overdoses and variation by demographic characteristics, and as such, has illuminated health disparities

Further refinements to our information technology infrastructure are required to track Narcan distribution.

There is a need to track Narcan distribution across systems.

There are serious workforce shortages in the field of addiction medicine and behavioral health.

Similar to other workforce shortages, these shortages are particularly pronounced in the rural areas of the state.

Evidence-based substance use prevention and early intervention strategies need to be expanded.

In the majority of cases, overdoses represent a very late-stage consequence of a long history of substance use involvement. Identifying individuals at earlier stages of substance use involvement requires incorporating standardized assessments into primary care and health centers in educational settings. In that way, substance use involvement can be treated as a health issue. Behavioral health disorders were a frequent issue of concern mentioned in public comments. There were personal stories and pleas for more proactive strategies to deter use including addressing the root causes.

Maternal and Infant Mortality

The robustness of the foundational public health capabilities has a direct bearing on the ability to address maternal and infant mortality and maternal and child health promotion. Because aspects of maternal and child health stretch across the lifespan, any interruptions across the breadth and depth of the public health capabilities can have profound consequences. With their limited available resources and personnel, MDH and LHDs recognize and strive to ensure a continuum of care and to address factors negatively impacting that care. Successful programs exist and could be replicated and/or expanded if funding and resources allowed.

There are policies and programs in Maryland that have improved the health of mothers and infants.

Despite challenges such as underfunding, there are exemplary models to address and promote the health of mothers such as the Babies Born Healthy (BBH) program and the Baltimore City B'more for Healthy Babies (BHB) program. The BBH program is funded by Title V and is a perinatal care coordination program addressing disparities in infant mortality rates in Maryland. The BHB program is an initiative to reduce infant mortality in Baltimore City through programs emphasizing policy change, service improvements, community mobilization, and behavior change. Additionally, the 2022 legislation, Healthy Babies Equity Act, was cited as a key success in expanding coverage for pregnant women to reduce disparities in certain populations.

However, additional resources are needed to expand these underfunded programs, and there is a general sense of a lack of investment in maternal and child health efforts. LHDs are tasked with having to do "what we can for little money." For example, some counties expressed interest in the ability to support doulas and doula services and noted the inability to do so with current funds. Smaller counties are not eligible for some programming due to grants being determined by the size of population served. Funding for program evaluation would illustrate program impact and benefit efforts to secure future funding.

Equity is central to reducing maternal and infant mortality.

Certain populations are disproportionately impacted by maternal and infant mortality. Multiple factors drive this excess burden including lack of access to health care, chronic health conditions, lack of transportation, poverty, food insecurity, structural racism, and mistrust in the health care system due to historical poor and unethical treatment of communities of color. A lack of local and culturally appropriate providers and lack of transportation were identified as two main contributors of lack of access to care. Solutions such as ride share services do not fully solve gaps in public transportation as these are often not eligible for contracting and reimbursement from the LHDs. Social determinants of health significantly impact the ability to address maternal and infant mortality.

Reductions in maternal and infant mortality require building trust with communities and developing community partnerships.

Collaboration with a wide range of partners is key including those from the public health and the health care system, government officials, faith-based, non-profits, substance misuse/abuse networks, policymakers, and trusted community leaders. For example, LHDs often rely on partners to facilitate community needs assessments to identify communities that are experiencing adverse birth outcomes. To be truly impactful with partners, information and data must be communicated in clear and accessible terms and respectfully contextualized with lived experiences.

Linked assessment and data surveillance systems would facilitate prevention and care.

Available data related to maternal and infant mortality is often incomplete. Factors driving maternal and infant mortality occur along the continuum of women's health (adult care, obstetric care and delivery, and post-partum and pediatric care). LHDs expressed a need for standardized screening tools for the social determinants of health that impact maternal outcomes. An integrated data system that included information on social determinants of health, demographics, health care access, prenatal care details such as risk factors and complications, birth outcomes, and postpartum outcomes including mortality data, would improve identification of high-risk populations, hopefully improve maternal health outcomes, and allow for more thorough analysis of the efficacy of upstream policy interventions.

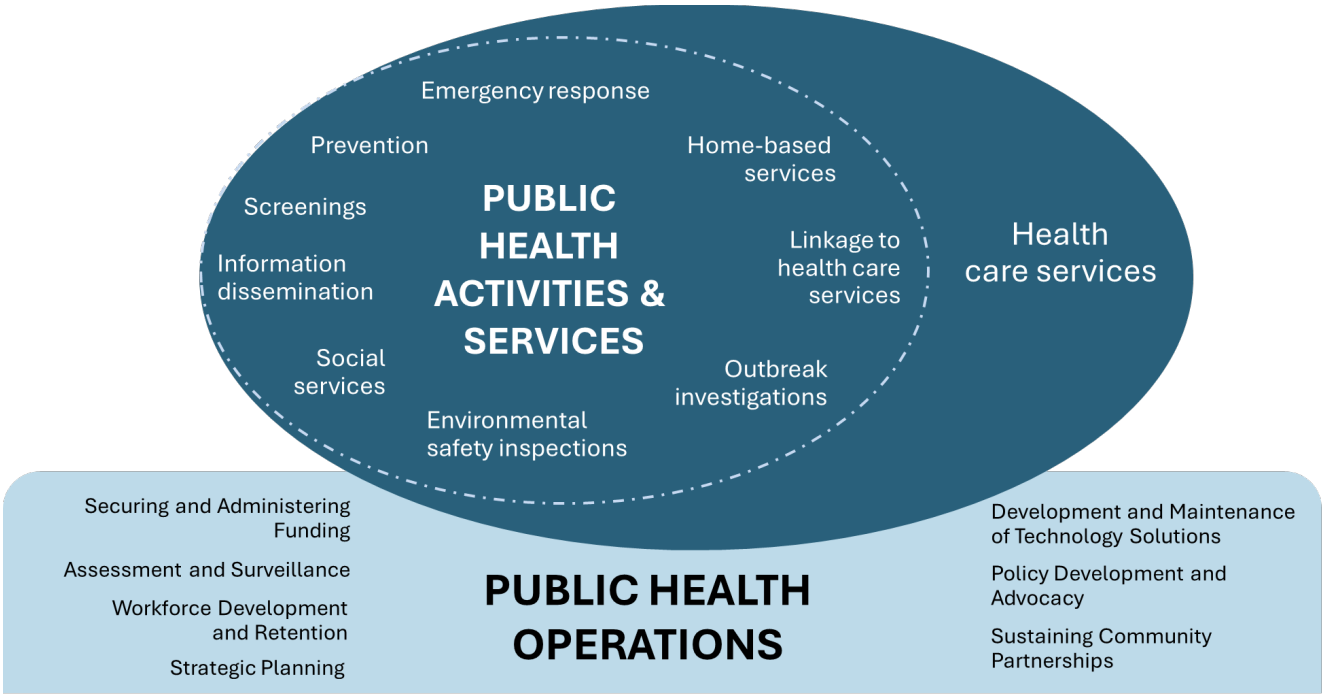
Crosscutting Findings

The Continuum of Public Health Activities in Maryland

Public health in Maryland encompasses a wide range of activities to improve the conditions in which people live, work, and play to maximize the likelihood of healthy behaviors. To function successfully, the public health system must have a strong set of foundational capabilities (see Figure 1, page 7. In Maryland, these operational functions are the joint responsibility of the state and local health departments and are supported by numerous collaborations and partnerships.

These functions include strategic planning, funding, workforce development, assessment and surveillance of community needs, policy development and advocacy, maintaining information technology systems, and developing partnerships. This foundation supports a continuum of public health activities and services in Maryland, ranging from prevention, health education, addressing upstream health inequities in our communities to early intervention services and linking community members to health care services. More specifically, prevention-oriented activities include reducing food insecurity, promoting the availability of healthy food options, educating families and children about nutrition and exercise, and implementing and enforcing environmental health policies and regulations to keep our water, food, and air safe. Early intervention involves addressing the early signs of problems to improve quality of life and to prevent escalation of disease processes.

Figure 5. Public Health in Maryland



Public health touches all aspects of people's lives, and public health work takes place in multiple settings, including our workplaces, businesses, housing development sites, parks and pools, and transportation systems. For example, community health workers interact directly with residents in their houses to offer guidance such as how to prevent falls and reduce asthma triggers. Other community-based efforts investigate outbreaks to reduce the spread of communicable diseases.

At the heart of the public health infrastructure lies the LHDs and MDH, but the infrastructure depends on the various community service providers that provide services and care to constituents. It involves establishing and maintaining communication among the partners. It involves developing a pipeline into the public health workforce, starting as early as K-12 schools, to colleges, and to graduate programs. Outside of the core of the state and local public health departments, public health involves many different types of professionals, from those working to reduce violence in communities, to individuals working in the criminal justice system as they are essential for creating safe and secure communities as well as facilitating entry to the health care system for individuals with addiction and mental health conditions. Public health also relies upon our policymakers who craft regulations and policies to maximize the efficiency and effectiveness of our public health initiatives.

A major component of public health in Maryland is to promote the physical and mental health and well-being of entire communities by providing equitable access to a wide range of preventive and health care services. In this way, collaborations between hospitals, primary care providers, specialty medical care providers, and dentists are essential to the public health infrastructure. Clinical services are routinely provided by LHDs and are considered to be an integral part of public health activities by many HOs.

Successful implementation of these wide-ranging public health practices, policies, and programs depends on consistent funding, smooth administrative operations, a skilled workforce, and data systems to monitor activities and outcomes.

The Bruising and Healing of Public Health: Lessons Learned from a Pandemic

Although pandemics have happened throughout history, the COVID-19 pandemic created unprecedented challenges to our national and global public health infrastructure. Tragically, the pandemic resulted in more than 15,000 deaths in Maryland. The pandemic was a stress test for Maryland—certainly for our emergency response systems, but more broadly for our ability to lead, work collaboratively, and communicate, both internally and externally.

On one hand, dedicated individuals who comprise our public health workforce united and were creative problem-solvers, strengthening old partnerships and forming new ones. Community organizations helped disseminate information, especially to hard-to-reach constituents. Government leaders worked in concert with the private sector to provide space, supplies, logistics support, and ultimately vaccines.

On the other hand, because of the national political polarization around pandemic-related decisions, many in the local public health sphere were caught in the crossfire and were criticized, albeit unfairly, for decisions that were beyond their control. The situation led to public mistrust of health officials in some cases, and overt threats to safety and security of communities.

In the beginning of the pandemic, there appeared to be a high level of enthusiasm for joining the public health workforce. As it persisted, the novelty lost its appeal, and attitudes became more jaded. In short, the widespread and enduring nature of the pandemic had significant impacts on the entire workforce of Maryland, and especially those in public health and those delivering health care services. Burnout was widespread, and the many individuals who left the public health workforce or retired resulted in a significant loss of institutional knowledge.

The pandemic also revealed and exacerbated existing vulnerabilities in our public health infrastructure, including workforce gaps and shortages, administrative hurdles, insufficient funding for maintaining a strong public health infrastructure, and the antiquated nature of many of our data systems. What became clear is that our foundational public health capabilities are not working as optimally as they could to prevent and address not only infectious diseases, but all health conditions, including chronic diseases, cancer, maternal health, mental health disorders, and addiction. Importantly, our ability to close health disparities is hampered by these realities.

The proliferation of misinformation led to increasing public mistrust in science. The pandemic underscored the critical value of local community ambassadors and trusted messengers to gain buy-in with respect to health-related communications. Effectively translating scientific evidence into information and solutions that will be accepted by the community remains a challenge.

As we look back, a somewhat more optimistic view appears. Before the pandemic, the hard work of the public health workforce was somewhat invisible, with few paying close attention. On a national level, the global economic downturn caused by the pandemic highlighted that attention to our ability to respond to public health threats is critically needed, not just for health but also to sustain a healthy economy and a well-functioning society. Health issues affect the wellbeing and productivity of individuals, families, and entire communities. Not preparing for and addressing health issues proactively can lead to costly downstream consequences. As a result of those realizations, five years later, everyone is asking questions about what public health leaders and the workforce do, as well as how their activities impact daily life in so many ways. This shift from public health being ignored to being scrutinized could be considered an opportunity.

The pandemic has caused the nation, and Maryland, to examine the public health system carefully, and work toward improvements that will ensure our capacity to optimize the health of all Marylanders and our readiness for future challenges. Some public health leaders are now engaged in a major "re-branding" of Maryland's public health activities to ensure that the public and elected officials understand what public health is, what it achieves, and its enormous value to the State of Maryland. With time and sufficient resources, Maryland leaders are confident that trust with the community can be rebuilt.

I think that we as a state consider ourselves progressive and proud, but we are not doing so well as it relates to public health for our population. To a significant degree, people don't even know this. People are not even aware of our standing as it relates to public health. There are opportunities now to focus on it and show how making health a priority will result in improved productivity, safety, housing, and a more robust economy.

Funding associated with the pandemic enabled some infrastructure improvements, but as these funding streams cease, the ability to prepare for and address other public challenges is impaired. The time to accelerate our efforts to fund and deliver on our promise as leaders to promote the health of the public has never been more urgent.

The Activities and Value of Public Health: Improving Public Understanding

The COVID-19 pandemic clarified how essential the activities of public health are to the functioning of communities. It is incumbent upon public health leaders to sustain their efforts to demonstrate their relevance. With the proliferation of misinformation, it is more important than ever to be proactive in

defining and explaining public health, including its goals, methods, activities, why we do it, how we do it, and the impact we have. It has never been more critical than now to communicate the value of public health to the broader community. The public, and elected officials, don't know what they don't know. Describing the potential negative outcomes if the public health infrastructure erodes is now part of our professional responsibility. Public mistrust in public health creates significant challenges to communication as well as presents a barrier to accessing appropriate care.

The importance and value of public health is an easier "sell" to some partners than others. For example, connections between education and health are not always obvious. Some recognize that children's mental and physical health can impede their educational success and ability to learn, but others do not see that connection. Buy-in to establish a school-based health center that addresses a child's health from a holistic perspective is unfortunately not universal.

Many public health activities and programs are long-term endeavors that take many years for results to be seen. This delayed impact can create the impression of endeavors as unproductive/ performance failures and also create a disincentive for policymakers to support efforts that will not produce outcomes possibly for many years.

However, legislators must prioritize public health issues, and for them to "buy in," squeaky wheels are necessary. Plain language is necessary. Sensible funding models are necessary. The argument can and should be made to policymakers that without our health, we cannot move forward on any other issue. For example:

Any government should be judged on the health and wellness of its residents and not just the size of its tax base. At the end of the day what matters most to everyone is their health, their family's health, and the community's health, regardless of party affiliation.

Shifting Gears from Reactive to Proactive Strategies

The national health care delivery system continues to be very focused on acute care, procedures, and diagnosis-based interventions. The system is set up to be reactive—a sick-care delivery system— and not as a system that proactively prevents disease. Prevention-oriented strategies are often insufficiently funded. Maryland's unique Total Cost of Care Model, administered by the Maryland Health Services Cost Review Commission, aims to reduce re-admission rates in hospitals by incentivizing them to prevent hospitalizations where they are deemed to be preventable. Maryland also is leading the nation with the creation of the Maryland Primary Care Program. We have an opportunity to lead the nation in designing a robust public health infrastructure that works in concert with hospital care and primary care to prevent disease. In short, many people can be kept out of the hospital for costly services if we do our job right, producing a high return on our investment in public health.

If designed well, our public health infrastructure can address health problems at their earliest stages or prevent them from happening in the first place. Although crisis care is a very critical part of the whole system, it is expensive and should be used appropriately. By the time sick individuals reach the services, their condition is more severe and requires more expensive interventions. Widespread implementation of preventive services, and bolstering access to primary care, can ultimately offset the need for crisis care.

For example, many people who will develop cardiovascular disease in the future are unaware of their risk factors; many with cardiovascular disease may be unaware they have it; and others may not be aware of the services available to help manage it. With widespread opportunities for blood pressure screening, equitable access to primary care, and more intensive health care services to manage identified cardiovascular problems before they get worse, we can reduce the likelihood of escalation of disease.

Currently, because time-limited funding opportunities often drive programmatic activities, service delivery takes precedence more often than activities to prevent chronic diseases or promote health. Moreover, without adequate health care coverage, people will get sicker and cost the system more. The Statewide Integrated Health Improvement Strategy contains more details on the model and its successes in reducing health care costs. There are numerous opportunities for the public health sector to partner with the state in these efforts, with the shared goal of improving population health through community-based preventive strategies.

There are several components to this vision of the ideal proactive public health infrastructure. First, skilled professionals with backgrounds in public health and prevention science are needed in the right places to design and implement systems toward these goals. Second, inter-operable data systems are needed to enable the detection of community-level issues at their earliest stages. For example, with built-in routinized measurement systems in schools, emergency departments, and other health care and social service settings, we can better holistically address health problems. Some models of this exist already in Maryland but need to be evaluated and scaled up for implementation statewide.

Third, proactive and regular communication is an essential component of the public health infrastructure. While public-facing communication is critical, elected officials in Maryland have expressed the need for more proactive communication on the part of the public health workforce. Communication with lawmakers is almost always reactionary after bills are prepared or because of a crisis, but ideally, it should be more regular to ensure that programs, practices, and policies are put in place to ensure that all Marylanders and their families can live a healthy life and thrive.

With proper funding and proper support at every level and in every aspect, we can create a model public health infrastructure. If not remedied, there will continue to be massive negative impacts on the health and wellbeing of Marylanders, and the costs associated with crisis-level care will continue to rise.

The quality of life lived is a public health priority. We need to be concerned about what people are dying from, but we need to be just as concerned about what people are living with. By emphasizing and investing more in preventive public health services and in primary health care, we can identify health issues earlier, intervene and keep people well into the later stages of life. The lives of millions of Marylanders who have existing health issues and others who will face chronic conditions in the future are at stake.

The biggest health problem in Maryland is the lack of access to primary care. Only 60% of Marylanders have identified a primary care practitioner, not just a doctor. If you don't have one, you create all kinds of other problems. Access to primary care is the crisis no one is talking about.

Righting Imbalances: Achieving Health Equity

Maryland has experienced changing population trends over the past several decades, with significant variation across jurisdictions. The state has diverse regional and county-specific health needs and health care capacity, geographic differences (i.e., rural vs. suburban vs. urban), and a rapidly growing variation in the population's sociodemographic characteristics.

While Maryland is generally regarded as having better-than-average health outcomes in aggregate, communities experience varying levels of health attainment which results in disparities that often appear along socioeconomic and racial lines. Health disparities are clear and unquestionable.

Improving health equity involves identifying population groups that are differentially affected by a health problem and then working to provide resources and services to fill those gaps. The MDH's Office of Minority Health and Health Disparities was established through legislation in 2004 with the priority of addressing health equity and reducing disparities in access to care in Maryland. One-quarter of LHDs also employ employee personnel working specifically on diversity, equity, and inclusion initiatives. Health equity work at the state and local levels takes place through both formal and informal mechanisms. Designing and implementing initiatives meant to address health equity depends on the input of the impacted communities. At the other end of the health care continuum, hospitals and their member associations have aimed to embed health equity in all its work since it was highlighted in the Healthy People 2020 disease objectives. Initiatives to improve access for underserved populations such as increasing transportation options, using mobile health units, providing translation services, conducting outreach to rural and migrant populations, integrating cultural competence in service delivery, and ensuring representation of diverse communities in program planning are all important strategies to achieve health equity. To secure lasting improvements in health equity, work must begin upstream. Funding, resources, translation services, and data collection remain a challenge.

Addressing health inequities depends on equitable access to health care services. Gaps in access to specialty care and preventive services are ongoing challenges in Maryland. Expanding unemployment health insurance and reimbursements for individuals on a fixed income could be beneficial. Lack of access to transportation is also a key barrier to health equity. In rural areas of the state, such as western Maryland and the Eastern Shore, transportation is especially limited. Other areas of the state have large populations who do not have personal access to an automobile and must rely on public transportation.

Data are essential to achieving health equity. Community health needs assessments and other data collection methods should not only describe the extent of a problem but also illuminate the social determinants of health and contextual factors that give rise to inequities. If the necessary data are not collected, we lose the ability to assess the problem, determine who is impacted, and measure the impact of an intervention—*if you don't measure the problem, you can't measure the success.* A full picture is impossible without data. When we have more data, we gain the ability to drill down to see details and understand nuances. It helps us develop better policies and interventions. It allows us to identify those who are impacted. It allows for targeted efforts that ensure we are good stewards of funds. It helps us allocate resources both equitably and effectively. Wonderful programs do not always work for wide swaths of the population. For example, if a program distributed materials to enable telehealth in areas where many are without broadband, or to populations who might not be comfortable using telehealth, it will leave many behind and can leave people feeling more isolated.

Areas for Future Exploration

From the assessment teams' perspective and public health experience, below are critical public health topics or ideas that need to be explored further. It is entirely possible that some of these issues would have been raised by participants if time allowed for exploration during the interviews.

Funding Models

This assessment did not gather detailed information about the ways that the Core Funding model was historically established and how it is operating now. Because some expressed a belief that the basis for the Core Funding model was outdated and not responsive to today's needs, further discussion about the funding models used to support local health departments would be beneficial, and if deemed appropriate, new models for Core Funding could be explored. Some expressed a need to explore pooling resources in instances where it might help to sustain programmatic efforts. Further exploration of the variation in funding needs by rural/urban/suburban areas could be beneficial. Multi-year funding models should also be explored.

Cost-Effectiveness of Prevention Strategies

Our assessment revealed a common assumption that it is difficult or nearly impossible to quantify the benefits of prevention. There is a need to expand the knowledge base in this area and communicate the cost-effectiveness of prevention, utilizing the expertise of prevention professionals as well as summarizing the scientific literature regarding the return-on-investment related to prevention. Demonstrating cost-effectiveness and return-on-investment may be particularly important for garnering further support for public health initiatives among elected officials and community partners (e.g., gathering data to show how violence prevention programs saves law enforcement time in the long term).

Evaluation and Performance Measurement

There is an urgent need to learn about the short- and long-term effectiveness of the public health strategies being utilized in Maryland and utilize quality improvement cycling to bolster the effectiveness of current approaches. Investment in personnel and resources for evaluation activities and to strengthen the evaluation capacity of the workforce is needed.

Policy Development and Evaluation

It is well known that policies are highly influential in shaping individual-level behavior. The assessment revealed that MDH and other leaders of state-level entities are involved in the legislative process to establish health-promoting policies and provide counterarguments to policies that might compromise community health. A clearer understanding of if and how LHDs could be more engaged in that process is needed. In Maryland, because the health care profession advocacy organizations are deeply engaged in policy development, their expertise could be utilized more broadly by LHDs to ensure that policies are equitable, effective, and result in better care coordination and services.

Transportation

The lack of transportation options was widely cited as a barrier to accessing health care and other services. Where public transportation exists, it can be inconvenient and unreliable, and many rural communities lack public transportation altogether. Future exploration is needed to thoroughly evaluate how it affects health, how to best address transportation needs of individuals and communities at large, and how to work with state and local transportation authorities to promote public health through safe transportation options.

The Role of the Insurance Industry in Health Care Access, Especially in Relation to Primary Care

The assessment revealed how the public health system interfaces with the insurance industry in several ways. Further discussion with insurance company leaders could shed light on their role in promoting public health, and what can be done specifically to improve access to primary care.

Incentives for Governmental Public Health Careers

It would be beneficial to investigate the opinions, expectations, and priorities of younger individuals who are entering the workforce. Understanding what they value and how to meaningfully incentivize them for governmental public health work could be useful for developing workforce development strategies. Likewise, it is important to explore how we can "market" public health to nurses and other clinical professionals to sustain the workforce.

Data and IT Systems

This assessment did not thoroughly examine the uses and limitations of specific data systems used by the LHDs that were mentioned during interviews and focus groups. Further exploration is needed to understand the EHR proposed by MACHO several years ago. A deep dive is needed into the capabilities of CRISP as a possible foundation for a public health EHR. Given that the lack of a comprehensive EHR was mentioned as a barrier to understanding service delivery in Maryland, and that such a system could be helpful in evaluating outcomes related to public health services, this is a high priority for exploration.

New Opportunities for Communication and Public Engagement

A better understanding of how to utilize technology for enhancing community engagement is needed. For example, it is possible to pair traditional engagement strategies with digital engagement. Podcasts might be a viable option for sharing health information with the public. Moreover, tackling misinformation will need intentional strategies. For example, LHDs might consider developing clear counterpoints for comments that contain misinformation posted on social media or news channels. A better understanding of the contributing factors (e.g., fear and anxiety) to believing misinformation would be useful.

Emergency Preparedness

During the assessment interviews, several issues regarding existing emergency response processes were raised that deserve further exploration. These include whether laboratory networks are fully optimized for an emergency response and whether Maryland First Radio is operating across the state and who is responsible for paying for this system. Additionally, Maryland should consider how the large population of military veterans and retired military personnel could be a potential resource.

Similarly, additional or non-traditional partners might be engaged for emergency preparedness and response. For example, public health, nursing, or medical students could be utilized as an additional volunteer network. Academic partners with funding to work on bioterrorism or emergency response management or that have specialized statistical skills (e.g., predictive modeling of pandemic transmission) could be valuable partners. Lastly, partnerships with volunteer programs such as AmeriCorps and other organizations involved in disaster relief could be explored.

Local Boards of Health and Local Health Improvement Coalitions

This assessment did not completely explore the ways in which local BOHs, Local Health Improvement Coalitions, and the state Prevention Coordinators are underutilized as a resource to LHDs. Further clarification is needed to understand how to leverage their expertise.

Partnerships with Faith-based Communities

Some of our faith-based community partners feel burnt out after years of partnering with public health organizations and struggle when public health messaging does not align with the views of the community members. Furthermore, some are facing declining membership. These faith-based partners therefore feel limited in their ability to continue these partnerships. Gathering information from faith-based community leaders to explore how best to engage them and their constituents in our shared goals to improve access to care and receive public health services is needed.

Partnerships with Academic Institutions

Mechanisms to strengthen and expand academic partnerships should be explored, starting with creating an Academic Leaders Forum to discuss shared goals and upcoming educational offerings. Academic institutions should consider leveraging the expertise of health-related associations and their members to create experiential opportunities for students and research-to-practice opportunities for faculty. Existing successful programs, such as the Hilltop Institute at University of Maryland, Baltimore County and the Maryland Area Health Education Centers supported by the University of Maryland School of Medicine, can serve as models for future partnerships.

There are at least five possible areas for expansion that academic institutions could consider as a way of bolstering the skillset of individuals in the public health workforce. First, the next generation of public health professionals need to know how to apply artificial intelligence to analyze and visualize data for the purpose of improving public practices. For example, it might be possible to develop simulation models to understand exact needs for different types of outbreaks or emergencies. Second, academic programs should be developed that specifically train individuals in prevention science and to develop cost-effectiveness models for prevention strategies. Third, because of known connections between oral health and chronic diseases, schools of public health should partner more closely with dental associations and schools of dentistry. Fourth, academic partners could assist in evaluating existing leadership/ management training and further such training as needed. Finally, and particularly relevant to Maryland, academic programs should incorporate more courses and experiential opportunities to understand rural health and the public health challenges facing rural communities.

Accreditation

PHAB accreditation is useful for ensuring that LHDs fulfill their responsibilities for foundational health capabilities. Currently, not all LHDs are accredited. Decisions not to pursue accreditation were largely attributed to lacking the necessary resources or not feeling that the benefits of accreditation were worth the inputs required (e.g., staff time). It could be valuable to explore the role that MDH could play in facilitating LHD accreditation.

Appendix 1: Supplementary Information on Qualitative Interviews

Entities Interviewed

Local Health Departments
Allegany County Health Department
Anne Arundel County Health Department
Baltimore City Health Department
Baltimore County Department of Health
Calvert County Health Department
Caroline County Health Department
Carroll County Health Department
Cecil County Health Department
Charles County Department of Health
Dorchester County Health Department
Frederick County Health Department
Garrett County Health Department
Harford County Health Department
Howard County Health Department
Kent County Health Department
Montgomery County Department of Health and Human Services
Prince George's County Health Department
Queen Anne's County Health Department
Somerset County Health Department
St. Mary's County Health Department
Talbot County Health Department
Washington County Health Department
Wicomico County Health Department
Worcester County Health Department

Advocacy Organization & Healthcare Associations
Chesapeake Regional Information System for our Patients (CRISP)
Maryland Assembly on School-based Health Care
Maryland Association of Counties
Maryland Association of County Health Officers
Maryland Dental Action Coalition
Maryland Health Care Commission
Maryland Hospital Association
Maryland Nurses Association
Maryland Public Health Association
Maryland Rural Health Association
Maryland State Dental Association
Maryland State Medical Society (MedChi)
Mid-Atlantic Association of Community Health Centers
University of Maryland Medical System

Maryland Department of Health
Cancer and Chronic Disease Bureau
Center for Injury and Violence Prevention
Healthcare Financing and Medicaid
Maryland Community Health Resources Commission
Maryland Primary Care Program Office
Maryland Responds Medical Reserve Corps Network
Maternal and Child Health Bureau
Office of Contract Management and Procurement
Office of Enterprise Technology
Office of Human Resources
Office of Minority Health and Health Disparities
Office of Population Health Improvement
Office of Preparedness and Response
Office of Prevention and Health Promotion
Primary Behavioral Health & Early Intervention
Public Health Services Administration
School Health

State Department/Agencies
Department of Aging
Department of Agriculture
Department of Budget and Management
Department of Disabilities
Department of Education
Department of General Services
Department of Labor
Department of Occupational Safety and Health
Department of the Environment

Elected Officials & Local Government Leadership
Anne Arundel County
Baltimore County
Calvert County
Cecil County
Frederick County
Howard County
Prince George's County

Interview Questions

Qualitative interview guides were prepared for each category of respondents (LHD leadership, MDH leadership, leadership from other state-level departments/agencies, leadership from advocacy organizations and health care associations, and elected officials/local government leadership). The questions were meant to resemble a conversation rather than a survey, while being organized to still collect relevant and actionable information. Not all questions were asked in each interview, depending on the interviewee's role and the direction the interview took. The interviews focused on questions about Governance and Structure, Workforce, Partnerships, Funding,

Data and IT Infrastructure, Communication, and Vision for the Future, with questions on health equity embedded throughout. Example questions for each category are provided below by respondent type.

Local Health Department Leadership

Governance and Structure	Workforce
• Can you please describe how your local health department is organized to fulfill the foundational public health capabilities? • The CDC categorizes Maryland's public health structure as a "shared model," with support and responsibilities shared between state and local governments. Maryland's system of public health governance has resulted in variation in the size, scope, and budget of local health departments, despite sharing some consistent core programs. In your opinion, how is this model working? • What aspects of your health department's governance structure and norms contribute to the success of your department?	• How would you describe the ability of your health department to recruit, develop, and retain the workforce needed to execute your health department's foundational capabilities? • What gaps presently exist in your workforce in terms of delivering the foundational public health services? How are you working to fill those gaps? • What sources or pipeline programs are most useful for candidate recruitment? • What experiences have you had with academic institutions in Maryland in terms of developing a pipeline for the workforce? • How does your health department work to build an equitable workforce?
Partnerships	**Funding**
• Can you describe some key partnerships that exist between your health department and other local agencies and community-based groups? What about partnerships with MDH or other state-level entities? • How do partnerships play a role in equitable access to public health services? • What do you think others can learn from your experiences partnering with entities?	• To what extent are you able to fund both your department's work in the foundational public health areas as well as other high priority initiatives? • Could you give your impression of the equity in the distribution of health funding for communities, either in general, or specifically at your LHD? • What administrative impediments exist regarding funding high priority initiatives or programs?
Data and IT Infrastructure	**Communication**
• What are some specific areas of assessment and surveillance needing improvement? • How do you use data to inform your decisions and planning? • How does data use and the data infrastructure impact health equity, for better or for worse? • What aspects of the existing data infrastructure promote your ability to operate efficiently?	• What are some of the "lessons learned" in terms of the best ways to engage with the public (e.g., share information and obtain meaningful input)? • What strategies do you use to maintain internal communications so that all the relevant groups within your health department are aware of what they need to know? • How do you embed efforts towards achieving health equity into your communications strategies?
Readiness	**Vision for the Future**
• To what degree do you feel your health department is ready to execute an emergency response? • Could you speak to how health equity is considered in your department's emergency response preparations? • In your opinion, what were the key "lessons learned" in terms of what went well and what did not during the COVID-19 experience? • What are some of the advantages of the current system in terms of readiness and emergency preparedness? What about disadvantages?	• Finally, can you tell me about your vision for the future for your health department? • What recommendations do you have—or what changes would you like to see—to improve your health department's ability to implement foundational public health services? • What about recommendations that extend beyond your locality—what changes would you like to see to improve Maryland's ability to promote and protect the health of the public?

Maryland Department of Health Leadership

Governance and Structure	Workforce
• Can you please describe how MDH and/or your [office/agency/administration] within MDH is organized to fulfill the referenced foundational capabilities? • In what ways, if any, does the existing governance structure and norms of your [office/agency/administration] impede your ability to implement foundational capabilities? • Are there ways in which your [office's/agency's administration's] governance structure and norms support or impede advancing health equity?	• How would you describe MDH's ability to recruit, develop, and retain the workforce needed to execute its core activities/programs/foundational capabilities? • How does MDH work to build an equitable workforce? • What sources and/or pipeline programs are most used for candidate recruitment? • In what ways do you think partnerships between academic institutions and governmental public health entities can be improved and sustained?
Partnerships	**Funding**
• Can you describe some key partnerships that exist between MDH and/or your [office/administration/agency] and other state-level entities or organizations? • What about local health departments? • What about national agencies, such as the CDC? • How do these partnerships support your efforts in covering the foundational public health areas? • In what ways do you see partnerships as important to achieving health equity? How do partnerships play a role in equitable access to public health services? • What have been some of the outcomes of these partnerships, either positive or negative?	• To what extent are you able to fund both your work in the foundational public health areas and high priority initiatives? • What is your impression of the equity in the distribution of health funding for communities? • To what extent are external grants used to fund your department's activities? What is your capacity to apply for grants? • What is your impression of any joint decision-making between MDH and MACHO regarding federal grant distribution and the development of the Core Funding formula? • What administrative impediments exist regarding funding high priority initiatives or programs?
Data and IT Infrastructure	**Communication**
• What aspects of the existing data/IT infrastructure promote your ability to operate efficiently? • What are some specific areas of assessment and surveillance needing improvement? • How does data use and the data infrastructure impact health equity, for better or for worse? • How would you describe the data-to-action pipeline in the work of your [office/administration/agency]?	• What strategies do you use to maintain internal communications so that all relevant groups within MDH are aware of what they need to know about the work of your [office/agency/administration]? • How do you embed efforts towards achieving health equity into your communications strategies? • How would you describe communication between MDH and the local health departments?
Readiness	**Vision for the Future**
• To what degree do you feel MDH and/or your department is ready to execute an emergency response? • Could you speak to how health equity is considered in your emergency response preparations? • What are some of the advantages and disadvantages of the current system in terms of readiness and emergency preparedness?	• Finally, can you tell me about your vision for the future for MDH and your [office/agency]? • What changes would you like to see to improve Maryland's ability to fully implement the foundational public health services? • What do you consider to be most important moving forward in efforts to achieve health equity?

Head of State Department/Agency

Perspectives on Public Health in Maryland	Governance and Structure
• Do you have any general perspectives you'd like to share on the public health infrastructure in Maryland—any impressions of what we do well, or where there's room for improvement? • What do you see as the role of governmental public health agencies, and how is that similar or different from your organization's role in public health?	• What connection do you see between the mission of your department and the work of the public health agencies in Maryland? • What are your current priority efforts related to public health for your department? • What is the nature of interactions regarding public health issues between your department's leadership team and those of MDH?
Partnerships	**Communication**
• Can you give an example of a recent partnership with MDH? • What about a similar initiative with a local health department that you can describe? • Are there joint efforts between your system and public health agencies which you would like to expand in the future? • In what ways do you see partnerships as important to achieving health equity?	• Can you provide some examples of public health topic areas that you believe are important to communicate about to your priority populations? • What do you see as the most effective methods that your agency uses to communicate with community members about those issues? • Could you talk about how health equity is considered in your communications?
Funding	**Data and IT Infrastructure**
• Could you give your impression of how and how much health equity is considered in your department's funding? Could you give your impression of the equity in the distribution of health funding for communities? • How do you think funding could be allocated to better address the public health related needs of the Marylanders served by your department?	• What issues related to data infrastructure and information technology are important to consider for achieving our goal of improving the health of the population in Maryland?
Vision for the Future	
• Finally, can you tell me about your vision for the future of your department as it relates to meeting the foundational public health capabilities? • What changes would you like to see, if any, to improve Maryland's ability to promote and protect the health of the public? • What efforts do you consider to be most important in moving forward to achieve health equity?	

Advocacy Organization/Health Care Association Leadership

Understanding Priority Areas	Communication
• Can you describe your organization's activities related to public health? • Can you provide some examples of public health priority areas that you believe are important?	• What methods do you use to communicate with community members about those issues? • How would you describe the communications between governmental public health entities and your organization?
Partnerships	**Data and IT Infrastructure**
• How do you see access to and linkage with care/clinical services currently working? Are there ways this could be best established or improved? • In what ways do you see partnerships as important to achieving health equity? • What sorts of partnerships, if any, exist between your organization and MDH? • What about with local health departments or public health-oriented community groups?	• What issues related to the public health data infrastructure and information technology are important for us to consider? • How would you describe the data sharing between public health agencies and clinical providers? • How has your organization used CRISP?
Funding	**Workforce**
• How do you think funding could be allocated to better address the foundational public health services for Marylanders?	• What are your thoughts about the public health workforce in Maryland? • What are some suggestions for improving the capabilities of the workforce?
Vision for the Future	
• Can you describe some areas for improvement related to the public health system in Maryland? • How do you think progress could be made in those areas? • State legislative initiatives and local policies can influence public health, in good and not so good ways. Can you tell me about health policies that are critically important moving forward to help your organization to achieve its goals? • What do you consider to be most important moving forward in efforts to achieve health equity?	

Elected Officials/Local Government Leadership

Understanding of Public Health	Workforce, Data and IT, Funding
• How would you describe your knowledge of public health prior to you assuming your current role? • How has your understanding and familiarity with public health evolved during your time as a [position]? What was influential in shaping your understanding? • Where would you prioritize public health among other issues?	• Are you aware of gaps in the public health workforce in your jurisdiction? If yes: What strategies might help fill these gaps? If no: How might we help legislators understand the critical importance of the public health workforce? • What issues related to data or IT within the public health infrastructure have come to your attention? • How are funding allocation decisions typically made regarding public health issues?
Serving Constituent Needs	**Governance and Structure**
• How do you learn about the health needs facing your constituents? • Are you familiar with any recent community health assessments and or community health improvement plans? What recommendations did those assessments/plans have for your jurisdiction? • Have efforts to achieve health equity for your constituents come to your attention? In what ways? • What are your thoughts on how public health information is communicated with the public? • We understand that you have to balance multiple priorities when making decisions. We are curious if requests made to you to enact public health initiatives might sometimes seem unrealistic or not feasible. If so, how can we make our public health recommendations more actionable, especially when competing with other areas for funding and attention?	• The CDC categorizes Maryland's public health structure as a "shared model," with support and responsibilities shared between state and local governments. This has resulted in variation in the size, scope, and budget of local health departments, despite sharing some consistent core programs. Do you think there should be more consistency between local health departments, or is variation between jurisdictions useful? • What are your views, if any, regarding regionalization of public health resources? • MDH is a "super agency" with several major components, including Public Health, Developmental Disabilities, Health Care Financing/Medicaid, and Behavioral Health in the same agency under one Secretary. Most other states administer these functions as multiple agencies. What do you think are the advantages and disadvantages of how public health is organized at the state level in Maryland?
Vision for the Future	
• What changes would you like to see, if any, to improve Maryland's ability to promote and protect the health of the public? • How do you think progress could be made in those areas? What does the path forward look like? • What do you consider to be most important for moving forward in efforts to achieve health equity?	

Appendix 2: Supplementary Information on Focus Groups

Focus Group Facilitator's Guide

A Facilitator's Guide was prepared for each of the 12 virtual focus groups. The following questions are examples of the questions from those guides and do not encompass all questions or the ways in which questions were adapted during the session to meet the needs of the discussion and the group present. The central questions, while not asked directly to participants, are meant to capture the focus of that focus group.

Focus Group Questions

Academic Partners

Central Questions	Example Discussion Questions
• How do/can academic partners best support and partner with Maryland's governmental public health? • For academic partners who are partnering, or have attempted partnering with local or state health departments, what has worked well, what can be improved?	• What mechanisms exist today for sharing information about educational offerings among the academic partners in Maryland? With governmental public health? • What skillsets do you feel are essential for graduates of your programs to have to manage contemporary public health challenges? • Please describe any programs, collaborations, or arrangements between your academic institution and state or local governmental public health departments in Maryland. What has worked well? What can be improved? • What have been some of the major challenges in promoting governmental public health practice work as a career in public health to your students? • What are some ideas to increase the pipeline of undergraduate or graduate public health students into the local or state public health workforce? • To what extent do your academic institutions offer continuing education opportunities for people established in the public health workforce?

Assessment and Surveillance

Central Questions	Example Discussion Questions
• What are the strengths and weaknesses of Maryland's current assessment and surveillance activities related to public health? • How are assessment and surveillance outcomes used to inform local health department planning and program implementation? • How modern and coordinated are the necessary data systems to fulfill this foundational capability? • What system level changes are needed to strengthen Maryland's current assessment and surveillance capabilities?	• Can you share one of your top challenges related to assessment and surveillance? *Referencing a challenge that appears more than once in the chat:* Can anyone share more about how that challenge impacts your work and what improvements you would like to see? • How could timely health status data and trends be better highlighted and communicated to the public, elected officials, community partners?/ How can the data be better utilized to influence policy makers? • How are you addressing challenges in terms of health equity? How do you ensure that the strategies are culturally appropriate for the priority populations? • What are the highest priority recommendations for improving data infrastructure capabilities in Maryland? • What suggestions do you have to ensure that assessment and surveillance data resources/systems are accessible to all local health departments to act and respond in real time? • What could be improved to reduce barriers or challenges you experience related to pulling data or tracking data both internally and to external partners?

Behavioral Health

Central Questions	Example Discussion Questions
• How do the foundational health capabilities in Maryland support the continuum of substance use prevention, early intervention, addiction treatment, and overdose prevention? • How do those capabilities support wellness promotion, mental health screening, early intervention for mental health conditions, and comprehensive care for individuals with mental health disorders?	• How would you describe your agency's balance of activities related to prevention, early intervention, addiction treatment, chronic care management? And is that balance working? • How are you addressing challenges in terms of health equity? How do you ensure that the strategies are culturally appropriate for the priority populations? • What appears to be working well related to how our public health agencies and local behavioral health authorities engage behavioral health care system partners? What could be improved? • In terms of your workforce, are there system changes that if made could strengthen your ability to recruit, develop, and retain your workforce? • In what ways do funding challenges impact your ability to deliver behavioral health services?

Chronic Disease Prevention

Central Question	Example Discussion Questions
• How do the foundational public health capabilities at the local level affect our ability to address the risk factors that give rise to chronic diseases? • *Note: Chronic diseases of interest include diabetes, cardiovascular disease, cancer, dental diseases, including oral cancers, cognitive decline, and chronic mental health conditions.*	• Thinking back over the past ten years, are the chronic disease prevention strategies that were most successful in the past still effective? If not, what changes are needed for you to be effective in addressing chronic disease? • Chronic disease prevention challenges could take place in surveillance and data collection, communications, partner collaborations, and programs and policies. In which of these areas have you made the most or least progress? • What barriers do you face in your work with respect to addressing health equity as it relates to chronic disease prevention? • How can the utilization of EHRs in Maryland, or your county, be optimized for chronic disease prevention and management? • Are there any specific programs related to chronic disease prevention or management that are underfunded relative to their importance?

Communications

Central Questions	Example Discussion Questions
• How effectively are clear communications functioning as a foundational public health capability? • What system level changes are needed to strengthen Maryland's current communications capabilities?	• On a scale of 1 to 10 with 1 being the least trained and 10 being the most trained, how would you rate the public health workforce's ability to communicate effectively with the public? Why did you rate it as such? • In a public health emergency, communications with local, state, and national agencies, as well the public, are crucial. What are your perspectives on what's needed to strengthen the current communication systems? • How can the relationship between MDH and local jurisdictions, or between local jurisdictions, be strengthened to improve health-related communication efforts? • What strides have been made in closing the digital divide in Maryland or in reducing any impact of the digital divide? • In your experience, what are the main barriers to effective communication with diverse populations about key public health challenges (e.g., COVID-19, overdoses, maternal and infant mortality, mental health, etc.)?

Communicable Diseases

Central Questions	Example Discussion Questions
• How do the foundational public health capabilities at the local level affect our ability to monitor, respond to, and prevent communicable diseases? • *Note: Communicable diseases of interest include HIV, COVID-19, flu, Mpox, and STIs.*	• Where are the strengths and weaknesses of the current data systems in terms of timeliness, accuracy, and completeness of surveillance and case reporting? • How can the utilization of EHRs in Maryland, or your county, be optimized for chronic disease prevention and management? • Where are the biggest workforce issues or gaps you see in your work? How can those issues or gaps be improved? • How could the timeliness of communications be improved between health entities as it relates to prevention and management of infectious diseases? • Thinking of health equity and communicable disease, which social drivers of health most impact your efforts to address communicable diseases? • What do you need to feel prepared for future infectious disease events such as clusters or outbreaks?

Environmental Health

Central Questions	Example Discussion Questions
• How do the foundational public health capabilities at the local level affect our ability to follow regulations and monitor environmental conditions to protect the public from environmental concerns?	• Thinking across environmental health (e.g., sewage disposal, vector-borne diseases, food protection, etc.), which areas do you feel are strongest, and which are the weakest? • What is your organization's biggest challenge in regulating and enforcing state and local environmental health regulations, laws, and ordinances? • Let's discuss the shared governance between MDH, MDE, local health departments, and other local entities. How could this shared oversight better support your environmental health efforts? • What is needed to improve the pipeline of environmental health specialists? Are there any other workforce gaps or shortages? • How are you addressing challenges in environmental justice and health equity?

Human Resources

Central Questions	Example Discussion Questions
• What is needed to optimize the processes to recruit, develop, promote, and retain a diverse public health workforce?	• Thinking of the personnel systems you utilize for hiring, both the county and state systems, are there aspects of these systems that could be improved? • What can be done to strengthen the pipeline from academic institutions into governmental public health? • How are you addressing challenges in terms of having staff that are culturally appropriate or from the local or priority populations? • Given that many staff are not formally trained in public health, what approaches do you use to develop those public health competencies? • What improvements could be made to reduce turnover among employees in the governmental public health workforce? • In terms of emergency preparedness, do you have the tools to rapidly onboard staff? What system-level changes would you like to see to support that effort?

Injury and Violence Prevention

Central Questions	Example Discussion Questions
• How do the foundational public health capabilities at the local level affect our ability to address the risk factors that give rise to injury and violence?	• Where do you find the biggest challenges in addressing violence and injury: in surveillance and monitoring, in identifying risk and protective factors, in developing and evaluating strategies, or in implementing and adopting strategies? • What changes, if any, to the current reporting and surveillance systems for injuries and violence would be most beneficial for your work to address IVP? • How would you describe your capacity to address social determinants of health as it relates to injury and violence prevention? • Could you speak a bit about your partnership with law enforcement to prevent violence and injury? How could that partnership be improved? • What are some high impact system changes related to the area of injury and violence prevention that would improve your ability to carry out your work?

Maternal and Child Health

Central Questions	Example Discussion Questions
• How do the foundational public health capabilities at the local level affect our ability to address maternal and child health promotion and avoid maternal and infant mortality?	• Thinking of Maryland's system for addressing maternal and child health, which areas are most challenging for you in terms of your population's needs and/or health outcomes and in what ways could they be strengthened? • Are there any specific health programs or initiatives that you feel are underfunded relative to their importance? What challenges arise due to that underfunding? • What practices, policies or legislation related to maternal and child health promotion would you like to see implemented? • What improvements, if any, would you like to see in the data systems you use for tracking metrics related to maternal and child health in your county? • How would you describe your capacity to address social determinants of health that impact maternal and child health? • What other partnerships don't exist now but would be beneficial for your agency to use its public health capabilities in the area of maternal and child health?

Public Health Emergency Response and Preparedness

Central Questions	Example Discussion Questions
• How do the foundational public health capabilities at the state and local levels affect our readiness to respond to human-caused and natural disasters and emerging pandemics? • What was learned from the COVID-19 experience, and what changes have been/should be made to our preparedness and readiness as a result of that experience?	• Depending on the magnitude of the emergency, federal, state, and local roles may vary. To get us started let's focus on the state response and think about breaking down emergency response into the following areas: prevention, preparedness, response, and restoration. Which areas do you feel are strongest for Maryland, and which are the weakest? • What is needed to improve the adequacy of current surveillance and data systems in Maryland to identify early warning signs? • What is needed to ensure a sufficient number of individuals are available to be recruited in times of an emergency to assist in the response? • How are you addressing challenges in terms of health equity? How do you ensure that the strategies are culturally appropriate for the priority populations? • Thinking of our discussion today, in what ways could funding be better allocated to create a more responsive system?

Public Health Nursing

Central Questions	Example Discussion Questions
• What are the main challenges facing the nursing workforce as it relates to the foundational public health capabilities in Maryland?	• What are some of the top challenges that come to mind for public health agency nurses as it relates to workforce recruitment, retention, and promotion? What changes could be made at the local or state level to address those challenges? • Thinking of the barriers to career advancement for nurses within your local health department, what system level changes could be implemented to ensure all public health nurses have equitable opportunities for career progression? • Thinking about the role that public health nurses play in public health emergency response, what changes would be most beneficial to support that role? • In what ways do you collaborate with other local, regional, or state entities (e.g., schools, other healthcare providers) to improve public health outcomes? How can those collaborations or partnerships be strengthened? • How would you rate the current data and IT systems in place for managing and analyzing public health nursing data? Thinking of patient records, case management, program evaluation. Rating that from a 1 to a 10, with 10 being the most robust. • Thinking of health equity, do you have the culturally appropriate strategies and tools you need to ensure that you are meeting the needs of priority populations?

Appendix 3: Timeline of Assessment Activities

	2024									2025				
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	Apr.	May
Public Comments														
Public comments collected during regional listening sessions														
Online comment portal open														
Voice messaging system open														
Interviews														
Developed interview guide														
Identified participants														
Conducted interviews														
Focus Groups														
Developed focus group guide														
Identified focus group participants														
Conducted focus groups														
Organizational Survey														
Developed survey questions														
Collected LHD responses														
Collected MDH responses														
Analysis and Integration														
Ongoing review of key themes from interviews and focus groups														
Integration of public comments														
Presentation of preliminary findings to Commission co-chairs and workgroup co-chairs for feedback														
Integration of organizational survey findings														
Presentation of findings to the Commission														
Preparation of final findings report														

Appendix 4: Supplementary Findings from the Organizational Surveys

LHD Organizational Structure

Age of Strategic Plan	
Year Strategic Plan Developed	**% of LHDs**
2024	29%
2023	4%
2022	13%
2021	4%
2020	4%
2019 or earlier	17%
N/A – does not have a strategic plan	29%

Conducting Community Health Needs Assessments	
Responsibility for CHNA	**% of LHDs**
Collaboration between LHD and local hospital	63%
LHD and local hospital each complete own CHNA	17%
CHNA conducted by LHD only	8%
CHNA conducted by local hospital only	8%
Other	4%

Workforce

Count of Current Vacancies at the LHDs			
Type of Position	**Range**	**Mean**	**Median**
Full-time	1 – 95	18.4	9.0
Part-time	0 – 50	6.6	1.5
Contractual	0 – 81	8.4	2.0
Seasonal	0 – 4	0.5	0.0

Utilization of Workforce Development/Training Resources by LHDs	
Workforce Development/Training Resources	**% of LHDs Utilizing Resource**
Training or professional development through national associations	88%
Maryland Department of Health Training Services Division Programming	79%
County or local professional development programs	67%
TRAIN Learning Network/TRAIN Maryland	58%
Contractors or vendors	58%
Mid-Atlantic Regional Public Health Training Center (MAR-PHTC)	46%
Maryland Department of Health Certificate Program with Bowie State University	17%

Race and Ethnicity of MDH Employees			
Race/Ethnicity	**Management**	**Professional employees**	**Skilled employees**
American Indian or Alaska Native (non-Hispanic)	0.0%	<1%	<1%
Asian (non-Hispanic)	7.7%	5.9%	4.0%
Black (non-Hispanic)	27.8%	27.61%	50.5%
Hispanic	2.7%	1.98%	3.4%
Multiracial (non-Hispanic)	1.4%	1.2%	1.0%
Pacific Islander (non-Hispanic)	<1%	<1%	<1%
White (non-Hispanic)	59.9%	62.9%	40.3%

Funding among LHDs

Environmental Health Fee Schedule	
Year Fee Schedule Last Updated	**% of LHDs**
2023-2024	30%
2021-2022	0%
2019-2020	0%
2017-2018	9%
2015-2016	4%
2013-2014	4%
2012 or earlier	52%
Updated Regularly Per Local Policy	**% of LHDs**
Yes	22%
No	78%
Updates To Fee Schedule Based On*	**% of LHDs**
What is being charged in neighboring jurisdictions	75%
Cost of providing service	75%
Inflation	33%

**LHDs were allowed to select more than one answer; responses are not mutually exclusive.*

Data and IT Infrastructure among LHDs

Automation of Reporting Processes			
Reporting Process	**% with fully automated process**	**% with partially automated process**	**% without any automation in process**
Electronic lab reporting	29%	42%	29%
Electronic case reporting	21%	42%	38%
Web-based case reporting	17%	29%	50%
Syndromic surveillance reporting	21%	38%	38%

Responsibility for Technical Management of EHR Platforms	
Responsible Party*	**% of LHDs**
Single staff member within the health department	4%
Team of people within the health department	88%
County/city IT department outside the health department	21%
Outside consultant/vendor	83%
Other	17%

**LHDs were allowed to select more than one answer; responses are not mutually exclusive.*

Public Availability of Digital Environmental Health Records	
Record Type	**% of LHDs**
Food safety permits/inspection reports	25%
Recreational water (pool, beach) monitoring reports	17%
Wastewater management (septic permits, land plats)	13%
Drinking water/well permits	4%
Campground/mobile home park permits/inspection reports	0%

AI Policies Governing Health Department Work	
Policy	**% of LHDs**
We have a health department-specific policy	0%
We have a county policy that applies to our health department	29%
We use the state policy that applies to our health department	71%

Communications and Public Engagement

Languages In Which LHD Currently Provides Resources	
Language	**% of LHDs**
Spanish	100%
Chinese (Mandarin/Cantonese)	25%
Haitian Creole	21%
Korean	13%
French	8%
Vietnamese	8%
American Sign Language	4%
Dinka	4%
Nuer	4%
Tagalog	4%

Frequency of Communication About Seasonal Illnesses	
COVID-19 Updates	**% of LHDs**
Weekly	38%
Biweekly	29%
Monthly	21%
Less than monthly/never	13%
Flu Updates	**% of LHDs**
Weekly	46%
Biweekly	25%
Monthly	17%
Less than monthly/never	13%

Appendix 5: Supplementary Findings from the 2022 NACCHO Profile Study

Local Boards of Health

All 20 LHDs had a local board of health (LBOH). Seventy percent described their LBOH as "governing," while the other 30% described their LBOH as "advisory."

Functions of Governance Utilized by LBOHs on a Continuous Basis		
	n	%
Legal authority function	13	65%
Oversight function	12	60%
Policy development function	12	60%
Partner engagement	10	50%
Resource stewardship function	9	45%
Continuous improvement function	6	30%
None of the above	1	5%

**Functions of governance as identified by NALBOH.*

Health Officers' Educational Background

Half of the health officers held a doctoral degree, while 35% held a Masters degree and 10% held a Bachelors degree. Forty-five percent had a medical degree (MD, DO, DDS, DVM), while 35% had a public health degree. A smaller number (15%) had a nursing degree. Twenty percent did not have a medical, nursing, or public health degree.

Racial/Ethnic Identities of LHD Employees

The LHDs reported the percentages of their employees identifying as races, as well as Hispanic/Latino ethnicity. The numbers below represent the *mean* percentage reported for each category. Please note that only 13 counties reported valid data for race/ethnicity, which may affect the representativeness of these data.

Race		
	Mean %	Range
White	71.4%	46-99%
Black/African American	20.6%	0-41%
Some other race	4.6%	0-12%
Asian	1.9%	0-10%
Two or more races	1.1%	0-4%
American Indian/Alaska Native	<1%	0-1%
Native Hawaiian/Other Pacific Islander	<1%	0-<1%
Ethnicity		
Hispanic, Latino, or Spanish origin (of any race)	5.6%	1-12%

Retention and Career Ladders

Current Implementation of Career Pathways/Ladders			
	No activity	In process of implementation	Have implemented
Career ladders exist in our agency	17%	33%	50%
Jobs have clearly outlined progression/pathways	17%	6%	78%
Written policies or process outlining supervisory training opportunities	11%	17%	72%
Written policies or process outlining management/leadership training opportunities	11%	17%	72%
Written policies or processes outlining succession planning	44%	33%	22%

Policymaking and Advocacy

Active Involvement in Policy or Advocacy Activities during Past Two Years, by Area		
	n	%
COVID-19 emergency preparedness and response	18	95%
COVID-19 infectious disease (e.g., vaccination, masking)	18	95%
Mental health	16	84%
Tobacco, alcohol, opioids, or other drugs	15	79%
Funding for local public health	13	68%
Obesity/physical activity	12	63%
Non-COVID infectious disease (e.g., vaccination)	11	58%
Oral health	10	53%
Applying a health equity lens to internal budgeting practices	10	53%
Non-COVID emergency preparedness and response	10	53%
Applying health in all policies	9	47%
Food safety	9	47%
Reforms related to community policing	8	42%
Waste, water, or sanitation	8	42%
Funding for access to healthcare	7	37%
Other environmental health	6	32%
Injury/violence prevention	5	26%
Safe and healthy housing	4	21%
Land use planning	3	16%
Other policy areas	2	11%
Climate change	1	5%
Planning external resource allocation using equity lens	1	5%
Occupational health and safety	0	0%
None	1	5%

About one in five LHDs (21%) reported that a new local public health ordinance or regulation had been adopted in their jurisdiction during the past two years, and 32% said that an existing public health ordinance or regulation had been substantively revised. Of the six counties who reported a new or revised ordinance, the most common topics were environmental health, funding for public health, funding for access to health care, and COVID-19 emergency preparedness and response.

Legal Counsel

Services Provided by LHDs' Legal Counsel		
	n	%
Informally advises us on the legality/constitutionality	12	67%
Provides formal opinions involving the organization	11	61%
Represents the organization in all legal matters pertaining to the organization	11	61%
Assists in drafting the organization's laws, statutes, regulations, enforcement policies and enforcement actions	8	44%
Determines which entities to litigate or prosecute for violation of the organization's regulatory responsibilities to uphold statutes, regulations, or ordinances	6	33%
My LHD does not have a legal counsel	4	22%
Participates in programmatic activities, including but not limited to the identification of public health interventions based on law and policy	1	6%
None of the above	0	0%

Partnerships and Collaboration

Note: Responses below are not mutually exclusive.

Types of Partnerships/Collaboration during the Past Year						
	Shared Personnel/ Resources	Written agreement	Regularly scheduled meetings	Exchange information	No relationships	N/A
Business (community-based)	25%	50%	38%	63%	0%	0%
Colleges or universities	25%	75%	38%	50%	0%	13%
Community health centers	13%	75%	50%	50%	0%	0%
Community-based nonprofits	50%	75%	75%	63%	0%	0%
Cooperative extensions	0%	13%	13%	63%	13%	13%
Criminal justice system	63%	38%	88%	50%	0%	13%
Economic and community development agencies	0%	13%	50%	88%	0%	13%
Emergency responders	75%	63%	88%	75%	0%	0%
Faith communities	38%	25%	25%	88%	0%	0%
Health insurers	25%	38%	38%	50%	13%	0%
Hospitals	38%	63%	88%	75%	0%	0%
Housing agencies	25%	25%	25%	88%	0%	0%
K-12 schools	100%	75%	100%	63%	0%	0%
Libraries	50%	13%	50%	75%	0%	0%
Local planning agency	25%	0%	63%	75%	0%	0%
Media	25%	13%	13%	75%	13%	0%
Mental health/ substance abuse providers	50%	88%	88%	63%	0%	0%
Parks and recreations	13%	25%	38%	88%	0%	13%
Physician practices/ medical groups	38%	25%	38%	88%	0%	0%
Transportation	25%	75%	38%	75%	0%	0%
Tribal government agencies	0%	0%	0%	13%	0%	88%
Veterinarians	13%	38%	13%	88%	0%	0%