

Blueprint for Public Health Excellence

Recommendations for Improved Effectiveness and Efficiency of Local Public Health Protections

REPORT OF THE SPECIAL COMMISSION ON
LOCAL AND REGIONAL PUBLIC HEALTH

JUNE 2019

About the Special Commission on Local and Regional Public Health

The Special Commission on Local and Regional Public Health was created by a legislative resolve signed by Governor Charles Baker in August 2016. The 25-member body's charge was to “assess the effectiveness and efficiency of municipal and regional public health systems and to make recommendations regarding how to strengthen the delivery of public health services and preventive measures.”

This is the final report of the Special Commission on Local and Regional Public Health, approved by the Commission at its June 27, 2019, meeting.

The report, executive summary, and other information about the Commission are available on the Massachusetts Department of Public Health website at:

www.mass.gov/dph/olrh

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Message from Public Health Commissioner Monica Bharel

Dear Colleague,

As the Massachusetts Department of Public Health celebrates its 150th anniversary and its extraordinary public health accomplishments, the Commonwealth's public health infrastructure is at a turning point. Studies over the past two decades document significant differences across cities and towns in the quality, depth, and breadth of public health protections. Recognizing the need to reassess the Massachusetts local and regional public health system and make recommendations to improve it, the legislature passed and Governor Baker signed into law Chapter 3 of the Resolves of 2016 to establish the Special Commission on Local and Regional Public Health. As chair of the Commission, it is my pleasure to share its findings and recommendations and to invite you to join us as we follow the path outlined by the Commission to strengthen the Massachusetts local public health system.

The report reflects the participation of a wide range of stakeholders who were actively engaged in the nearly two years of study and discussion by the Commission. To ensure that its recommendations represented a diverse set of interests in the wellbeing of residents of the Commonwealth, the Commission was structured to include members of the legislature, designees of the leadership of key executive branch agencies, representatives of public health and other key stakeholders, and appointees by the governor. We have been fortunate that the people selected to serve on the Commission have brought extraordinary wisdom, passion, and experience to its work. For that reason, readers of this report can trust that it is the product of careful, thoughtful, and informed deliberation on ways to strengthen our local and regional public health system.

I hope that this report will foster continued discourse on strengthening local public health capacity and add to the Commonwealth's legacy as a public health leader and innovator.

Sincerely,

A handwritten signature in black ink, appearing to read 'MBharel'.

Monica Bharel, MD, MPH, Commissioner
Massachusetts Department of Public Health
Chair, Special Commission on Local and Regional Public Health

Special Commission on Local and Regional Public Health

EXECUTIVE BRANCH REPRESENTATIVES

Department of Public Health

Dr. Monica Bharel, MD, MPH, Commissioner; Chair, Special Commission on
Local and Regional Public Health

Executive Office of Administration and Finance

Sean Cronin,¹ Senior Deputy Commissioner of Local Services

Department of Environmental Protection

C. Mark Smith, PhD, MS, Director, Office of Research and Standards

Department of Agricultural Resources

Lorraine O'Connor, DVM, Chief Veterinary Health Officer, Division of Animal
Health

APPOINTMENTS BY THE GOVERNOR

Research/Academic Institution

Justeen Hyde, PhD, Health Sciences Researcher, U.S. Department of Veterans
Affairs

Community Health Center

Maria Pelletier, MPA, BSN, RN, Administrative Director, Pediatrics, East
Boston Neighborhood Health Center

Hospital System

David McCready, Brigham Health

¹ Replaced Lauren Peters, May 2018

Workforce Development

Charles Kaniecki, local public health consultant

Municipality with population greater than 50,000

Sharon Cameron, MPA, RS, Director, Peabody Department of Health and Human Services

Municipality with population between 5,000 and 50,000

Vacant²

Public Health District (at least one town with population less than 5,000)

Phoebe Walker, MPPA, Director of Community Services, Franklin Regional Council of Governments

At Large

Dr. Carmela Mancini, DO, MPH, FACP, physician, Marblehead

APPOINTMENTS BY LEGISLATIVE LEADERSHIP

Senate President

Senator Jason M. Lewis, Fifth Middlesex District

Senate Minority Leader

Senator Ryan Fattman,³ Worcester and Norfolk District

Speaker of the House

Edward Cosgrove, PhD, Chair, Needham Board of Health (designee of Rep. Denise Garlick,⁴ Thirteenth Norfolk District)

House Minority Leader

Representative Hannah Kane, Eleventh Worcester District

² Although this seat was vacant, several members of the Commission have current or past work experience in municipalities with populations between 5,000 and 50,000.

³ Replaced Senator Richard Ross, December 2018

⁴ Replaced Representative Stephen Ultrino, December 2018

REPRESENTATIVES OF NAMED ORGANIZATIONS

Massachusetts Municipal Association

Kevin Mizikar, Town Manager, Town of Shrewsbury

Massachusetts Taxpayers Foundation

Eileen McAnneny, President

Massachusetts Public Health Association

Bernard Sullivan, MPH, CHO, RS, independent public health consultant

Massachusetts Health Officers Association

Sam Wong, PhD, Director of Public Health, City of Framingham

Massachusetts Association of Health Boards

Cheryl Sbarra, JD, Director of Policy and Law

Massachusetts Environmental Health Association

Steven Ward, MA, MPH, RS/REHS, Public Health Solutions, LLC

Massachusetts Association of Public Health Nurses

Terri Khoury, RN, DNP, Public Health Assistant Nursing Professor, Worcester State University

Western Massachusetts Public Health Association

Laura Kittross, JD, MPH, Public Health Program Manager, Berkshire Regional Planning Commission

Public Health Regionalization Working Group

Harold Cox, MSSW, Associate Dean for Public Health Practice, Boston University School of Public Health

Coordinating Committee

Ron O'Connor, Chair (designee of DPH Commissioner Monica Bharel)
Sean Cronin, Rep. Hannah Kane, Terri Khoury, Laura Kittross, Kevin Mizikar
Cheryl Sbarra, Bernie Sullivan, Phoebe Walker, Steven Ward, Sam Wong

Standards Subcommittee

Cheryl Sbarra (Chair)
Sharon Cameron, Terri Khoury, Laura Kittross, Maria Pelletier, Bernie Sullivan
Phoebe Walker, Steven Ward

Structure Subcommittee

Bernie Sullivan (Chair)
Rep. Hannah Kane, Harold Cox, Kevin Mizikar
Charlie Kaniecki, Terri Khoury, Lorraine O'Connor

Workforce Credentials Subcommittee

Laura Kittross (Chair)
Sharon Cameron, Charlie Kaniecki, Maria Pelletier, Steven Ward

Data Subcommittee

Justeen Hyde (Co-chair), Phoebe Walker (Co-chair)
Cheryl Sbarra, Mark Smith, Carmela Mancini, David McCready

Finance Subcommittee

Sam Wong (Chair)
Sean Cronin, Sen. Jason Lewis, Eileen McAnneny, Cheryl Sbarra

Acknowledgments

The Special Commission on Local and Regional Public Health is grateful to the many individuals and organizations that contributed their time, talents, expertise, and resources:

- The MDPH Office of Local and Regional Health (OLRH), led by **Ron O'Connor** with direction and support from **Eileen Sullivan**, MDPH Chief Operating Officer, provided critical information gathering, meeting coordination, and administrative support for the Commission. The OLRH team of **Shelly Yarnie**, **Erica Piedade**, **Jessica Ferland**, **Damon Chaplin**, and **Michael Coughlin** provided a wide array of services that ensured the smooth and effective functioning of the Commission including research, communication, meeting logistics, document preparation and review, and data analysis.
- **DPH bureau, office, and program leadership and staff** were frequently called upon for guidance and support on a wide range of topics. They assisted with data gathering and analysis, verification of information in the status report and this final report, and other advice to staff, the Commission, and subcommittees.
- **Shaye Laridian**, Art Director in the DPH Communications Office, provided the design for the report cover and the separately published edition of the executive summary.
- **Anastacia Marx de Salcedo**, the principal writer/editor of the final report, used her exceptional writing, research, and editing skills to create a compelling and engaging narrative of the Commission's findings and recommendations.
- **Boston University School of Public Health (BUSPH)** Associate Dean **Harold Cox** and Assistant Dean **Anne Fidler** worked with the Office of Local and Regional Health to recruit and assign graduate students through the Activist Lab Fellowship program. The students, **Elizabeth Doyle** (Spring 2017), **Eddy Atallah** (2017-2018), and **Lendy Chu** (2018-2019), contributed valuable research, document preparation, and data analysis.
- **Hayley D'Auteuil**, Worcester State University, and **Donna Allen**, University of New England, supported the Commission's work through data analysis and research assignments associated with their internship and practicum experiences.

- The **Kansas Department of Health and Environment** hosted a fact-finding visit by BUSPH student Eddy Atallah that provided valuable perspectives for the Commission's discussions.
- **Patrick Libbey** and **Grace Gorenflo** of the national **Center for Sharing Public Health Services** provided an insightful presentation on cross-jurisdictional sharing that provided Commission members with a common understanding of the benefits and complexities of sharing public health services.
- Several Massachusetts public health stakeholders attended and contributed to discussions at subcommittee meetings. They include **Donna Moultrup, Doug Halley, Rae Dick, Melanie O'Malley, and Maddie Ribble.**
- 275 local public health officials completed the Commission's workforce credentials survey, which provided a valuable assessment of the needs of the local public health workforce.
- Many local public health stakeholders (Appendix B) participated in the June 2018 listening sessions or submitted written comments on the Commission's Status Report. Their comments helped shaped many of the findings and recommendations in this report.
- The following organizations provided space for the listening sessions: **Waltham Public Library, Lakeville Public Library, Peabody Municipal Light Plant, Massachusetts Division of Fisheries and Wildlife, Western Massachusetts Hospital, and John W. Olver Transit Center.**
- Many agencies and organizations generously provided conference rooms for the nearly 50 meetings of the Commission, the Coordinating Committee, and the five subcommittees. The **Massachusetts Division of Fisheries and Wildlife** hosted the majority of the Commission and subcommittee meetings. The **Town of Shrewsbury, Worcester Senior Center, Massachusetts Emergency Management Agency, Massachusetts Technology Collaborative, and YWCA Central Massachusetts** also hosted Commission meetings.
- **Juanita Estrada, MS, Senior Epidemiologist, Office of Local Health Administration, Connecticut Department of Public Health,** provided valuable insight on that state's approach to data reporting from local public health authorities.

List of Acronyms

ASTHO	Association of State and Territorial Health Officials
BCBOHA	Berkshire County Boards of Health Association
BOH	Board of Health
BSAS	Bureau of Substance Addiction Services
CDC	Centers for Disease Control and Prevention
CJS	Cross-Jurisdictional Sharing (or regionalization)
CLPH	Coalition for Local Public Health
CSPHS	Center for Sharing Public Health Services
DEP	Massachusetts Department of Environmental Protection
DOR	Massachusetts Department of Revenue
DPH	Massachusetts Department of Public Health
FPHS	Foundational Public Health Services
LPH	Local Public Health
LPHI	Local Public Health Institute
MAHB	Massachusetts Association of Health Boards
MAPHIT	Massachusetts Public Health Inspector Training
MAPHN	Massachusetts Association of Public Health Nurses
MAVEN	Massachusetts Virtual Epidemiological Network
MDAR	Massachusetts Department of Agricultural Resources
MDPH	Massachusetts Department of Public Health
MEHA	Massachusetts Environmental Health Association
MHOA	Massachusetts Health Officers Association
MMA	Massachusetts Municipal Association
MPHA	Massachusetts Public Health Association
NACCHO	National Association of County and City Health Officials
OLRH	Office of Local and Regional Health
PHAB	Public Health Accreditation Board
PHDIG	Public Health District Incentive Grant
PHII	Public Health Informatics Institute
PHPBRN	Public Health Practice-Based Research Networks
PHO	Public Health Officer
REHS	Registered Environmental Health Specialist
RS	Registered Sanitarian
SCLRPH	Special Commission on Local and Regional Public Health
WMPHA	Western Massachusetts Public Health Association

Executive Summary

No other government agencies are as far-reaching—and invisible—as local public health departments. No matter where you are—at home, at work, at school, or at play, local public health departments are responsible for ensuring your safety and wellbeing. Massachusetts is unique in the country in that it has a board of health for each of its 351 cities and towns and a long and proud history of home rule. Its tiny, standalone boards of health,⁵ many formed over a century ago, stand in contrast to the county or regional organization of local public health authority in most other states. Their budgets, often bare bones, are the sole responsibility of individual cities and towns, with no dedicated state funding. Their ever-expanding duties are determined by a patchwork of state laws and regulations in addition to local ordinances and bylaws. They report to numerous officials, yet there are few systems in place to assess their performance and no benchmarks for their overall success.

Many of Massachusetts' local health departments are already struggling to meet existing mandates to address communicable diseases, food safety, housing, sewage, well water, and environmental hazards. But in the 21st century, their list of duties has ballooned to include protecting the environment, planning for natural and manmade disasters, preventing new insect and tick-borne diseases, reducing substance addiction, reducing the prevalence of chronic diseases, and improving mental health. The Commonwealth's local public health system has mostly been unable to keep up with these new demands.

Local public health systems can help improve health, build a stronger Massachusetts, and reduce health care costs. If local health departments can forestall just one in one thousand preventable hospitalizations in Massachusetts, it would represent a

⁵ Throughout this report, reference is made to local boards of health (the policymaking elected or appointed public body) and local health departments (the staff who carry out day-to-day public health responsibilities). In most municipalities, the local health department reports directly to the board of health.

savings of hundreds of thousands of dollars.⁶ If they can, by educating the public and providing opportunities to eat right and exercise, steer those at risk for chronic diseases to healthier paths, the savings could be millions more. Finally, safe and healthy communities are more likely to have happy and productive residents, increasing the value and reducing the healthcare costs of the state’s human capital, a critical component of its thriving educational, medical, biotech, technology, financial, and other industries.

If adequately structured, the existing system can improve health for all. Building on existing infrastructure and respecting local autonomy, Massachusetts can offer new ways to organize and support local health departments to raise standards, strengthen collaboration, better use technology, improve skills, and stabilize resources. This report, the findings of the Special Commission on Local and Regional Public Health (SCLRPH), shows how, providing six interlocking recommendations and a detailed roadmap to achieve them. It is time to move the Massachusetts system to a position of national leadership.

KEY COMMISSION FINDINGS

Current State of the Massachusetts Local Public Health System

- Many Massachusetts cities and towns are unable to meet statutory requirements and even more lack the capacity to meet rigorous national public health standards.
- Massachusetts has more local public health jurisdictions than any other state (351)—one for each city and town—and cross-jurisdictional sharing of services is limited despite evidence that it improves effectiveness and efficiency.
- While other states have county or regional systems, most Massachusetts municipalities operate standalone health departments that are unable to keep up with a growing list of duties.
- Because Massachusetts lacks a comprehensive system to collect local public health data, there is limited capacity to measure local public health system performance and to use local data to plan public health improvements.

⁶ Based on data from Massachusetts Health Policy Commission. “Quality and Access: Preventable Hospitalizations in Low-Income Communities.” July 2014 *Supplement to 2013 Cost Trends Report*. Boston, MA: 2017.

- The Massachusetts local public health system does not adequately support its workforce with standards and credentials that align with the capacity to meet current mandates and future standards.
- Funding for local public health is inconsistent and inequitable in its ability to meet the current mandates and the needs of a 21st century system.

Evidence to Support System Improvements

- National public health standards provide a framework for a minimum package of services and a roadmap to strengthen the system to meet those standards.
- Massachusetts and national evidence supports cross-jurisdictional sharing as a means to improve effectiveness and efficiency.
- The best practices for data collection and disease surveillance in Massachusetts and other states hold promise for improved data reporting and gathering capabilities.
- While there is an emerging effort to set national workforce standards, many states already have minimum qualifications for some members of the local public health workforce. In Massachusetts, minimum qualifications exist for other municipal officials such as building commissioners and library directors.
- The nationally recognized Foundational Public Health Services framework provides a means for costing out local public health services. Massachusetts and many other states face the challenge of limited investment of resources to ensure local capacity to provide 21st-century public health protections.

Below is a summary of the Commission’s findings and recommendations in response to its charge. These findings and recommendations correspond to six areas—standards, shared services, data, credentials, resources, and continuity—around which the remainder of the report is organized.

PUBLIC HEALTH STANDARDS

Massachusetts’ 351 boards of health are tasked by multiple statutes and state regulations to provide a broad array of protections to residents. Over two decades of academic, government, and nonprofit studies and the Commission’s own observations

show that many local public health departments are falling short of meeting requirements.

Massachusetts has not kept pace with national standards for the local public health system. While not alone among the states, the Massachusetts standard, implicit in its decades-old statutes and regulations, has not been raised to a level that even addresses a set of standards (the Ten Essential Public Health Services) recommended by the U.S. Centers for Disease Control and Prevention (CDC) over two decades ago. The CDC standards are the underpinning for the present-day expectations for our public health system.

To improve, the local public health system must first have clear, comprehensive, uniform, and quantifiable goals. The nationally accepted Foundational Public Health Services (FPHS), a set of seven cross-cutting capabilities and five program areas that all health departments should have, is best suited to elevate standards in Massachusetts.

A two-step process is the most realistic for this transformation. The first step is to bring local health departments into compliance with existing statutes and regulations. The second is to help them meet the criteria for FPHS in readiness for when these are adopted at the state level. Higher standards will compel a higher level of functioning across the local public health system, improving outcomes and reducing disparities.

Massachusetts can learn from the experience of several other states that have adopted FPHS or are in the process of doing so. The process of capacity assessment, priority setting, and implementation has been well documented, particularly for Oregon, Washington, and Ohio—three pilot states that have used FPHS as the cornerstone of public health modernization efforts.

While an even more rigorous system—voluntary, national public health accreditation—is currently out of reach for many municipalities, the Foundational Public Health Services can be a stepping stone to it. The Worcester-led Central Massachusetts Regional Public Health Alliance, Boston, and Cambridge are currently the only

accredited local health departments in the Commonwealth. The Massachusetts Department of Public Health is one of 36 state health departments that are accredited.

PUBLIC HEALTH STANDARDS

Key Findings

- Many Massachusetts cities and towns are unable to meet statutory requirements and even more lack the capacity to meet rigorous national public health standards.
- National public health standards provide a framework for a minimum package of services and a roadmap to strengthen the system to meet national standards.

Recommendations

Elevate the standards for and improve the performance of local public health departments by:

- Finding ways to help cities and towns meet existing statutory and regulatory requirements, and
- Evaluating timeline and appropriate phases of implementation of the Foundational Public Health Services (FPHS) as the minimum set of services that every Massachusetts resident can expect to receive.

CROSS-JURISDICTIONAL SHARING

Massachusetts has 351 local public health jurisdictions, far more than any other state, and a long history of local autonomy. Most states, by contrast, organize their local public health system at the larger county and district levels, a structure demonstrated to improve effectiveness and efficiency by the Center for Sharing Public Health Services. Despite its obvious value, Massachusetts' cities and towns have been slow to embrace models for shared public health services.

By pooling resources, functions, and expertise, a consortium of cities and towns, especially those that are smaller or less prosperous, can improve compliance with their statutory and regulatory mandates and expand the protections and opportunities they offer residents.

Cross-jurisdictional sharing (CJS) has many advantages. It can offer both division of labor and economies of scale. Individual boards of health do not give up statutory authority, and taxpayer investment is maximized.

The Commonwealth already has a long history of public health resource sharing, often in response to a crisis or Massachusetts Department of Public Health (DPH) funding. Today, some Massachusetts municipalities participate in public health districts or other shared services arrangements. A sample of compliance measures for Massachusetts cities and towns in a federally funded pilot program for shared services showed marked improvement in food inspections; use of the Massachusetts Virtual Epidemiologic Network (MAVEN), the MDPH electronic epidemiological surveillance system; and the capacity to do lead determinations during housing inspections.

Progress has been made, but Massachusetts' local public health system remains a patchwork, and most residents are not receiving the full complement of services and protections. This deficiency is exacerbated by new 21st century challenges. Further cross-jurisdictional sharing is the natural next step in the evolution of Massachusetts' local public health system.

In its efforts to build upon its experience with cross-jurisdictional sharing, the Commonwealth can look to best practices in Massachusetts and nationally for tools, roadmaps, and similar evidence-based resources.

CROSS-JURISDICTIONAL SHARING

Key Findings

- Massachusetts has more local public health jurisdictions than any other state (351)—one for each city and town—and cross-jurisdictional sharing of services is limited despite evidence that it improves effectiveness and efficiency.
- While other states have county or district-based systems, most Massachusetts municipalities operate standalone health departments that are unable to keep up with the growing list of duties.
- Massachusetts and national evidence supports cross-jurisdictional sharing as a means to improve the effectiveness and efficiency of the Massachusetts local public health system.

Recommendation

Increase cross-jurisdictional sharing of public health services to strengthen the service delivery capabilities of local public health departments, take advantage of economies of scale, and coordinate planning.

- Increase the number and scope of comprehensive public health districts, formal shared services agreements, and other arrangements for sharing public health services.

DATA REPORTING AND ANALYSIS

In the Commonwealth, local health departments maintain three dozen different kinds of records, according to the Massachusetts Association of Health Boards. These include records of inspections, immunizations, court filings, meetings, and complaints. Only a few are required by statute or regulation to be reported to DPH, impeding the state's ability to support the local public health system and to do statewide monitoring and planning.

Local health departments in Massachusetts implement and enforce regulations from both DPH and the Massachusetts Department of Environmental Protection (DEP). Yet neither DPH nor DEP have a comprehensive system for processing and analyzing information about how well local health departments are protecting the public. Both departments have limited capacity to gather and share data with local health departments—data that could inform and improve local planning and decision-making. A comprehensive data system would allow DPH and DEP to do this.

The Commission's Data Subcommittee sought to assess compliance of Massachusetts' local health departments with mandated reporting to DPH, but the results were inadequate because response rates were low and the state agency's ability to follow up was limited. An important next step in the improvement of Massachusetts'

local and state public health system is a robust capacity assessment as has been done in other states to determine if it can deliver the FPHS services model.

In other states, local health departments have begun to use public health informatics to help acquire, store, and use information to improve population health. Many of these states have implemented mandatory local health “report cards” that can be reviewed by state and local administrators, the state legislature, and consumers.

Massachusetts’ local data infrastructure and data-related workforce capacities are underdeveloped. National studies suggest that local health departments are eager for more data-related training and professional development, especially in using and interpreting data. Adopting higher standards such as the Foundational Public Health Services will create an even greater demand for informatics proficiency.

DATA REPORTING AND ANALYSIS

Key Findings

- Because Massachusetts lacks a comprehensive system to collect local public health data, there is limited capacity to measure local public health system performance and to use local data to plan public health improvements.
- The best practices for data collection and disease surveillance in Massachusetts and other states hold promise for improved data reporting and gathering capabilities.

Recommendations

Improve state and local public health departments’ planning and system accountability by:

- Creating a standardized, integrated, and unified public health reporting system, and
- Strengthening the DPH, DEP, and local public health capacity to collect, analyze, and share data.

WORKFORCE CREDENTIALS

In Massachusetts, the lack of uniform standards for experience, training, credentialing, and staffing for board of health members and local health departments

creates differences in local public health capacity across the state. Where you live determines not only the depth and breadth of public health protections that are available, but also the qualifications of the individuals providing the services.

The personnel crisis is even worse in small towns and rural areas, hamstrung by small budgets, geographic isolation, and a lack of infrastructure. (The Commonwealth may want to examine workforce size as it prepares to adopt the Foundational Public Health Services.) Lower salaries and part-time positions make it challenging to recruit and retain employees with cutting-edge public health training. Those that are hired and want to acquire or update credentials may have difficulty doing so.

The Special Commission's Workforce Credentials Subcommittee gathered data from over 275 local health departments on staff positions and qualifications, training and training budgets, staffing budgets, permits, and inspections. It found differences in service delivery resulting from disparities in support and funding and the lack of workforce standards. The subcommittee concluded from its survey and other studies that the following contributed to those disparities: 1) lack of incentives or penalties for ensuring a qualified staff; 2) limited return on investment for individuals investing in training and credentialing; and 3) high turnover, high rates of retirement, and challenges in recruitment and retention.

Overall, the health districts and other shared services arrangements in the survey, 11 of 15 statewide, outperformed the standalone health departments, with a higher rate of certified and credentialed staff and better pay for management and clerical staff. The survey also revealed that many Massachusetts health departments have little or no budget for professional training, often lack coverage for staff to attend training, face long travel times to training programs, or have limited internet access to online training. In some cases, boards of health so poorly understand their role that they simply do not know what they need to know.

Massachusetts' institutes of higher learning do not offer undergraduate majors or programs in municipal public health, so there is no pipeline of students field-trained to

inspect food establishments and housing, oversee waste disposal, respond to chemical hazards, or support other common local public health needs. This problem will be exacerbated by the large number of experienced workers who are expected to retire in the next few years.

While free and low-cost voluntary training programs for the Massachusetts public health workforce exist, including online courses, webinars, and blended classroom training as well as other formats, they are offered infrequently and in limited parts of the state. The fact that these are voluntary may also widen existing disparities, since, when combined with work demands, distance, and other impediments, those who could most benefit from the training often cannot or do not participate in it.

WORKFORCE CREDENTIALS

Key Findings

- The Massachusetts local public health system does not adequately support its workforce with standards and credentials that align with the capacity to meet current mandates and future standards.
- While there is an emerging effort to set national workforce standards, many states already have minimum qualifications for some members of the local public health workforce. In Massachusetts, minimum qualifications exist for other municipal officials such as building commissioners and library directors.

Recommendations

Set education and training standards for local public health officials and staff and expand access to professional development while ensuring diversity by:

- Implementing the local public health workforce credentialing standards adopted by the Commission,
- Making training available and accessible to local public health departments, and
- Developing a system to track and monitor workforce credentialing.

RESOURCES TO MEET SYSTEM NEEDS

Unlike most other states, which distribute state funding to local health departments, in Massachusetts, local public health relies almost exclusively on municipal property taxes and fees for funding. Many or most are already straining to provide necessary services.

System-wide changes recommended by the Commission to improve the local public health system such as grant programs, technology, training, and technical assistance will clearly benefit individual cities and towns. However, while municipalities have some incentive to financially support such efforts on their own, the reality is they may not without state-level support.

These changes will also improve state-level outcomes, reducing health costs overall and helping to create a healthy workforce, indirectly bolstering the economy—a significant public good. It is therefore appropriate that the Commonwealth consider providing funding to modernize the local public health system so it can meet its existing mandates and the expanded expectations of the 21st century.

Local health department budgets in Massachusetts vary wildly and are almost always subject to the many and competing demands of other municipal departments. Some large and mid-size health departments fare well, but most are unable to provide essential public health services to their residents. The half of Massachusetts health departments that represent towns of 10,000 or fewer residents face significant challenges with resources.

States that have modernized their local public health systems usually provide direct aid to local health departments. Massachusetts does not, although it does offer more than \$1 billion in Unrestricted General Government Aid (UGGA) to cities and towns.⁷ Many other local government departments in Massachusetts, such as schools, libraries, and councils on aging, have dedicated state funding with credentialing and

⁷ The state also provides approximately \$5 billion for education via Chapter 70 funding.

performance requirements which allows them to consistently provide high-quality services to residents and to plan and carry out long-term projects. This type of stable resource should be considered for the local public health system.

Existing resources should be used more efficiently. One of the most impactful strategies is the formation of multi-municipal districts. This pools budgets, staff, and functions and can improve effectiveness and efficiency as compared to standalone health departments. In doing so, local health departments are better able to partner with hospitals and other health and human services providers to expand the scope of public health protections available to residents.

RESOURCES TO MEET SYSTEM NEEDS

Key Findings

- Funding for local public health is inconsistent and inequitable in its ability to meet the current mandates and the needs of a 21st century system.
- The nationally recognized Foundational Public Health Services framework provides a means for costing out local public health services.
- Massachusetts and many other states face the challenge of limited investment of resources to ensure local capacity to provide 21st-century public health protections.

Recommendation

To ensure optimal health protections and wellness opportunities for all Massachusetts residents, the Commonwealth should commit appropriate resources for the local public health system changes proposed by the Commission.

CONTINUITY AND SUSTAINABILITY

Modernizing Massachusetts' local public health system is a monumental but necessary task. Like any project of this magnitude, it has progressed slowly but steadily toward the goal. To keep the state moving forward on its journey, it is critical that there

be an oversight body to monitor progress, that the relevant state entities have appropriate authority and resources, and that stakeholders continue to be partners in the process.

CONTINUITY AND SUSTAINABILITY

Key Finding

The Massachusetts local public health system depends on the continuing engagement of the stakeholders who have laid out an actionable path to effectiveness and efficiency.

Recommendations

- Continue to engage a wide range of stakeholders to provide ongoing support for the recommendations for local public health systems improvement.
- Give DPH and DEP the infrastructure and authority to support the recommendations for local public health system improvement.
- Identify and address administrative actions at DEP and DPH that can support the recommendations of the Commission.

Every day about 200 lives begin in Massachusetts. Another 150 end.⁸ Between those two bookmarks, no other entity is more important to ensuring the health and wellbeing of residents than their local health department. While each of the individual measures recommended in this report is beneficial by itself, they are intended to be adopted as an interlocking set, reinforcing and magnifying each other. Only this type of systemic change will help make Massachusetts a leader in the local public health modernization process and give all the Commonwealth's inhabitants the services and protections they need to lead healthy, productive lives.

⁸ Massachusetts Department of Public Health. "Massachusetts Births 2016" and "Massachusetts Deaths 2016." Boston, MA: May and December 2018.

Summary of the Commission's Recommendations

1. Elevate the standards for and improve the performance of local public health departments.
2. Increase cross-jurisdictional sharing of public health services to strengthen the service delivery capabilities of local public health departments.
3. Explore improvements to the current platforms to report, analyze, and interpret data.
4. Set education and training standards for local public health officials and staff and expand access to professional development.
5. Commit appropriate resources for the local public health system changes proposed by the Commission.
6. Ensure continuity of stakeholder engagement in the implementation of the Commission's recommendations.

Introduction

No matter where you are—at home, at work, at school, or at play, the local public health system is looking out for your safety and wellbeing. Pick up a pizza for dinner? Food safety inspectors were there. Drop off your teenage daughter for a day at the town pool? Sanitarians reviewed and approved its cleanliness. Concerned that your apartment has lead paint that may be harming your toddler? The health inspector will determine if it is present. When you add in functions such as ensuring that septic systems are sited and installed correctly, monitoring the drinking water supply, and enforcing tobacco regulations, you have described just some of the protections and opportunities local public health departments provide to Massachusetts residents.

Except when they do not.

Massachusetts is unique in the country in that it has 351 municipalities and a long and proud history of home rule. Unlike other states, its boards of health are funded mostly by property taxes and administered locally. Unfortunately, because budgets, staff sizes, and capacities vary widely, this means there are often glaring differences from one municipality to another. In general, urban municipalities fare better than rural ones, and wealthy towns better than poorer ones. The consequences are that some Commonwealth inhabitants may get sick at a local restaurant that commingled raw salmonella-infected chicken with cooked, be at risk from an infectious disease when an investigation is delayed by a lack of a public health nurse, have their well or groundwater contaminated by an improperly-built septic system, or experience lifelong consequences of severe childhood lead poisoning because a home was not inspected for lead paint. In Massachusetts, where you live determines how safe and healthy you are likely to be.

This patchwork system is a legacy from a time when almost all aspects of health were local. Boards of health, which proliferated after the turn of the 20th century, worked within their city or town limits to address problems. Very few people had health

insurance. If residents got sick, they visited a nearby general practitioner and paid him out of pocket. But over the 20th and 21st centuries, medicine, healthcare systems, and public health have increasingly been organized regionally, at the state level, or nationally. In other states, local public health kept pace with this trend toward consolidation, since services were often provided by counties, the state itself, or large population or geography-based health districts. In Massachusetts, most local health departments still maintain their mid-20th century structure and organization.

The mismatch between local public health capacity and the rest of Massachusetts' medical, healthcare, and public health systems is underscored by new and emerging threats. One hundred years ago, a health department's primary duties were to reduce infectious diseases, contaminated or adulterated food and drink, maternal and infant mortality, and work-based injuries. Today, that list has ballooned. The 21st century local health department is also tasked with inspecting summer camps, permitting farmers markets, investigating hoarding, protecting groundwater, planning for natural and manmade disasters, preventing new insect and tick-borne diseases, reducing substance addiction, addressing chronic diseases, and improving mental health. Local public health authorities are a vital partner in key functions of the state Department of Public Health. But most Massachusetts boards of health, already struggling to meet existing mandates, cannot keep up.

If local health departments can forestall just one in one thousand preventable hospitalizations in Massachusetts, it would represent a savings of hundreds of thousands of dollars.⁹ If they can, by educating the public and providing opportunities to eat right and exercise, steer those at risk for chronic diseases to healthier paths, it could be millions more. Finally, safe and healthy communities are more likely to have happy and productive residents, increasing the value and reducing the healthcare costs of the state's human

⁹ Based on data from Massachusetts Health Policy Commission. "Quality and Access: Preventable Hospitalizations in Low-Income Communities." July 2014 *Supplement to 2013 Cost Trends Report*. Boston, MA: 2017.

capital, a critical component of its thriving educational, medical, biotech, technology, and other industries.

The good news is that this idiosyncratic, municipality-based system—highly sensitive to local needs and issues and able to develop its own policies—can be turned into a powerful force for better health for all of us. Building on existing infrastructure and respecting local autonomy, Massachusetts can offer new ways to organize and support local health departments to raise standards, strengthen collaboration, better use technology, improve skills, and stabilize resources. This report, the findings of the Special Commission on Local and Regional Public Health (SCLRPH), shows how, providing six interlocking recommendations and a detailed roadmap to achieve them. The project builds on almost two decades of earlier work by government, nonprofits, and academia and is intended to move the state a giant step forward in the formidable project of transforming Massachusetts' local public health system to a position of national leadership.

Public Health Standards

Having clear, comprehensive, uniform, and quantifiable goals is a vital first step to improvement in any domain. In the area of local public health, the Foundational Public Health Services (FPHS) standards (Appendix C), which come out of work done by the National Academy of Sciences' Institute of Medicine (IOM; now the National Academy of Medicine) define a minimum set of cross-cutting capabilities and program areas that a health department must provide to do its job well. In Massachusetts, adopting FPHS would both help boards of health focus on needed capabilities and reduce differences across the state. But this is not a change that can be made overnight. More study is required to determine feasibility, opportunities, and costs. In the meantime, to prepare

the local public health system for this possible transformation, the Commission envisions a two-step process. The first step is to bring all local health departments into compliance with existing statutes and regulations. The second step is to help build capacity to meet the criteria for FPHS in readiness for when these are adopted at the state level. This more gradual implementation will elevate health department functioning, eventually bringing them into alignment with their peers in FPHS states, and jumpstart Massachusetts in the local public health modernization process.

STATUTORY AND REGULATORY DUTIES OF MASSACHUSETTS LOCAL HEALTH DEPARTMENTS

Area of Responsibility	Specific Duties
Environmental Health	Reduce exposure to lead; ensure safe housing; inspect and issue permits to food establishments, summer camps, pools, beaches, tanning facilities, and body art establishments; investigate hoarding, trash, noisome trades, and other nuisances such as odors; provide information on radon; ensure proper siting, installation, and repair of on-site septic systems; site and permit municipal solid waste and recycling; ensure safety of private water supplies (wells); and address air quality issues.
Infectious Disease Prevention, Reporting, and Case Management	Investigate and report cases of over 90 infectious diseases, including tuberculosis; enter data into MAVEN and complete disease investigation duties; manage foodborne disease outbreaks; hold immunization clinics and disease screenings; provide chronic disease self-management counseling; educate the public about the risk of vector-borne infections (mosquitoes and ticks); enforce isolation and quarantine regulations.
Emergency Preparedness	Conduct all-hazards planning, including emergency dispensing site plans; inspect shelters.
Animal and Vector Control	Surveil for and prevent rabies, rodents, mosquitos, ticks,

	and the illnesses they carry.
Hazardous and Toxic Substances	Inspect and issue permits to sites; regulate household and medical waste disposal, including home sharps.
Regulations, Bylaws, and Ordinances	Set local regulations for a wide range of public health issues (e.g., tobacco, vaping) that might exceed state requirements.

Massachusetts’ 351 boards of health are tasked by multiple statutes and state regulations to provide a broad array of protections to residents. These range from inspecting pools, summer camps, and housing, to issuing permits for hazardous waste disposal and food establishments, to reporting on and managing cases of communicable diseases. Some local public health departments are meeting all these requirements, but many are not—it is impossible to say how many, since local health system compliance with even mandatory reporting is spotty.

There are several reasons for this limited and missing information on local health department performance in Massachusetts. The departments report information to multiple authorities, both state and local, making it difficult to collect and collate data. More importantly, there is no standard data set or data collection tool that can be used to assess performance. Local health department compliance with the various laws and regulations varies from good to uneven to nonexistent. Because of the home rule government structure, there is no central agency or department charged with monitoring and enforcing the functioning of the local public health system. A business truism is that what gets measured, gets managed. While it was beyond the scope of the Commission to conduct its own broad-based study, its Data Subcommittee did develop a proxy measure of capacity. (A cautionary note: For the above reasons, it was challenging to find quality statewide data, thus the results are limited in their ability to truly represent local public health capacity.)

The subcommittee found that the Commonwealth’s cities and towns had a moderate capacity to fulfill their public health mandates, with an average score of 2.9 on a scale from 0 to 5. The capacity measure was the sum of points given across five indicators—emergency response, communicable disease response, surveillance, state reporting, and public health policymaking. Scores on the individual indicators varied widely, with most municipalities doing well on surveillance and emergency response and least well on state reporting. Within each category, smaller population size was consistently associated with poorer performance. Based on this analysis, the expertise of members, and the extensive work done by other organizations, described below, the Commission has concluded that the Massachusetts local public health system as currently configured largely does not meet existing statutory and regulatory requirements.

MASSACHUSETTS LOCAL HEALTH DEPARTMENT CAPACITY

Capacity Score	Number of Municipalities	Average Population Size	Communicable Disease Response	Surveillance	State Reporting
			At least 85% of enteric disease investigations had occupation known	On MAVEN and logged in within last 2 months	Submitted 2016 food inspection report to DPH
Low (0-2)	112	12,153	11%	70%	6%
Medium (2.5-3.5)	134	21,961	47%	90%	31%
High (4-5)	105	28,678	69%	98%	73%
Statewide (2.9)	351		58%	90%	36%

From: Special Commission on Local and Regional Public Health, Data Subcommittee. “Progress Report.” (April 6, 2018)

The Commission’s assessment of the condition of local health in Massachusetts is confirmed by a decade and a half of work by academia, nonprofits, and government. While there have been new initiatives to address some issues, overall, the system has not improved. Therefore, the Commission feels that the key findings from these earlier studies, needs assessments, and surveys hold true today, based, in part, on the Data Subcommittee’s analysis of its proxy measures. They were:

- Over 70% of local public health departments did not have enough staff to comply with their statutory and regulatory duties.

——Coalition for Local Public Health, 2006¹⁰

- 80% of local public health department representatives agreed or strongly agreed that local public health departments are understaffed, underfunded, under-resourced, and cannot provide the most essential public health services to their citizens.

——Massachusetts Public Health Regionalization Project, survey conducted at February 29, 2008 statewide meeting

- Of the 246 cities and towns that responded to a 2011 survey of local health departments, most performed well in just two of ten areas—“Diagnose and Investigate Health Problems” and “Enforce Laws and Regulations”—and had limited capacity in all the rest.

——Institute for Community Health and the Boston University School of Public Health, 2012

- Nearly 25% of local health departments did not report the occupation of individuals with reported Salmonellosis in 2015-2016. This means that whether any of the over 500 people infected with Salmonellosis were food handlers was not known.

¹⁰ Hyde, Justeen and Tovar, Alison. “Strengthening Local Public Health in Massachusetts: A Call to Action.” Results of a statewide workforce assessment conducted for the Coalition for Local Public Health. Institute for Community Health, Malden, MA: June 2006.

- Just over 100 of 351 cities and towns reported in FY2017 that they had required emergency dispensing site plans in place.
- Less than 40% of local health departments submitted the required annual report of food inspections to DPH in 2016
- In a review of FY2017 response rates to Health and Homeland Alert Network quarterly drills, between 20% and 30% of cities and towns did not respond to a drill in the required amount of time.

——SCLRPH Data Subcommittee 2018

The divide between those Massachusetts residents who receive high-quality and comprehensive local public health protections and those who do not follows two basic patterns. In general, larger and wealthier towns and cities have bigger budgets, larger staffs, and more programs and protections for inhabitants. (They may also contend with more public health issues.) But smaller municipalities, most often rural, are less likely to have the resources necessary to meet all their statutory and regulatory duties. The Institute for Community Health and Boston University School of Public Health project found that although 49% of local health departments serve populations of 10,000 or less, “higher performance has been associated with health departments who serve larger populations.” There are 172 towns in Massachusetts—nearly half the state—that fall into this small population category.

A related pattern is an east-west split. A 2004 DPH needs assessment administered to local boards of health found that 22% of western Massachusetts municipalities had no public health director/agent compared to 3% for metropolitan Boston and that 17% of western Massachusetts cities and towns did not keep records of reportable diseases compared to 1.6% for metropolitan Boston. Since these projects were completed, the state of local public health in Massachusetts may have worsened, although some developments, such as the Commonwealth’s 2006 statewide MAVEN epidemiological online tracking system, are clearly improvements (See p. 48 for more

information on MAVEN). (A 2005 Coalition for Local Public Health survey found that, on average, local health budgets did not even keep pace with inflation; although this work was completed a decade ago, funding mechanisms remain the same.)

Differences in local public health capacity are compounded when coupled with residents' increasing need for services. For the past twenty years, health practitioners have focused on addressing social determinants—the conditions in which people are born, live, work, and age that affect their health. In Massachusetts, Hispanic workers are 80 times more likely and black workers 50 times more likely than non-Hispanic white workers to have a fatal occupational injury. African-American babies are twice as likely to die as white babies. Ninety percent of Massachusetts adults who have substance use disorders began drug use before the age of 18.¹¹ Rural residents are more likely to die from a variety of diseases and have a 50 percent higher rate of death from unintentional injuries, including opioid overdoses, than their urban counterparts, according to the National Association of County and City Health Officials. Many of these inequalities must be addressed at the local or regional level. Another change since the turn of the 21st century is the number of issues that falls into the purview of the local health department. Responsibilities now include bioterrorism, climate-change related natural disasters, the opioid epidemic, new insect and tick-borne diseases, mental health issues, and the social determinants of health. The combination of limited capabilities and ever-expanding obligations has left some Massachusetts' local public health departments woefully unprepared to meet existing and future challenges.

In this, the Commonwealth is not alone. Although none has the sheer number of local health departments that Massachusetts does, other states have also experienced growing pains as they try to meet the demands of the 21st century. This chasm was described as early as 1988 when the National Academy of Sciences' Institute of Medicine issued *The Future of Public Health* in response to the HIV/AIDS epidemic and an alarming increase in chronic diseases such as diabetes. Over the next two decades,

¹¹ Alie, Robyn. "State Targets Social Determinants to Improve Public Health Status." *Vital Signs*. Massachusetts Medical Society, Waltham, MA: March 2017.

national public health leaders sought to strengthen federal and state government public health infrastructure, but new crises, such as the September 2001 anthrax attacks; Hurricane Katrina; and the 2009 H1N1 pandemic, made clear that this strategy was insufficient. At the same time, through the Centers for Disease Control and Prevention (CDC), a group of experts created a way to link public health performance with outcomes, publishing *The Essential Services of Public Health* (“essential services”) in 1994.

The essential services concept quickly gained traction, and became the basis for other instruments. Fifteen years later, with funding from the Robert Wood Johnson Foundation, IOM adapted them to address measurement, the law, and funding. These policymakers sought a powerful mechanism that would boost system-wide capacity, upgrade and make uniform local public health standards, professionalize staff, and stabilize budgets. The solution, foundational public health services (FPHS), is the minimum set of skills, programs, and activities a health department must have to function well. The FPHS integrated into its model the original ESPH promulgated by CDC, but went further by incorporating ways to estimate costs and evaluate outcomes. The FPHS, detailed in IOM’s 2012 *For the Public’s Health: Investing in a Healthier Future*, defines seven critical capabilities, each of which should be functional within five basic program areas.

FOUNDATIONAL PUBLIC HEALTH SERVICES CAPABILITIES AND PROGRAM AREAS

Capabilities	Program Areas
Assessment / Surveillance Community Partnership Development Emergency Preparedness and Response Organizational Administrative Competencies Policy Development and Support Accountability / Performance Management Communications	Communicable Disease Control Chronic Disease and Injury Prevention Environmental Public Health Maternal, Child, & Family Health Access to and Linkage with Clinical Care

The Public Health Accreditation Board (PHAB), founded in 2007 and operational by 2009, also came out of the early work done at the CDC and the Robert Wood Johnson Foundation. PHAB administers a voluntary accreditation program for tribal, state, local, and territorial health departments to help them improve performance and quality. Departments are assessed in 12 different domains, generally considered more rigorous than the FPHS; the first ten of these were based on the original essential services; the last two address management, administration, and governance. PHAB also provides specific measures with which to assess whether an entity is meeting standards, including the types of documentation that can be used and an ample toolkit of self-assessments, checklists, and orientations. Preparing for accreditation can help local health departments improve the quality of the protections they offer the public, whether or not the organization completes the process.

A small number of states have already adopted foundational public health services or similar standards. Between 2007 and 2015, Colorado, Kentucky, North Carolina, North Dakota, Ohio, Oregon, Washington, and Texas passed legislation or, in the cases of Kentucky and North Dakota, used another mechanism to initiate the process. As a first step, many of these states conducted comprehensive capacity assessments. Ohio requires that each of its local public health departments achieve Public Health Accreditation Board (PHAB) accreditation as a condition of state funding. Although some work has been done on estimating the cost of the transformation and no data is yet available on how adopting FPHS has affected outcomes for residents, this approach appears promising.

Massachusetts has not ratified any national standards. Nor should it, at least not yet, since many municipalities still fall short of fulfilling their existing statutory and regulatory duties. (A very small number of larger cities—Worcester, as part of a health district, in 2016; Boston in 2017; and Cambridge in 2018 have sought and been given national accreditation from PHAB.) But carefully evaluating, preparing for, and then adopting the Foundational Public Health Services would likely dramatically improve the

functioning of the Commonwealth's local health departments, ensuring that all its residents receive the expected services and protections.

PUBLIC HEALTH STANDARDS

Key Findings

- Many Massachusetts cities and towns are unable to meet statutory requirements and even more lack the capacity to meet rigorous national public health standards.
- National public health standards provide a framework for a minimum package of services and a roadmap to strengthen the system to meet national standards.

Recommendations

Elevate the standards for and improve the performance of local public health departments by:

- Finding ways to help cities and towns meet existing statutory and regulatory requirements, and
- Evaluating timeline and appropriate phases of implementation of the Foundational Public Health Services (FPHS) as the minimum set of services that every Massachusetts resident can expect to receive.

Action Steps

- The Commission will oversee the process for assessing the feasibility, opportunities, and costs of implementation of the Foundational Public Health Services (FPHS) as the minimum set of public health services that every resident can expect to receive from the public health system.
- Conduct a comprehensive FPHS capacity assessment that includes readiness for FPHS implementation and state and local priorities for foundational capabilities and areas.
- Provide technical assistance for pilot shared services models that either help municipalities carry out statutory duties or strengthen capacity to meet FPHS.
- Provide incentives and use state funding and other resources strategically to achieve systems change that is consistent with the two-step process described in this report.
- Create a workforce development plan to ensure the workforce has capacity to meet existing standards and to operationalize FPHS.
- Codify FPHS through statute or regulation.

Cross-Jurisdictional Sharing

Massachusetts has 351 local public health jurisdictions, far more than any other state, and a long history of local autonomy. Most states, by contrast, organize their local public health system at the larger county and district levels, a structure demonstrated to improve effectiveness and efficiency by the Center for Sharing Public Health Services. Despite its obvious value, Massachusetts' cities and towns have been slow to embrace models for shared public health services.

Cross-jurisdictional sharing (CJS) is a powerful model for capacity improvement. By pooling resources, functions, and expertise, a consortium of cities and towns, especially those that are smaller or less prosperous, can improve compliance with their statutory and regulatory mandates and expand the protections and opportunities they offer residents. This is done without individual boards of health giving up any statutory authority and maximizes the investment made by taxpayers. The reason the CJS arrangement can be so advantageous is that it offers both division of labor and economies of scale. For example, aggregating inspections and permits across an entire region may justify hiring full-time or better-trained specialized staff. A broader and deeper bench of personnel enhances the level of service enjoyed by townspeople and allows smaller towns access to expertise from medical, healthcare, and academic partners they would not otherwise have. A unified local public health system can quickly and efficiently communicate among member municipalities and with the state about emerging health issues and coordinate responses, contributing to a well-functioning system for all Massachusetts residents. Finally, sharing personnel, policies, and procedures ensures standardized protections for all residents.

The Commonwealth already has a long history of public health resource sharing. The Barnstable County Department of Health and Environment, which provides valuable complementary services to local health departments on Cape Cod, was created in

1926 by a special act of the legislature. The Tri-Town Health Department was formed in 1929 to counter the bacterial and parasitic infections, spread through poor farm sanitation and worker hygiene, that plagued the dairy industry of the towns of Lee, Lenox, and Stockbridge. Since 1931, Nashoba Associated Boards of Health has provided inspection, code enforcement, prevention, and disease monitoring for 16 cities and towns in Central Massachusetts.

In the 1980s, several more public health districts were formed, including Eastern Franklin County Health District, Foothills Health District, and Quabbin Public Health District. The benefits of these longstanding cooperatives can be measured by the fact that once established, all have continued. Still, by the late 1990s, these six original health districts and one more, Acushnet-Marion-Rochester, covering about 5% of the population and fewer than 50 municipalities, were the only ones in the state. Most had arisen in the throes of a crisis or at the instigation of and with funding from DPH.

The need for cross-jurisdictional sharing in Massachusetts intensified with the new challenges faced by the nation in the 21st century. Starting in 2002 and funded by CDC bioterrorism monies, DPH worked with municipalities to create seven public health emergency preparedness regions. The agency also began several categorical grant programs, which encourage cooperation among smaller applicants, for tobacco control, substance addiction, and wellness. But while the trend was clearly toward shared services, there was no detailed roadmap on how to accomplish it and little or no information on evidence-based best practices.

In 2003, the Coalition for Local Public Health published *A Case for Improving the Massachusetts Local Public Health Infrastructure* documenting disarray in the Commonwealth's local public health system and the ever-increasing demands placed on boards of health despite stagnant resources. In response, two years later, the Massachusetts Public Health Regionalization Working Group was formed, based at the Boston University School of Public Health. The Working Group has had some significant successes. With the support of key legislators, in 2008, it persuaded the

Massachusetts General Court to amend M.G.L. Chapter 27C to streamline the legal process for creating Regional Health Districts. It developed a theoretical framework and core principles for increasing cross-jurisdictional sharing (see below). And it advanced understanding of the mechanics of collaboration by advocating for two pilot programs testing different CJS structures.

MASSACHUSETTS PUBLIC HEALTH REGIONALIZATION WORKING GROUP KEY PRINCIPLES

1. The system must respect existing legal authority of local health (home rule).
2. As a voluntary initiative, communities need incentives, not mandates, to participate.
3. One size does not fit all; different models of regional structures and operations will allow communities to cluster in ways that will meet their needs.
4. The system will require adequate and sustained state funding.
5. The system will augment, not reduce, the existing local public health workforce.

The first pilot study was run by the Working Group itself. In 2009, with \$3000-per-site funding from the national Public Health Practice-Based Research Networks, it financed 20 cities and towns to create plans for shared services. Each of the three districts had a slightly different organizational structure. Many lessons were learned in the process, including that all players should have clear roles and responsibilities and decision-making should be broken into steps. They also learned that cross-jurisdictional sharing is not to be taken lightly!

The second pilot study was run by DPH. It came out of further Working Group recommendations that were adopted wholesale by a 2010 regionalization advisory commission to find ways to reduce the cost of providing local services after the 2007-2009 recession. Measures included removing the requirement for a town meeting vote to form a public health district—an amendment that was made on November 7, 2016; reopening DPH’s Office of Local and Regional Health, which had been closed in 1990—it was reopened in October 2013; and funding six public health regional collaborations as an additional pilot study.

In 2010, through the CDC's National Public Health Improvement Initiative program, DPH awarded a total of \$276,000 in Public Health District Incentive Grants (PHDIG) for planning to 11 proposed public health districts covering 114 municipalities and a total population of 1.7 million. After the planning phase, DPH awarded \$325,000 more for first-year implementation for five of the proposed districts, representing 58 cities and towns and over 800,000 people. The grantees were charged with developing plans in one of three models: consolidated districts, shared services, or contracting for certain services. Each received four years of implementation funding at declining amounts in years three and four. With small alterations in composition, all five of these experiments in cross-jurisdictional sharing continue functioning today, more than three years after the grant program ended. Throughout the program, DPH provided technical assistance and resources such as templates and models for needs assessments, evaluations, and legal documents. (A map of the public health districts and other shared services arrangements is provided in Appendix E.)

The results were impressive. The PHDIG program more than doubled the number of Massachusetts municipalities in public health districts or shared services arrangements from 50 (14%) to 112 (33%). It nearly tripled the Massachusetts population served by some form of CJS arrangements from approximately 450,000 residents (7%) in 10 districts to approximately 1,250,000 residents (19.5%) in 15 districts. While it is important to note that not all of these shared services arrangements represent a comprehensive approach, this is still an impressive increase in the number of municipalities that participate in some form of cross-jurisdictional sharing. One of the funded districts, the Central Massachusetts Regional Public Health Alliance, under the leadership of the Worcester Division of Public Health, became the first public health department in Massachusetts to be accredited by the Public Health Accreditation Board (PHAB). Finally, over the course of the program, the 58 participating cities and towns showed the following improvements in a sample of compliance measures:*

- An increase from 43% to 73% in the percentage of municipalities that met the state mandate of two inspections per year per food establishment.
- An increase from 55% to 96% of the percentage trained and using MAVEN, the state’s electronic infectious disease epidemiologic surveillance and reporting database.
- An increase from 74% to 97% of the percentage that had the capacity to conduct their own lead determination during housing inspections (without relying on DPH inspectors).
- In addition, each of the districts was successful in obtaining new funding from federal, state, or foundation sources.

*Compliance was a condition of the implementation grant.

SUMMARY OF PHDIG IMPLEMENTATION DISTRICTS (AS OF MARCH 2019)

District	Population*	Municipalities
Berkshire Public Health Alliance	109,243	24
Cooperative Public Health Service	15,501	12
Central Massachusetts Regional Public Health Alliance	291,364	7
Montachusett Public Health Network	158,248	11
North Shore Shared Public Health Services Program	296,400	8
Total	870,756	62

*2010 U.S. Census

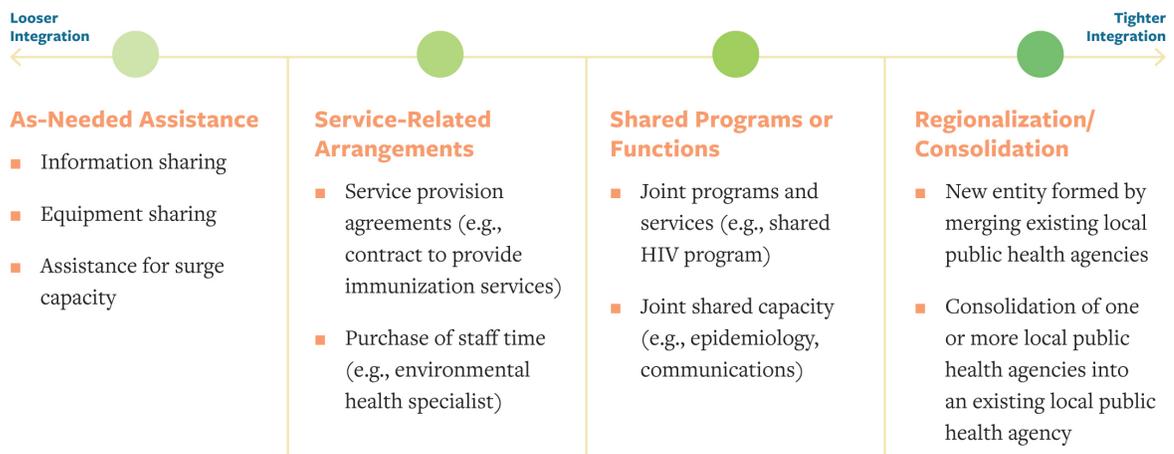
LESSONS LEARNED FROM PHDIG PILOT DISTRICTS

- Cross-jurisdictional sharing improves public health protections and services.
- Involve key stakeholders early in discussions on shared services.
- Strive for consensus in vision and goals from the beginning.
- Design a realistic and responsive structure that can grow over time.
- Emphasize sustainability, management, and long-term planning.

These changes to Massachusetts' local public health system have not been made in a vacuum. Other states, such as Colorado, New Jersey, Texas, Washington, Ohio, and Connecticut, have also instituted cross-jurisdictional sharing, and the Commonwealth can learn from their experiences as well, although there are frequently important basic differences, such as state funding for local public health services and county, rather than municipal, boards of health.¹² The national Center for Sharing Public Health Services (CSPHS) has compiled case studies and offers models including a spectrum of cross-jurisdictional sharing arrangements, tools, and technical assistance for cities and towns exploring cross-jurisdictional sharing (Appendix D). One lesson learned is that flexibility about structure is an asset, as it allows authorities to choose the organization that best accommodates local and regional needs and strengths. In Massachusetts, for example, service collaborations vary from inter-municipal agreements (the Melrose and Wakefield health departments); a host agency that covers multiple towns (the Berkshire Regional Planning Commission) and the Franklin Regional Council of Governments); or contracts with a consultant (Eastern Franklin County Health District). A corollary is that public health resource sharing works best when coupled with alliances that honor community choice, including for reasons other than geographic proximity.

¹² Some states have minimum population and/or land area sizes for health districts. This idea of a 50,000 population or 155-square-mile land area minimum for Massachusetts was explored and discarded by the Public Health Regionalization Project so as not to infringe on local autonomy to choose partners.

SPECTRUM OF CROSS-JURISDICTIONAL SHARING ARRANGEMENTS (Figure 1)



Reprinted with permission from the Center for Sharing Public Health Services. "Spectrum of Cross-Jurisdictional Sharing Arrangements." Topeka, KS: June 2019.

While considerable progress in cross-jurisdictional sharing has been made, Massachusetts' local public health system remains a patchwork. Less than one-third of municipalities and one-fifth of residents are currently covered by public health districts and other shared services arrangements, with many residents not receiving a comprehensive set of services and protections. This leaves the vast majority of the state's inhabitants still reliant on standalone local health departments, many of them small, underfunded, and short-staffed. While some municipalities are able to provide comprehensive public health services on their own, the situation is much more challenging for the 105 Massachusetts towns with fewer than 5,000 residents: 78% have no full-time public health staff, 58% have no health inspector, and 90% have no public health nurse, according to the 2009 Massachusetts Public Health Regionalization Project Status Report.

Most Massachusetts' boards of health already know their neighbors and have indicated they would like to work more closely with them. In a 2008 meeting of 250 public health officials and staff, "85% indicated they have working relationships with

neighboring health departments/health boards, and 75% agreed or strongly agreed that regionalization of public health services is the right approach to enhance the delivery of public health services to Massachusetts residents.” Until recently, however, when that cooperation has been formalized, cross-jurisdictional sharing has most often been in response to a crisis such as the contaminated dairy that sparked the 1929 creation of the Tri-Town Health Department or the improper disposal of hazardous waste that prompted the 1980 founding of the Quabbin Health District. It is now time for local public health cross-jurisdictional sharing in the Commonwealth to move beyond ensuring that minimum safeguards and protections are in place to exploring how different CJS models might be applied to elevate the health and wellbeing of all the state’s inhabitants, no matter how small or economically disadvantaged their cities and towns. Further cross-jurisdictional sharing is the natural next step in the evolution of Massachusetts’ local public health system.

CROSS-JURISDICTIONAL SHARING

Key Findings

- Massachusetts has more local public health jurisdictions than any other state (351)—one for each city and town—and cross-jurisdictional sharing of services is limited despite evidence that it improves effectiveness and efficiency.
- While other states have county or district-based systems, most Massachusetts municipalities operate standalone health departments that are unable to keep up with the growing list of duties.
- Massachusetts and national evidence supports cross-jurisdictional sharing as a means to improve the effectiveness and efficiency of the Massachusetts local public health system.

Recommendation

Increase cross-jurisdictional sharing of public health services to strengthen the service delivery capabilities of local public health departments, take advantage of economies of scale, and coordinate planning.

- Increase the number and scope of comprehensive public health districts, formal shared services agreements, and other arrangements for sharing public health services.

Action Steps

- Support planning and implementation of new public health districts that meet Commission workforce standards in areas in which municipalities are not meeting statutory and regulatory responsibilities.
- Support expansion of existing districts that meet Commission workforce standards to add additional municipalities or create more comprehensive sharing of services.
- Support the formation of cross-jurisdictional sharing and expansion of districts that are meeting current standards to include services that are aligned with the FPHS model and workforce standards.
- Encourage innovative partnerships that enhance local capacity to align with best practices and the FPHS model.

Data Reporting and Analysis

Boards of health are responsible for an astonishing amount of paperwork. They maintain three dozen different kinds of records, according to the Massachusetts Association of Health Boards, on everything from summer camps and ice skating rinks to cemeteries and septic systems. They investigate cases of communicable diseases. They review subdivision plans and process waste disposal applications. They grant permits to restaurants and egg, milk, and carbonated beverage plants. They evaluate each food establishment twice a year on over 50 safety standards and track the results. But while municipalities are awash in information, only a very small part is required by statute or regulation to be reported to DPH. Omitted are many measures vital to statewide monitoring and planning, including housing inspections, housing code enforcement cases, the results of any food inspections, septic code enforcement, and soil evaluator certification, to name a few. The incomplete picture also impedes the state's ability to

support the local public health system by evaluating its performance, comparing peers,

Massachusetts Virtual Epidemiologic Network

Approximately 90 diseases and conditions must be reported to DPH and local boards of health by healthcare providers and laboratories, generating almost 200,000 disease reports a year. In the past, reports went directly to a corresponding DPH program and were entered into separate databases. Hard-copy reports were then forwarded to the local boards of health for follow-up. The process was slow and inefficient, which, in times of crisis, had the potential to cost lives. This changed in 2006 when the Massachusetts Virtual Epidemiologic Network (MAVEN), a web-based surveillance and case management system, was launched. MAVEN allows DPH, the state public health laboratory, and local public health authorities to communicate in real time about infectious disease.

In 2011, Massachusetts began to require that local boards of health use the system for surveillance and case investigation. The use of MAVEN has increased the potential to quickly investigate infectious disease, protecting the public's health and containing outbreaks. Today, 326 of 351 Commonwealth cities and towns have logged onto and use MAVEN. The municipalities that do not use MAVEN at all or do not use it regularly often have capacity issues such as the cost of broadband to access the network and/or insufficient staff. Although these numbers are small, they put all residents at risk, as infectious disease does not respect municipal boundaries.

Currently, there are an estimated 800 open cases on MAVEN. DPH supports full compliance with MAVEN procedures by providing training and ongoing technical assistance throughout the state.

identifying service gaps, and making the case for additional resources.

Public health depends on data—its collection, its analysis, and its interpretation. From John Snow's 1854 mapping of cholera cases to track the outbreak to a dirty diaper washed in a London-area well to the estimated \$230 billion reduction in direct medical costs if minority health disparities were eliminated in the United States,¹³ practitioners identify and address problems by creating pools of information. Yet despite this importance, public health informatics—the acquisition, storage, and use of information to improve population health—is still a very young field and most boards of health lack the knowledge and skilled staff to maximize its benefits for residents. In fact, they are often still struggling with the basics.

“Smart public health decisions depend on the right data getting to the

¹³ Graham, Garth. “Disparities in cardiovascular disease risk in the United States” *Current Cardiology Reviews* 11, no. 3 (2015): 238–45.

right people, at the right time, and in a form they can use.”¹⁴ While the use of technology and computing has spread as a whole, many local public health departments have not kept pace. Most must report immunization, disease surveillance, and other information online, and interact with electronic health records (EHR) and other databases. DPH has made a substantial investment in the development of the Massachusetts Virtual Epidemiologic Network (MAVEN) and the Massachusetts Immunization Information System (MIIS) to provide ready electronic tools to local public health for infectious disease surveillance and immunization tracking. But without hard and soft infrastructure and the knowledge base to use both, even these compulsory tasks may not be performed well—which means the data is not being used to better understand and serve local populations.

REQUIRED REPORTING BY BOARDS OF HEALTH TO DPH

- Massachusetts Virtual Epidemiological Network (MAVEN) (as needed, according to diseases reported in that municipality)
- Massachusetts Immunization Information System (MIIS) (as required by statute and regulation)
- Responses to Health and Homeland Alert Network (HHAN) drills and emergency dispensing site plans (as needed, at least quarterly)
- Retail food inspection reports (annually)
- Beach and drinking water testing results (annually)
- Basic information on licensed recreational camps for children (annually) and camper injury reports (as needed)
- Name and town of employment for certified Lead Determinators

Local health departments in Massachusetts implement and enforce regulations from both DPH and DEP. Yet neither DPH nor DEP have a comprehensive system for processing and analyzing information about how well local health departments are

¹⁴ Kansas Health Institute, Public Health Informatics Workgroup. “Final Workgroup Report (KHI/17-26).” Topeka, KS: October 2017.

protecting the public. Forms are available on a multitude of DPH, DEP, and other websites. Reports are completed on paper and electronically. While MAVEN and MIIS have eliminated the bulk of paper-based processing, many other reports are mailed, faxed, or emailed to the different state programs that oversee sanitation, the environment, housing, and health. The current diffuse system is cumbersome, susceptible to errors, discouraging to users (accounting for low rates of completion) and difficult to manage. It will be unable to meet the increased demands if the Commonwealth adopts the more rigorous Foundational Public Health Services (FPHS). Nor does the current system provide the legislature, local officials, DEP or DPH with the tools to quickly spot and address statewide, regional, or local issues.

The state-level piece of the information picture is also incomplete. The various bureaus, offices, and programs of DPH and DEP manage a wide range of data that could inform and improve local health department planning and decision-making, from cancer incidence to deaths from a myriad of diseases. Categorical grants programs such as tobacco control, substance addiction, emergency preparedness, and DEP recycling have a data component that could be used to identify trends and project future needs. DPH also collects detailed morbidity and mortality data. All of these data sources could, singly or in tandem, contextualize issues and improve local health department responses.

There are three significant—but not insurmountable—obstacles to making that data readily available. First, under current laws and regulations, local health departments are only mandated to report to the state on five of several dozen important public health protections and face no consequence if they do not. This leaves officials and policymakers with more questions than answers, a sample of which are below. Second, the information that is reported must be verified by DPH before it can be released, a time-consuming process that may delay the availability of data sets by up to two years and sometimes beyond. Third, DPH does not currently have sufficient staff or resources to serve as a data hub, a function that would include the ability to inventory all the types of local health department data available, identify the ones that most contribute to resident

health, and perform ongoing data collection, cleaning, analysis, and related communications.

IMPORTANT QUESTIONS THAT CANNOT BE ANSWERED WITH EXISTING DATA REPORTING REQUIREMENTS

- How many towns have food inspectors that meet the current food code and DPH training standard?
- What kinds of food violations are being found across the state?
- How many foodborne illness reports were traced to restaurants and then how many of those were inspected appropriately by qualified personnel?
- What percentage of municipalities on MAVEN has an RN or MD reviewing the reports?
- How many cities and towns go on MAVEN daily and complete case follow up as required?
- Which municipalities actually meet the state requirement to have lead determinators?
- Are lead determinations done on every housing inspection involving a child under 6, as required to protect children from lead poisoning?
- How many towns with Emergency Dispensing Site plans have integrated it into the town's Emergency Plans (e-CEMP)?
- How many towns have a Title 5 Inspector?
- How many towns have a Soil Evaluator?
- How many septic systems are being given local approval that do not meet one or more Title 5 requirements?
- How many housing inspections are done on unsafe housing in the state and what are the violations?
- How often are housing cases brought to court and what is the outcome?
- How many towns have updated private well regulations?

Municipalities are not only challenged by providing required reports to DPH and DEP. Nationwide, there's been a sea change in the way local public health practitioners use data, moving from a "consumer," collecting data and generating statistics, to a "broker" role sharing data with other sectors, such as housing, education, business, and others, to address social determinants of health. While Massachusetts may not yet be ready for this transition, when it is, the ability to partner will be key. State, regional, and some local boards of health must now seek out, facilitate interoperability, and coordinate the mining of a variety of sources, whether to make clinical decisions, heighten awareness of issues, or assess community needs. "One result of these trends is increased pressure on

public health agencies to electronically exchange data using health care standards. Data are now arriving from more sources and at faster velocities. “Agencies face the daunting challenge of effectively processing the information, separating the ‘data wheat from the chaff,’ given the high ‘signal-to-noise ratio’ in these new data sources,” states a 2014 article in the *Journal of Public Health Management Practice*. This need has been exacerbated by the federal transition to “e-public health” promoted by the Affordable Care Act and HITECH Act and the proliferation of healthcare entities such as accountable care organizations (ACOs) and health IT vendors.

As part of its work, the Commission’s Data Subcommittee examined the most recently available data to assess local public health capacity to carry out statutory duties. The hope was that this might serve as a proxy measure for health department capacity and performance. The results of the data gathering and analysis effort were largely inadequate. Response rates were low—for example, only about one-third of all boards of health submit an annual report of retail food inspections—and the ability of DPH to follow up was limited. It should be noted that the state programs that did make follow-up calls had better rates of compliance, as did local health departments that received state and federal grants. For example, the Bureau of Environmental Health uses follow up to achieve approximately 98% reporting by recreational camps and 96% reporting for beach data. By contrast, DPH may have to make multiple outreach efforts to get even partial data collection from some cities and towns, making it prohibitively staff and time intensive. Some categories of information had to be dropped out entirely. Consequently, the Data Subcommittee concluded that, although the survey was illustrative, any statistical analysis would be inappropriate. Nonetheless, an important next step in the improvement of Massachusetts’ local public health system is a robust capacity assessment as has been done in other states to determine if it can deliver the FPHS services model.

Many other states are further along in the evolution of local public health informatics than Massachusetts. This includes Colorado, Connecticut, Kansas, New Jersey, Ohio, and Oregon. Many of them have implemented mandatory local health

“report cards” that can be reviewed by state and local administrators, the state legislature, and consumers. Our southwestern neighbor, Connecticut, provides a good example. Local health departments, as a condition of state funding, are required to complete an annual online survey that compiles information about 16 different health department functions and the 10 Essential Services. This has resulted in higher rates of reporting, with “82% of full-time municipal health departments, 85% of health districts, and 37% of part-time local health departments report[ing] they have collected primary quantitative data.” Connecticut also incorporates informatics into evaluation—a full 95% of health districts and 73% of full-time municipal health departments have conducted program evaluations—and research, both foundational capabilities. New Jersey, Ohio, and Oregon also require annual local health department report cards.

Kansas serves as a model of a state that determined that its own local public health data capabilities were inadequate and, through its Kansas Health Institute, Public Health Informatics Workgroup, developed a roadmap for improving them. The two major components of this multi-year project merit consideration in Massachusetts. First, the Workgroup, whose members came from state and local government, academia, and nonprofits, created an informatics evaluation tool for local boards of health based on the Public Health Informatics Institute’s (PHII) Informatics-Savvy Health Department Self-Assessment Tool. They then worked with local health departments around the state to support them in administering and scoring the instrument. Second, they conducted an inventory of public health data sources in Kansas to serve as a central online resource for practitioners, policymakers, researchers, and the public. The Workgroup process also helped Kansas more clearly define leadership roles, either for state government or allied organizations, in improving local public health department informatics.

At the national level, surveys of local health departments have shown that while public health remains data-driven, data infrastructure and data-related workforce capacities remain undeveloped. A 2013 study involving key informant interviews with 50 local health department executives nationwide (Practitioner Perspectives on Foundational

Capabilities), underscored the importance of informatics and data analytics in the modern local health department. The practitioners said that “assessment [w]as integral to everything they do.” Local health departments across the country are eager for more data-related training and professional development, especially in using and interpreting data, according to a 2015 countrywide survey conducted by National Association of County and City Health Officials and Georgia Southern University.

Adopting higher standards such as the Foundational Public Health Services will create an even greater demand for informatics proficiency, both in public health and in informatics staff. Assessment, which is founded on data collection, analysis, and interpretation, is among the seven foundational services capabilities. It is critical to surveillance, program evaluation, and research, as well as other public health functions. As is appropriate for a discussion of technology, its increased use in training should also be considered. The Commonwealth is well positioned to act as a nexus for all these needs and resources as its local public health system adds informatics capacities to their toolkits for safeguarding and improving the public’s wellbeing.

DATA REPORTING AND ANALYSIS

Key Findings

- Because Massachusetts lacks a comprehensive system to collect local public health data, there is limited capacity to measure system performance and to use local data to plan public health improvements.
- The best practices for data collection and disease surveillance in Massachusetts and other states hold promise for improved data reporting and gathering capabilities.

Recommendations

Improve state and local public health departments’ planning and system accountability by:

- Creating a standardized, integrated, and unified public health reporting system, and
- Strengthening the DPH, DEP, and local public health capacity to collect, analyze, and share data.

Action Steps

- Explore the public health data reporting systems used in other states as a possible model for Massachusetts.
- Develop state program reporting requirements, including a regional reporting feature,

- and work with LPH to ensure the system is user-friendly and relevant.
- Explore cost-effective ways of using technology to improve the state system for LPH reporting, such as the use of interoperable reporting systems, a single portal for reporting and viewing data, or building on existing efficient and user-friendly state municipal reporting models.
 - Create or ensure that data that is collected by the state from LPH is accessible in a timely and relevant way, supporting the significance of leading with data by sharing and using real-time data.
 - Determine strategies to:
 - Train and provide technical assistance to the workforce to ensure it has the capacity to collect, report, analyze, and interpret data.
 - Assess what funding is needed to implement this data reporting system.
 - Leverage community partnerships.
 - Promote regional collaboration.
 - Encourage online reporting and online permitting.
 - Once critical data is available, request that DPH and DEP provide a regularly scheduled report on the state of local public health protections to the legislature and municipalities.

Workforce Credentials

Over the past century, the public health landscape has evolved dramatically. One hundred years ago, the biggest threats were contagious diseases, bacterial contamination, and adulterated food and beverages. Local boards of health have had a large role in successfully vanquishing, diminishing, or, controlling these problems. That is not to say, however, that they currently require less time and attention. They do not; in fact, addressing these basic issues has been and continues to be at the core of the health department mission, one that some health departments, especially those that are small and rural, struggle to meet. Today, however, new challenges have arisen that compound their responsibilities. “[N]oncommunicable diseases, which accounted for less than 20%

of US deaths in 1900, now account for about 80% of deaths,” according to Thomas R. Frieden in his 2004 *American Journal of Public Health* editorial, “Asleep at the Switch: Local Public Health and Chronic Disease.” Not only have diabetes, cardiovascular disease, hypertension, and hyperlipidemia reached epidemic proportions, but cities and towns must cope with new and emerging infectious diseases such as West Nile and Lyme Disease and the aftermath from floods, hurricanes, fires, accidents, and other disasters. The tools of 20th-century public health—surveillance, vaccinations, and inspections—while still vital to maintaining community safety, are inadequate to keep these problems in check.

The National Association of County and City Health Officials 2018 *The Forces of Change in America’s Local Public Health System*, a periodic survey of health departments around the country, documents the divide between problems and proficiencies. They found that how comprehensive a health department’s response to modern, complex issues such as the opioid crisis, population health, and climate change is linked to the skills and training, both basic and continuing, of their workforces.

Opioid epidemic Ninety-two percent of large health departments (representing 500,000 people or more) around the country had opioid-related strategies, while only 52% of smaller ones (under 50,000) did. Of those that did not create strategies, 53% cited a lack of staff expertise and training.

Population health Almost 75% of boards of health across the United States conducted activities to address food insecurity, most often in partnership with local and state government agencies and non-profits.

Electronic surveillance system While 34% of large health departments nationally had real-time access to hospital emergency department data, only 6% of smaller ones did. One-third of all health departments indicated that their IT/informatics staff needed professional development.

Climate-change-related threats Only 42% of all agencies dealt with vector-borne infectious diseases as an emerging concern related to climate change, and 59% provided vector control services overall.

The 21st-century public health landscape requires a 21st-century mindset in its practitioners, one that is based on broad and continually updated knowledge and a creative approach to systemic, long-term, and intractable issues. Unfortunately, few cities and towns in Massachusetts—and the country—have the resources to keep up with these increased responsibilities. In 2016, in response to the shifting demands placed on public health officers (PHOs), the U.S. Department of Health and Human Services launched Public Health 3.0, calling for the addition of a strategy component to the PHO skill set. This component would enable directors to assess the local institutional landscape, create innovative partnerships and novel programs, and find and assemble new funding sources. But while strategic thinking may help local boards of health aim for and meet the higher standards of Foundational Public Health Services (FPHS) or the Public Health Accreditation Board (PHAB) in the future, there are still no minimum national criteria to ensure staff have the baseline skills and competencies to safeguard America's health today.

Many of our cities and towns are not set up to address 21st century challenges. In Massachusetts, the town level structure and lack of a standard for experience, training, credentialing, and staffing for board of health members and health department staff creates differences in local public health capacity across the state. Where you live determines not only the depth and breadth of public health protections that are available, but also the qualifications of the individuals providing the services. The issue affects us all: While hiring decisions are made at the local level, the consequences of not having adequately prepared staff in one town can impact other towns or the whole state, for example, in cases of food poisoning or when a contagious disease breaks out.

The average Massachusetts health department is small: 50% have an annual budget of \$100,000 or less and 31%, \$50,000 or less, according to the Commission's Workforce Credentials Subcommittee's 2018 survey, described below. Staff may include directors or commissioners, assistant or deputy directors or commissioners, health officers, inspectors or sanitarians, public health nurses, clerical staff, and boards of health

members. None of these positions (with the exception of the nursing credentials required for public health nurses) currently has state-level guidelines for education, training, or credentials. This is in contrast to other municipal officials, such as building commissioners and library directors, all of whom are required by Massachusetts state law to be certified or licensed. The consequence is that the local public health workforce is a grab bag of trained and experienced staff, untrained and inexperienced staff, contractors, volunteers, and board members who, regardless of professional background, may fill in as needed.

The personnel crisis tends to be even worse in small towns and rural areas, hamstrung by small budgets, geographic isolation, and a lack of infrastructure. Lower salaries and part-time positions make it challenging to recruit and retain employees with cutting-edge public health training. Those who are hired and want to acquire or update credentials may have difficulty doing so. They may have to travel long distances to attend classes, multiplying the hours taken from paid employment, or simply lack the public transportation to do so. Old computer equipment and intermittent or nonexistent broadband internet service may limit long-distance learning.

In its 2018 survey, the Commission's Workforce Credentials Subcommittee gathered data from over 275 local boards of health on staff positions and qualifications, training and training budgets, staffing budgets, permits, and inspections. It found differences in service delivery resulting from disparities in support and funding and the lack of workforce standards. The subcommittee concluded from its survey and other studies that the following contributed to those disparities:

- Lack of incentives or penalties for ensuring a qualified staff;
- Limited return on investment for individuals investing in training and credentialing; and
- High turnover, high rates of retirement, and challenges in recruitment and retention.

Overall, the health districts and other shared services arrangements in the survey (11 of 15 statewide) outperformed the standalone health departments, with a higher rate of certified and credentialed staff and better pay for management and clerical staff. The survey also revealed that most Massachusetts boards of health have little or no budget for professional training, often lack coverage for staff to attend training, face long travel times to training programs, and have limited internet access to online training. In some cases, boards of health so poorly understand their role that they simply do not know what they need to know.

**LOCAL PUBLIC HEALTH WORKFORCE SURVEY
KEY FINDINGS ON CREDENTIALS**

Credential	Standalone Municipalities	Districts
Registered Sanitarian (RS)	55%	73%
Registered Environmental Health Specialist (REHS)	21%	18%
Certified Health Officer	27%	45%
Nurse with BSN	45%	77%
Soil Evaluator	72%	82%
System Inspector	64%	82%
ServSafe® or similar	86%	91%
MA Public Health Inspector Training (MAPHIT): Housing Training	50%	45%
MA Public Health Inspector Training (MAPHIT): Food Protection Training	36%	55%
ICS 100	80%	100%

Lead Determinator	51%	82%
Certified Pool Operator (CPO) or Certified Pool Inspector (CPI)	64%	91%
Local Public Health Institute Foundations Class	37%	55%

The Massachusetts local public health system does not adequately support the local public health workforce with standards and credentials that align with the capacity to meet current mandates and future standards. However, the survey revealed good news: Many members of the local public health workforce are already well prepared for their positions—particularly those working in health districts. In its deliberations on workforce standards, the Commission sought to codify this best practice by recommending a complete set of training, education, and credentials for core health department positions. These are detailed in the following tables. (It should be noted that municipalities may ask for waivers for staff who have been employed in a local public health position for at least seven years.)

Setting standards is the first step in ensuring an adequately educated workforce; developing the infrastructure to deliver this training is the second. Although the Commonwealth’s over one hundred colleges and universities offer many undergraduate degrees related to healthcare, medicine, and the biological sciences and postgraduate study in public health or its administration, there are no undergraduate majors or programs in municipal health. Similarly and related, when university programs place students in internships, they rarely partner with local public health departments. This means there is no pipeline of students field-trained to inspect food preparation facilities, housing, waste disposal, and chemical hazards, or support other local public health needs. This problem will be exacerbated by the large number of experienced workers who are

SPECIAL COMMISSION ON LOCAL AND REGIONAL PUBLIC HEALTH
EDUCATIONAL, TRAINING, AND CREDENTIALING RECOMMENDATIONS

POSITION	REQUIRED AT HIRE	REQUIRED AFTER HIRE	RECOMMENDED
MANAGEMENT – e.g., Director, Assistant Director, Deputy Director <i>Management position does not do inspections but supervises those who do.</i>	<ul style="list-style-type: none"> Registered Sanitarian or equivalent eligible* Master’s in relevant field or BA/BS with 5 years of relevant experience 	<ul style="list-style-type: none"> RS or equivalent within a year* Foundations for Local Public Health Practice (“Foundations”) course within one year of hire CHO within 3 years of hire Complete Master’s within 5 years 	<ul style="list-style-type: none"> Health Association membership LPHI Managing Effectively in Today’s Public Health Environment (“Management”) course Three years of experience in local or state public health MAVEN training within one year
MANAGEMENT/AGENT	<ul style="list-style-type: none"> Registered Sanitarian or equivalent eligible 	<ul style="list-style-type: none"> Foundations course within 18 months RS within 18 months of hire Specific certifications for inspections performed, such as soil evaluator, system inspector, food inspector training, housing inspection training, certified pool operator/certified pool inspector, lead determinator within one year of hire 	<ul style="list-style-type: none"> Health Association membership LPHI Management Course CHO within 3 years of hire
INSPECTOR/SANITARIAN	<ul style="list-style-type: none"> High School Diploma or equivalent 	<ul style="list-style-type: none"> RS within 6 years of hire Foundations course within 18 months Specific certifications for inspections performed, such as soil evaluator, system inspector, food inspector training, housing inspection training, certified pool operator/certified pool inspector, lead determinator within 1 year of hire 	<ul style="list-style-type: none"> Health Association membership Associates degree in science or public health, at hire.
PUBLIC HEALTH NURSE	<ul style="list-style-type: none"> Bachelor of Science in Nursing (BSN) Registered Nurse (RN), current MA license Microsoft Office (or similar) applications 	<ul style="list-style-type: none"> MAVEN trained within 6 months Foundations course within one year of hire 	<ul style="list-style-type: none"> MAPHN Membership
CLERICAL STAFF		<ul style="list-style-type: none"> Modified Foundations course (Foundations course for Clerical Workers) within one year of hire 	<ul style="list-style-type: none"> On-line permitting
BOH MEMBER (NOTE: IF DOING INSPECTIONS MUST MEET REQUIREMENTS ABOVE)			<ul style="list-style-type: none"> Orientation to Public Health within 3 months Foundations course within one year

INSPECTION TYPE	REQUIRED	RECOMMENDED
FOOD PROTECTION	<ul style="list-style-type: none"> • ServeSafe or similar • Massachusetts Public Health Inspector Training (MA PHIT) Food Inspection Class • Field Component 	<ul style="list-style-type: none"> • Food and Drug Administration/Office of Regulatory Affairs - University (ORAU)
HOUSING	<ul style="list-style-type: none"> • MA PHIT Housing Class • Housing Court training (TBD) • Lead Determinator • Field Component 	<ul style="list-style-type: none"> • Relevant LPHI Modules
TITLE 5	<ul style="list-style-type: none"> • Soil Evaluator • System Inspector • MA PHIT Wastewater • Field Component 	<ul style="list-style-type: none"> • Relevant LPHI Modules
POOLS	<ul style="list-style-type: none"> • Certified Pool Operator or Certified Pool Inspector with Field Component 	<ul style="list-style-type: none"> • Relevant LPHI Modules
RECREATIONAL CAMPS	<ul style="list-style-type: none"> • MA PHIT Camps (TBD) with Field Component 	<ul style="list-style-type: none"> • Relevant LPHI Modules
TANNING/BODY ART	<ul style="list-style-type: none"> • MA PHIT (TBD) with Field Component 	<ul style="list-style-type: none"> • Relevant LPHI Modules
NUISANCES	<ul style="list-style-type: none"> • MA PHIT (TBA) with Field Component 	<ul style="list-style-type: none"> • Relevant LPHI Modules

- All personnel should have at least ICS 100/NIIMS 700 within one year of hire. Those who might have a leadership role should have ICS 200 and above.
- Boards of health may have stricter requirements, but must meet these requirements.
- Boards of health with current staff who have worked for local or state public health for at least 7 years, but who do not meet these requirements, may request a waiver except for inspectional trainings.
- Membership in professional organizations is deemed as critical for professional growth and development, for leadership and mentoring opportunities, and for opportunities for sharing best practices. This is recommended, but not required.

*Management positions should meet the requirements as set forth in this document for the position. However, a request may be submitted by the board of health to waive the Registered Sanitarian (RS) requirement if

- 1) the health department has a management position and a separate fulltime environmental health director and
- 2) the environmental health director has an RS, oversees the inspectors, and reports directly to the management position.

expected to retire in the next few years. However, once someone has become part of the local public health workforce, there are many voluntary training programs to choose from, including the Local Public Health Institute (LPHI) of Massachusetts, New England Public Health Training Center (NEPHTC), Massachusetts Health Officers Association (MHOA), Massachusetts Environmental Health Association (MEHA), Berkshire County Boards of Health Association (BCBOHA), Cape and Islands Health Agents Coalition, Massachusetts Association of Public Health Nurses (MAPHN), Massachusetts Association of Health Boards (MAHB), Western Massachusetts Public Health Association (WMPHA), DPH, and DEP. The DPH-funded Local Public Health Institute at the Boston University School of Public Health offers online, web-based, and blended classroom training. The Coalition for Local Public Health (CLPH) provides orientations for public health professionals and the CLPH member organizations; each run training programs for the public health workforce. Unfortunately, because these opportunities—which often include continuing education credits to maintain credentials current—are voluntary, they may only serve to widen existing disparities since, when combined with work demands, distance, and other impediments, those who could most benefit often cannot or do not attend.

Massachusetts' public health worker training programs have made a concerted effort to remove barriers. Online modules are free and other training programs have a modest fee, although the health department must bear the soft costs of travel and time out of the office. The Local Public Health Institute (LPHI) offers nearly 50 free online modules on a wide range of topics, although they are not a substitute for critical and expensive field training. A blended course with both classroom and online instruction that provides a foundation for public health practice quickly fills to capacity whenever it is offered. Several organizations offer seminars in Western Massachusetts to eliminate the four-hour round trip to the Boston area.¹⁵ And workers who have intermittent or no internet access can download modules on a disk or flash drives. While free and low cost

¹⁵ BCBOHA, WMPHA, FRCOG, MDPH Northampton.

training programs for the Massachusetts workforce exist, they are offered infrequently and only in a few parts of the state. Even these may not be feasible for small, rural health departments with a single or volunteer staff member for whom attending a training might mean leaving the office empty for a day or more or sacrificing his or her paid employment.

Other states, such as Colorado, Connecticut, Illinois, New Jersey, North Carolina, Ohio, Oregon, Texas, Washington, and Wisconsin, have a licensing and credentialing process for some local health department positions, generally the director/chief health officer, the environmental health inspector, and nurses. Some states require state approval for hiring a health director at the municipal, county, or health district level, generally when these are in part or wholly state-funded. New Jersey not only requires the health officer and the environmental health specialist to be licensed or registered, it also has specific educational experience requirements for different members of the workforce and boards of health. Ohio has required that all local public health departments be accredited by the year 2020, which includes demonstrating adequately trained staff to fulfill the PHAB requirements.

As it establishes credentials for the local public health workforce and assesses capacity for the Foundational Public Health Services, the Commonwealth should determine the size of the workforce needed to meet 21st century challenges. The National Association of County and City Health Officials report, *Local Public Health Workforce Benchmarks* (May 2011), was a key document reviewed by the Workforce Credentials Subcommittee. Its findings support the subcommittee's observation that most local health departments in Massachusetts are understaffed—a condition that will likely be rendered even more acute by the adoption of Foundational Public Health Services. As more local and regional public health jurisdictions attain accreditation status through PHAB, an analysis of agency staffing patterns will yield important information about the threshold required to deliver the full complement of services called for by FPHS.

Change is on the horizon. The Council on Linkages Between Academia and Health Practice is looking at developing national workforce standards and intends to develop core competencies for public health professionals that address the 10 Essential Health Services and the PHAB. The Council has begun the process of assessing and defining these for specific positions, such as public health nurses, performance managers, and health informatics. When this work is completed, the Commonwealth could evaluate its suitability for application in Massachusetts. Meanwhile, the Commonwealth's public health workforce itself has indicated that they are more than ready to implement workforce standards. At a 2008 meeting of 250 public health officials and staff, "92% indicated that the district workforce should meet minimum standards in education, experience, and credentials." The time to act is now.

WORKFORCE CREDENTIALS

Key Findings

- The Massachusetts local public health system does not adequately support its workforce with standards and credentials that align with the capacity to meet current mandates and future standards.
- While there is an emerging effort to set national workforce standards, many states already have minimum qualifications for some members of the local public health workforce. In Massachusetts, minimum qualifications exist for other municipal officials such as building commissioners and library directors.

Recommendations

Set education and training standards for local public health officials and staff and expand access to professional development while ensuring diversity by:

- Implementing the local public health workforce credentialing standards adopted by the Commission,
- Making training available and accessible to local public health departments, and
- Developing a system to track and monitor workforce credentialing.

Action Steps

- Develop the infrastructure for training and credentialing of the local public health workforce.
- Expand, coordinate and track training opportunities for local public health to ensure the ability of local public health professionals to meet the recommended requirements.

- Include data on the workforce and workforce development in the local public health reporting system in order to track credentialing and progress on meeting workforce standards.
- Work with stakeholder groups and schools of public health, state universities, community colleges, and other training entities to develop an infrastructure and pathway to a career in governmental public health, potentially including building on existing public health, public health management, informatics, epidemiology, and environmental health degree programs, promoting public health internships and practicums using LPH as teaching sites, and supporting academic health departments.
- Educate boards of health and municipalities on the required workforce standards and how they can meet them.
- Enhance the capacity of DPH to oversee the implementation of the workforce standards, including the waiver process and non-compliance.

Resources to Meet System Needs

Unlike most other states, in Massachusetts, local public health departments rely almost exclusively on local property taxes and fees for funding. By all accounts, many or most are already straining to provide necessary services. System-wide changes such as grants programs, technology, training, and technical assistance will clearly benefit individual cities and towns, but while municipalities have some incentive to financially support such efforts, the reality is they cannot. These changes will also, however, improve state-level outcomes, reducing health costs overall and helping to create a healthy workforce, indirectly bolstering the economy—a significant public good. It is therefore appropriate that the Commonwealth consider providing funding to modernize the local public health system so it can meet its existing mandates and the expanded expectations of the 21st century.

Health knows no borders. Diseases spread. Disasters, both manmade and natural, happen anywhere and everywhere. A child's visit to the emergency room for asthma—triggered by substandard housing—is paid for by all of us. The 2014 *Healthy People/Healthy Economy: Annual Report Card*, a partnership between the Boston Foundation and the Network for Excellence in Health Innovation (NEHI), itemizes the human cost of failing to safeguard public health at the local level. For example, a 2013 analysis by NEHI found that most determinants of health, 59%, have *nothing* to do with healthcare access: 37% are contributed by healthy behaviors and 22% by socioeconomic and physical environments. These three factors fall squarely within the purview of the municipal health department. Yet 90% of our \$2.6 trillion national health spending is still for medical services—with only 9% allocated for encouraging healthy behaviors. What would happen if more of this immense investment was made upstream? A relatively small increase in funding for local public health services seems likely to yield large savings later on—this is especially important at a time when healthcare costs are projected to balloon to \$2.9 trillion by 2028, almost 10% of the federal budget, according to the Congressional Budget Office, Office of Management and Budget.

Local public health budgets in Massachusetts vary wildly and are almost always subject to the many and competing demands of other municipal departments. Bigger and wealthier municipalities may spend up to \$25 per capita annually. But the half of all Massachusetts health departments that represent towns of less than 10,000 residents, gateway cities, and municipalities with funding shortfalls face significant challenges with resources. As part of its charge, the Commission's Resource Subcommittee evaluated Massachusetts Department of Revenue (DOR) municipal expenditure data (Schedule A) from 2006-2016. But because there is no standard reporting for local public health department budgets, the value of this analysis is very limited. DPH and the federal government, directly or as a pass-through from DPH, offers local health departments categorical grants to achieve some specific goals such as smoking cessation or obesity prevention. However, not every local health department benefits from external funding,

in part due to differences in capacity to compete for a limited pool. For example, the 2006 Coalition for Local Public Health Call to Action found that 40% of local public health authorities received state funding for special projects (often through collaboration with multiple jurisdictions) and an additional 15% also received federal funding in 2005. Most other states provide direct aid to local health departments. Massachusetts does not, making any funding comparisons difficult. The Commonwealth does, however, offer more than \$1 billion in Unrestricted General Government Aid (UGGA) to city and town governments,¹⁶ a revenue source that can be used for any local purpose. While helpful, unrestricted local aid is not a reliable way to finance health departments, since municipalities allocate funds according to current priorities and the health budget may be increased or decreased to reflect these, affecting the agency's functioning. Many other local government departments in Massachusetts, such as schools, libraries, and councils on aging, have dedicated state funding, which allows them to consistently provide high-quality services to residents and to plan and carry out long-term projects. This type of stable resource should be considered for the local public health system.

It is also difficult to compare resources in Massachusetts to those of other states because not all states organize local public health the same way. Some states run local health departments themselves (centralized model), others share responsibilities with the municipalities, and others have a mixed model. Even when, as in the Commonwealth, these functions are all locally delivered, no other state has hundreds of municipalities and many have an overlay of strong county governments. However, there are some lessons to be learned by examining their different structures, financing mechanisms, state-local relationships, and standards.

Two states, Connecticut and Ohio, deserve a closer look. Connecticut is somewhat similar to Massachusetts in that it has a mixture of standalone departments and health districts, but they are further along the evolutionary path to a district-based system. Connecticut's funding strategy offers a model that encourages municipalities to

¹⁶ The state also provides approximately \$5B for education via Chapter 70 funding.

form regions but allows for autonomous cities and towns as well. Per the 2016 Connecticut Legislative Research Report on Connecticut Local Health Departments, Connecticut's per capita rate of reimbursement for a functioning district serving a population of 50,000 or more (or three or more municipalities) is \$1.85 or, for large, standalone entities that are capable of providing the necessary protections and serve a population of 50,000 or more such as Hartford or New Haven, \$1.18 per capita. As of 2009, Connecticut does not fund part-time health departments. To be eligible for state funding, the district or municipality must provide a public health program that includes public health statistics, health education, nutritional services, maternal and child health, communicable and chronic disease control, environmental services, community nursing services, and emergency medical services and spend at least \$1 per capita on its program. Ohio provides local health department and district subsidies contingent on transparency, compliance with local public health council rules, and municipal matching funds of at least three dollars per capita. Other factors that could be considered in funding formulas are socioeconomic and health status factors.

All states that have made a decision to modernize their local public health systems have invested enough resources in the process to ensure their success and longevity, but there is also a case for simply using existing resources more efficiently. One of the most effective strategies is described earlier in this report, the formation of multi-municipal districts or other CJS arrangements. This pools budgets, staff, and functions and can lower per capita costs as compared to standalone health departments. The Commonwealth explicitly promotes this approach through the Community Compact Cabinet that includes seed money for efficiency and regionalization projects across municipal government. The Public Health Leadership Forum found that \$32 per person was needed in 2018 to support a FPHS local health department. In Massachusetts, once health departments are meeting existing standards, an additional investment, estimated at between \$15 and \$20 per capita per year based on the national study, will be needed to help lift their performance from that baseline to allow them to achieve the foundational

public health services (FPHS). Further study and analysis will be needed to better estimate Massachusetts' FPHS funding needs. DPH calculates that local health departments currently only fulfill three or four of 10 essential public health services, although these are somewhat different from FPHS. At some point in the future, the federal government, most likely through the U.S. Department of Health and Human Services, may provide grants directly to local health departments, or through state health departments to local health departments, to upgrade their standards and improve their capacity to protect residents.

Massachusetts is a health leader. In addition to the many public health, medical, and healthcare firsts that have taken place here, it was the first state in the nation to find a financial model to insure all residents, one that was emulated in the Affordable Care Act. This ensured good healthcare to all, reflected in the fact that the Commonwealth routinely places as one of the healthiest states in the nation according to America's Health Rankings and one of the top states for emergency preparedness by the Trust for America's Health. Local public health infrastructure, which affects food, homes, schools, workplaces, and the environment, is the foundation for this wellbeing. Yet while the Commonwealth has committed the public and private financial resources to excellent healthcare—its expenditure ranks 2nd among the 50 states, with over \$10,000 per person, its health departments are chronically underfunded. It is now time to address that.

RESOURCES TO MEET SYSTEM NEEDS

Key Findings

- Funding for local public health is inconsistent and inequitable in its ability to meet the current mandates and the needs of a 21st century system.
- The nationally recognized Foundational Public Health Services framework provides a means for costing out local public health services.
- Massachusetts and many other states face the challenge of limited investment of resources to ensure local capacity to provide 21st-century public health protections.

Recommendation

To ensure optimal health protections and wellness opportunities for all Massachusetts residents, the Commonwealth should commit appropriate resources for the local public health

system changes proposed by the Commission.

Action Steps

- Provide incentives for public health district formation and expansion and other cross-jurisdictional sharing arrangements.
- Implement the recommended credentials and training/continuing education requirements for the LPH workforce.
- Explore the recommendations of the Massachusetts Public Health Regionalization Working Group with regards to resources that will support shared services such as:
 - Provide transparent cost breakdown to highlight service areas where cross-jurisdictional sharing can yield the greatest cost savings.
 - Provide targeted feasibility study grants.
 - Provide a variety of cross-jurisdictional sharing opportunities for cities and towns.
- Expand the capacity of DPH and DEP to a) provide technical assistance on shared services, b) support workforce credentialing, and c) share and collect data.

Continuity and Sustainability

The health of Massachusetts depends on the complex interplay and strong partnerships among state agencies, the local public health system, and the healthcare system. Boards of health are the “boots on the ground” for each town and city and a beacon that often acts as the first alert to a public health problem or crisis. Yet many local health departments in Massachusetts are in a perpetual bind: stagnant or diminished resources and ever-increasing state and federal mandates. They may try to do more with less, but it is an unsustainable solution. To push them to upgrade to Foundational Public Health Services (FPHS)—without first developing the readiness and capacity to do so—will just intensify the crisis for these struggling cities and towns—and widen the gap between them and the small number of well-funded and supported health departments that will be able to implement the new standards.

Modernizing Massachusetts’ local public health system is a monumental but necessary task—and the longer we wait, the harder it will be. Like any project of this magnitude, it has progressed slowly but steadily toward the goal. The Special Commission on Local and Regional Public Health’s work and the recommendations in this report are founded on extensive earlier efforts. These can be traced back decades, but the Local Health 2000 Commission is a good starting point. Below is a timeline of important milestones; each has been a building block for the 21st-century system that the Commission envisions in this report.

**TWENTY-FIVE YEARS OF EFFORTS TO ADDRESS THE NEEDS
OF MASSACHUSETTS LOCAL PUBLIC HEALTH SYSTEM
TIMELINE 1994-2019**

Year(s)	Event
1994-1996	Local Health 2000 Commission
1998	Coalition for Local Public Health formed—comprised of 5 public health trade associations for boards of health, environmental health, health officers, public health nurses, and public health advocacy
2003	A Case for Improving Local Public Health Infrastructure, Coalition for Local Public Health (CLPH)
2005	Local Public Health Institute (LPHI) formed to strengthen training for workforce
2006	Strengthening Local Public Health In Massachusetts: A Call to Action, CLPH
2006-2009	Massachusetts Public Health Regionalization Working Group
2010	LPHI competency report identifies competency-based training needs for local public health workforce
2010	Massachusetts Regionalization Advisory Commission report includes recommendations for public health regionalization
2010-2015	Federally-funded Public Health District Incentive Grant Program planning and implementation
2016-2019	Special Commission on Local and Regional Public Health reviews local public health system and makes recommendations based on findings

This report describes the obstacles to modernizing Massachusetts' local public health system and then provides recommendations and detailed action steps to address them. Following this road map will move the Commonwealth closer to the goal of a well-functioning local public health system for all. It will not be easy. There is no single entity that can guide the process. DPH and DEP, while they are responsible for the health of the state as a whole, do not have oversight authority over local health departments and cannot enforce lapses in statutory or regulatory requirements, such as regular and timely submission of reports. Because the health departments are the critical actors in modernizing the system, the Commission recommended considering the voluntary adoption of a minimum package of public health services (FPHS). This would encourage cross-jurisdictional sharing, raise data standards, better prepare the workforce, and help each local health department advance towards accreditation. It was beyond the scope of this phase of the project, however, to assess the feasibility of doing so and to estimate the resources needed to get the system to meet the national benchmark.

Thus, to keep the state moving forward on its journey to modernization, it is critical that there be an oversight body to monitor progress, that the relevant state entities have appropriate authority, and that stakeholders continue to be partners in the process. As learned from the work of the Public Health District Incentive Grant (PHDIG) program cited earlier in this report, stakeholder buy-in is critical not only for short-term goals but to sustained improvement.

CONTINUITY AND SUSTAINABILITY

Key Finding

The Massachusetts local public health system depends on the continuing engagement of the stakeholders who have laid out an actionable path to effectiveness and efficiency.

Recommendations

- Continue to engage a wide range of stakeholders to provide ongoing support for the recommendations for local public health systems improvement.
- Give DPH and DEP the infrastructure and authority to support the recommendations for local public health system improvement.
- Identify and address administrative actions at DEP and DPH that can support the recommendations of the Commission.

Action Steps

- Formalize the continuation of the Commission through the creation of an advisory board or similar entity with resources necessary for monitoring the progress of the Commission’s recommendations, which would include an annual progress report to the Legislature and Governor.
- Identify and address administrative actions at DEP and DPH that can support the recommendations of the Commission, such as:
 - Explore providing incentives in grant-making process that support recommendations.
 - Work with universities and colleges to strengthen the local public health workforce pipeline.
 - Improve access to trainings for local public health workforce.
 - Evaluate and consider changes to existing local public health reporting systems.
 - Explore ways to enhance data sharing between DPH/DEP and municipalities.

Conclusion

To ensure a well-functioning local public health system for all residents, no matter where they live, the Special Commission on Local and Regional Public Health made six recommendations, described in detail in this report. The recommendations covered the four areas key to ensuring health protections and improving the delivery of services to residents and two areas to support this far-reaching plan.

Summary of the Commission’s Recommendations

1. Elevate the standards for and improve the performance of local public health departments.
2. Increase cross-jurisdictional sharing of public health services to strengthen the service delivery capabilities of local public health departments.
3. Explore improvements to the current platforms to report, analyze, and interpret data.
4. Set education and training standards for local public health officials and staff and expand access to professional development.
5. Commit appropriate resources for the local public health system changes proposed by the Commission.
6. Ensure continuity of stakeholder engagement in the implementation of the Commission’s recommendations.

Every day about 200 lives begin in Massachusetts. Another 150 end.¹⁷ Between those two bookmarks, no other entity is more important to ensuring the health and wellbeing of residents than their local health departments. While each of the individual measures recommended in this report is beneficial by itself, they are intended to be adopted as an interlocking set, reinforcing and magnifying each other. Only this type of systemic change will help make Massachusetts a leader in the local public health modernization process and give all the Commonwealth's inhabitants the services and protections they need to lead healthy, productive lives.

¹⁷ Massachusetts Department of Public Health. "Massachusetts Births 2016" and "Massachusetts Deaths 2016." Boston, MA: May and December 2018.

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Appendices

- A. Chapter 3 of Resolves of 2016
- B. Participants in Stakeholder Listening Sessions, June 2018
- C. Foundational Public Health Services Fact Sheet
- D. CSPHS Spectrum of Cross-Jurisdictional Sharing Arrangements
- E. Massachusetts Health Districts and Shared Services Map
- F. Glossary of Terms
- G. Directory of Organizations

Appendix A

Chapter 3 of Resolves of 2016

Establishing the Special Commission on Local and Regional Public Health

Chapter 3 of the Resolves of 2016

RESOLVE ESTABLISHING THE SPECIAL COMMISSION ON LOCAL AND REGIONAL PUBLIC HEALTH

Resolved, that there shall be a special commission on local and regional public health to assess the effectiveness and efficiency of municipal and regional public health systems and to make recommendations regarding how to strengthen the delivery of public health services and preventive measures.

The commission shall consist of the following persons, or their designees: the secretary of administration and finance; the commissioner of public health, who shall serve as chair; the commissioner of environmental protection; the commissioner of agricultural resources; 2 members of the house of representatives, 1 of whom shall be appointed by the speaker of the house and 1 of whom shall be appointed by the house minority leader; 2 members of senate, 1 of whom shall be appointed by the senate president and 1 of whom shall be appointed by the senate minority leader; a representative of the Massachusetts Municipal Association; a representative of the Massachusetts Taxpayers Foundation; a representative of the Massachusetts Public Health Association; a representative of the Massachusetts Health Officers Association; a representative of the Massachusetts Association of Health Boards; a representative of the Massachusetts Environmental Health Association; a representative of the Massachusetts Association of Public Health Nurses; a representative of the Western Massachusetts Public Health Association; a representative of the Massachusetts Public Health Regionalization Project

working group at Boston University School of Public Health; and 8 persons to be appointed by the governor, 1 of whom shall be a representative of a research or academic institution with experience in public health data collection and analysis; 1 of whom shall be a representative of a community health center; 1 of whom shall be a representative of a hospital system; 1 of whom shall have expertise in public health workforce development; 1 of whom shall be a public health representative of a municipality with a population greater than 50,000; 1 of whom shall be a public health representative of a municipality with a population between 5,000 and 50,000; and 1 of whom shall be a public health representative of a regional service model that includes at least 1 town with a population of less than 5,000.

The commission shall: (i) examine the capacity of local and regional public health authorities in comparison to national public health standards and recommendations from the Centers for Disease Control and Prevention, the Public Health Accreditation Board, the National Association of County and City Health Officials, the National Association of Local Boards of Health, the Association of State and Territorial Health Officials and other relevant organizations; (ii) assess the capacity of local public health authorities to carry out their statutory powers and duties; (iii) evaluate existing municipal and state resources for local health and assess per capita funding levels within municipalities for local health; (iv) evaluate the workforce credentials of the current and future public health workforce as to educational standards, credentialing and training; (v) assess the current capacity of the office of local and regional health within the department of public health; (vi) evaluate existing regional collaboration and various models of service delivery across the commonwealth, including stand-alone, shared service and fully comprehensive regional districts; and (vii) determine the commonwealth's progress towards achieving recommendations made by the Massachusetts regionalization advisory commission pursuant to chapter 60 of the acts of 2009.

The commission may solicit public input through public hearings and testimony.

The commission shall prepare and submit to the governor, the joint committee on public health and the house and senate committee on ways and means a report that includes: (i) a summary of the commission's findings; (ii) a review of local public health organization and financing in other states; (iii) a review of the strengths and weaknesses of the local public health system as it currently exists in the commonwealth, with particular emphasis on capacity, functionality and efficiency; (iv) recommendations on organizational and fiscal models that would work to ensure capacity across municipalities; (v) recommendations on the sharing of resources across municipalities, including regionalization; (vi) recommendations to strengthen public health data reporting, gathering and analysis, including any recommendations on mandatory reporting of local health authorities to the department; (vii) recommendations on resources needed to effectively meet statutory responsibilities at the state and local level; and (viii) recommendations to strengthen the local public health workforce and ensure training of the next generation of local public health professionals, including leveraging academic partnerships. The commission shall submit its final report by July 31, 2017.

Approved August 12, 2016.

Appendix B

PARTICIPANTS IN STAKEHOLDER LISTENING SESSIONS, JUNE 2018

Greenfield: Persons Providing Comments		
Bell-Perkins, Elizabeth	Goshen Board of Health	Board of Health Member
Benson, Kathie	Leyden Board of Health	Board of Health Member
Federman, Julie	Amherst Health Department	Health Director
Hirschhorn, Beverly	Longmeadow Board of Health	Health Director
Kovacs, Betsy	Heath Board of Health	Board of Health Member
Stoler, Rachel	Franklin Regional Council of Governments	Community Health Program Manager
Telling, Doug	Charlemont Board of Health	Board of Health Member
Vondal, Deborah	Athol Board of Health	Health Agent
Lakeville: Persons Providing Comments		
Cardarelli, Maureen	Community VNA	Public Health Nurse
Chaplin, Damon	New Bedford Health Department	Health Director
Donovan Palmer, Amy	Mansfield Board of Health	Health Agent
Downey, Kathy	Marion Board of Health	Public Health Nurse
MacVarish, Kathleen	Boston University School of Public Health	Academic Institution
Michaud, Chris	Dartmouth Board of Health	Health Director
Peabody: Persons Providing Comments		
Carbone, Thomas	Andover Health Department	Health Director
Carroll, Karin	Gloucester Health Department	Health Director
Cosgrove, Edward	Needham Board of Health	Board of Health Member
McKenzie, Mary	Saugus Health Department	Public Health Nurse
Stone, Jeff	North Suffolk Public Health Collaborative	Director

Waltham: Persons Providing Comments		
Eckhouse, Seth	Local Public Health Institute	Academic Institution
Kinsella, Caroline	Massachusetts Association of Public Health Nurses	Public Health Nurse
Kress, Doug	Somerville Health and Human Services	Health Director
Westborough: Person Providing Comments		
Leger, Philip	Worcester Division of Public Health, Royalston BOH	Health Agent
Westfield: Persons Providing Comments		
Bozigian-Merrick, Stephanie	Pioneer Valley Planning Commission	Regional Planning Agency
Meyer, Jenny	Northampton Board of Health	Public Health Nurse
Petrucci, Sherry	Agawam Health Department	Public Health Nurse
Proctor, Alison	Springfield Health Department	Program Director
Comments Submitted by Email		
Clay, Ruth	Towns of Wakefield and Melrose	Health Director
Collins, Bethany	Dighton Board of Health	Public Health Nurse
Conlon, Jaime	Rehoboth Board of Health	Public Health Nurse
Crochier, Randy	Gill Board of Health	Board of Health Member, Selectboard Member
DeCampo, Karen	Woburn Board of Health	Public Health Nurse
DePalo, Alexandra	Framingham Board of Health	Deputy Health Director
Donovan Palmer, Amy	Mansfield Board of Health	Health Agent
Drummey, Peg	Stoneham Board of Health	Public Health Nurse
Dukes, Cheryl	UMass Amherst - Nursing	Academic Institution
Fortino, Fran	Whately Board of Health, Foothills Health District	Board of Health Member
Guarino, Terri	Bourne Board of Health	Health Agent
Keppard, Barry	Metropolitan Area Planning Council	Regional Planning Agency

Kinsella, Caroline	Milton Health Department	Health Director	
Lebrun, Evelyn	Brockton Board of Health	Public Health Nurse	
Leger, Philip	Worcester Division of Public Health, Royalston BOH	Health Agent	
Litchfield, Sheila	Rowe Board of Health	Public Health Nurse	
Maloni, Mark	Franklin Regional Council of Governments	Public Health Planner	
Martin, Sandra	Berkshire Regional Planning Commission	Regional Planning Agency	
Michaud, Chris	Dartmouth Board of Health	Health Director	
Mori, Ruth	Wayland Board of Health	Public Health Nurse	
Perlman, Bill	Franklin Regional Council of Governments	Executive Committee Chair	
Poirier, Susan	Milton Health Department	Public Health Nurse	
Sarni, Susan	Town of Hingham	Health Director	
Sullivan, Joyce	Hull Board of Health	Health Director	
Taverna, Joan	Hull Board of Health	Public Health Nurse	
Telling, Doug	Charlemont Board of Health	Board of Health Member	
Tracy, Jessica	Dedham Health Department	Public Health Nurse	
White, Lisa	Franklin Regional Council of Governments	Public Health Nurse	
Zajdel, Pauline	Town of Foxboro	Health Director	
Attended Listening Session but Did Not Comment			
Pierce, Kathern	Montague Board of Health	Health Inspector	Greenfield
Puleo, Elaine	Shutesbury Select Board	Board of Selectmen Member	Greenfield
Solomon, Josh	The Recorder (Greenfield)	Reporter	Greenfield
Volpe, Cheryl	Greenfield Board of Health	Public Health Nurse	Greenfield
Desmarais, Lori	Freetown/Lakeville	Public Health Nurse	Lakeville
Hall, Stacey	Marion Board of Health	Unkown	Lakeville
Lebrun, Evelyn	Brockton Board of Health	Public Health Nurse	Lakeville

Desmarais, Michelle	Lynn Health Department	Health Director	Peabody
Greenbaum, Dave	Saugus Health Department	Health Director	Peabody
Kaufman, Barbara	Melrose-Wakefield Healthcare	Health Care	Peabody
Mello, Traci	Wilmington/ Middleton BOH	Public Health Nurse	Peabody
Waller, Kim	Salem	Academic Institution	Peabody
Younger, Tom	Stoneham	Town Administrator	Peabody
Murphy, Jennifer	Winchester Health Dept.	Health Director	Waltham
Anglin, Najheen	Longmeadow Board of Health	Student	Westborough
Baccari, Steven	Westboro Board of Health	Health Director	Westborough
Auer, Kathleen	Agawam Health Department	Health Agent	Westfield
Laverty, Cassandra	Westfield Health Department	Public Health Nurse	Westfield

Appendix C

FOUNDATIONAL PUBLIC HEALTH SERVICES FACT SHEET

Reprinted by permission of the Public Health National Center for Innovations

Public Health National Center for Innovations. “Foundational Public Health Services.” www.phnci.org/uploads/resource-files/FPHS-Factsheet-November-2018.pdf. Published November 2018. Accessed June 28, 2019.

Overview

Health departments provide public health protections in a number of areas, including: preventing the spread of communicable disease, ensuring food, air, and water quality are safe, supporting maternal and child health, improving access to clinical care services, and preventing chronic disease and injury. In addition, public health departments provide local protections and services unique to their community's needs.

The infrastructure needed to provide these protections strives to provide fair opportunities for all to be healthy and includes seven capabilities: 1) Assessment/Surveillance, 2) Emergency Preparedness and Response, 3) Policy Development and Support, 4) Communications, 5) Community Partnership Development, 6) Organizational Administrative Competencies and 7) Accountability/Performance Management. Practically put, health departments have to be ready 24/7 to serve their communities. That requires access to a wide range of critical data sources, robust laboratory capacity, preparedness and policy planning capacity, and expert staff to leverage them in support of public health protections.

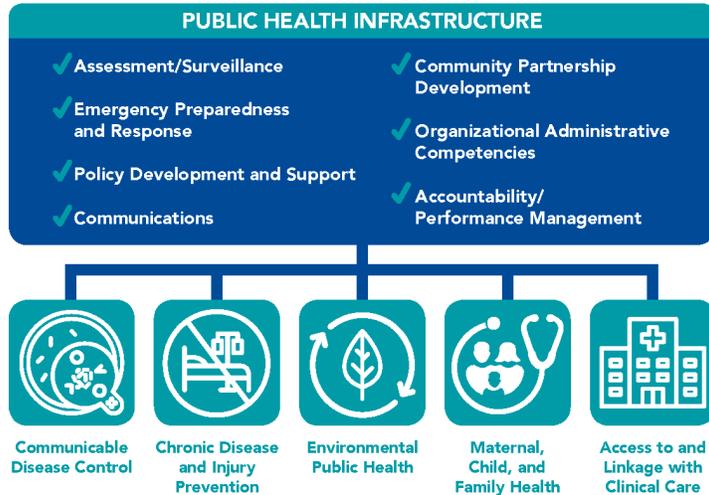
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Public health infrastructure consists of the foundational capabilities, which are the cross-cutting skills and capacities needed to support basic public health protections and other programs and activities that are key to ensuring the community's health and achieving equitable health outcomes.

Public health programs, or foundational areas, are those basic public health, topic-specific programs that are aimed at improving the health of the community affected by certain diseases or public health threats. Examples of these include, but are not limited to, chronic disease prevention, community disease control, environmental public health, and maternal, child, and family health.

Local protections and services unique to a community's needs are those determined to be of additional critical significance to a specific community's health and are supported by the public health infrastructure and programs. This work is essential to a given community and cannot be visually depicted because it varies by jurisdiction.

Public Health Infrastructure (Foundational Capabilities)

Assessment/Surveillance

- ❖ Ability to collect sufficient foundational data to develop and maintain electronic information systems to guide public health planning and decision making at the state and local level. Foundational data include Behavioral Risk Factor Surveillance Survey (BRFSS), a youth survey (such as YRBS), and vital records, including the personnel and software and hardware development that enable the collection of foundational data.
- ❖ Ability to access, analyze, and use data from (at least) seven specific information sources, including (1) U.S. Census data, (2) vital statistics, (3) notifiable conditions data, (4) certain health care clinical and administrative data sets including available hospital discharge, insurance claims data, and Electronic Health Records (EHRs), (5) BRFSS, (6) nontraditional community and environmental health indicators, such as housing, transportation, walkability/green space, agriculture, labor, and education, and (7) local and state chart of accounts.

- ❖ Ability to prioritize and respond to data requests, including vital records, and to translate data into information and reports that are valid, statistically accurate, and accessible to the intended audiences.
- ❖ Ability to conduct a community and statewide health assessment and identify health priorities arising from that assessment, including analysis of health disparities.
- ❖ Ability to access 24/7 laboratory resources capable of providing rapid detection.

Emergency Preparedness and Response

- ❖ Ability and capacity to develop, exercise, and maintain preparedness and response strategies and plans, in accordance with established guidelines, to address natural or other disasters and emergencies, including special protection of vulnerable populations.
- ❖ Ability and capacity to lead the Emergency Support Function 8 – Public Health & Medical for the county, region, jurisdiction, and state.
- ❖ Ability to activate the emergency response personnel and communications systems in the event of a public health crisis; coordinate with federal, state, and local emergency managers and other first responders; and operate within, and as necessary lead, the incident management system.
- ❖ Ability to maintain and execute a continuity of operations plan that includes a plan to access financial resources to execute an emergency and recovery response.
- ❖ Ability to establish and promote basic, ongoing community readiness, resilience, and preparedness by enabling the public to take necessary action before, during, or after a disaster.
- ❖ Ability to issue and enforce emergency health orders.
- ❖ Ability to be notified of and respond to events on a 24/7 basis.
- ❖ Ability to function as a Laboratory Response Network (LRN) Reference laboratory for biological agents and as an LRN chemical laboratory at a level designated by CDC.

Policy Development and Support

- ❖ Ability to serve as a primary and expert resource for establishing, maintaining, and developing basic public health policy recommendations that are evidence-based, grounded in law, and legally defensible. This ability includes researching, analyzing, costing out, and articulating the impact of such policies and rules where appropriate, as well as the ability to organize support for these policies and rules and place them before an entity with the legal authority to adopt them.
- ❖ Ability to effectively inform and influence policies being considered by other governmental and non-governmental agencies within your jurisdiction that can improve the physical, environmental, social, and economic conditions affecting health but are beyond the immediate scope or authority of the governmental public health department.

Communications

- ❖ Ability to maintain ongoing relations with local and statewide media including the ability to write a press release, conduct a press conference, and use electronic communication tools to interact with the media.
- ❖ Ability to write and implement a routine communication plan that articulates the health department's mission, value, role, and responsibilities in its community, and support department and community leadership in communicating these messages.
- ❖ Ability to develop and implement a risk communication strategy, in accordance with Public Health Accreditation Board Standards, to increase visibility of a specific public health issue and communicate risk. This includes the ability to provide information on health risks and associated behaviors.
- ❖ Ability to transmit and receive routine communications to and from the public in an appropriate, timely, and accurate manner, on a 24/7 basis.
- ❖ Ability to develop and implement a proactive health education/health prevention strategy (distinct from other risk communications) that disseminates timely and accurate information to the public in culturally and linguistically appropriate (i.e., 508 compliant) formats for the various communities served, including through the use of electronic communication tools.

Community Partnership Development

- ❖ Ability to create, convene, and sustain strategic, non-program specific relationships with key health-related organizations; community groups or organizations representing populations experiencing health disparities or inequities; private businesses and health care organizations; and relevant federal, tribal, state, and local government agencies and non-elected officials.
- ❖ Ability to create, convene, and support strategic partnerships.
- ❖ Ability to maintain trust with and engage community residents at the grassroots level.
- ❖ Ability to strategically select and articulate governmental public health roles in programmatic and policy activities and coordinate with these partners.



- ❖ Ability to convene across governmental agencies, such as departments of transportation, aging, substance abuse/mental health, education, planning and development, or others, to promote health, prevent disease, and protect residents of the health department's geopolitical jurisdiction.
- ❖ Ability to engage members of the community in a community health improvement process that draws from community health assessment data and establishes a plan for addressing priorities. The community health improvement plan can serve as the basis for partnership development and coordination of effort and resources.

Organizational Administrative Competencies

- ❖ **Leadership and Governance:** Ability to lead internal and external stakeholders to consensus, with movement to action, and to serve as the public face of governmental public health in the department's jurisdiction. Ability to directly engage in health policy development, discussion, and adoption with local, state, and national policymakers, and to define a strategic direction of public health initiatives. Ability to engage with the appropriate governing entity about the department's public health legal authorities and what new laws and policies might be needed.
- ❖ **Health Equity:** Ability to strategically coordinate health equity programming through a high level, strategic vision and/or subject matter expertise which can lead and act as a resource to support such work across the department.
- ❖ **Information Technology Services, including Privacy and Security:** Ability to maintain and procure the hardware and software needed to access electronic health information and to support the department's operations and analysis of health data. Ability to support, use, and maintain communication technologies needed to interact with community residents. Ability to have the proper systems in place to keep health and human resources data confidential.
- ❖ **Human Resources Services:** Ability to develop and maintain a competent workforce, including recruitment, retention, and succession planning; training; and performance review and accountability.
- ❖ **Financial Management, Contract, and Procurement Services, including Facilities and Operations:** Ability to establish a budgeting, auditing, billing, and financial system and chart of expense and revenue accounts in compliance with federal, state, and local standards and policies. Ability to secure grants or other funding (governmental and not) and demonstrate compliance with an audit required for the sources of funding utilized. Ability to procure, maintain, and manage safe facilities and efficient operations.
- ❖ **Legal Services and Analysis:** Ability to access and appropriately use legal services in planning, implementing, and enforcing, public health initiatives, including relevant administrative rules and due process.

Accountability/Performance Management

- ❖ **Quality Improvement:** Ability to perform according to accepted business standards and to be accountable in accordance with applicable relevant federal, state, and local laws and policies and to assure compliance with national and Public Health Accreditation Board Standards. Ability to maintain a performance management system to monitor achievement of organizational objectives. Ability to identify and use evidence-based and/or promising practices when implementing new or revised processes, programs and/or interventions at the organizational level. Ability to maintain an organization-wide culture of quality improvement using nationally recognized framework quality improvement tools and methods.

Public Health Programs (Foundational Areas)

Communicable Disease Control

- ❖ Provide timely, statewide, and locally relevant and accurate information to the health care system and community on communicable diseases and their control.
- ❖ Identify statewide and local communicable disease control community partners and their capacities, develop and implement a prioritized communicable disease control plan, and seek funding for high priority initiatives.
- ❖ Receive laboratory reports and other relevant data, conduct disease investigations, including contact tracing and notification, and recognize, identify, and respond to communicable disease outbreaks for notifiable conditions in accordance with local, national and state mandates and guidelines.
- ❖ Assure the availability of partner notification services for newly diagnosed cases of syphilis, gonorrhea, and HIV according to CDC guidelines.
- ❖ Assure the appropriate treatment of individuals who have active tuberculosis, including the provision of directly-observed therapy in accordance with local and state laws and Centers for Disease Control and Prevention (CDC) guidelines.
- ❖ Support the recognition of outbreaks and other events of public health significance by assuring capacity for the identification and characterization of the causative agents of disease and their origin, including those that are rare and unusual, at the appropriate level.
- ❖ Coordinate and integrate categorically-funded communicable disease programs and services.



Chronic Disease and Injury Prevention

- ❖ Provide timely, statewide, and locally relevant and accurate information to the health care system and community on chronic disease and injury prevention and control.
- ❖ Identify statewide and local chronic disease and injury prevention community partners and their capacities, develop and implement a prioritized prevention plan, and seek funding for high priority initiatives.
- ❖ Reduce statewide and community rates of tobacco use through a program that conforms to standards set by state or local laws and CDC's Office on Smoking and Health, including activities to reduce youth initiation, increase cessation, and reduce secondhand smoke exposure, as well as exposure to harmful substances.
- ❖ Work actively with statewide and community partners to increase statewide and community rates of healthy eating and active living through a prioritized approach focusing on best and emerging practices aligned with national, state, and local guidelines for healthy eating and active living.
- ❖ Coordinate and integrate categorically-funded chronic disease and injury prevention programs and services.

Environmental Public Health

- ❖ Provide timely, statewide, and locally relevant and accurate information to the state, health care system, and community on environmental public health issues and health impacts from common environmental or toxic exposures.
- ❖ Identify statewide and local community environmental public health partners and their capacities, develop and implement a prioritized plan, and seek action funding for high priority initiatives.
- ❖ Conduct mandated environmental public health laboratory testing, inspections, and oversight to protect food, recreation sites, and drinking water; manage liquid and solid waste streams safely; and, identify other public health hazards related to environmental factors in accordance with federal, state, and local laws and regulations.
- ❖ Protect workers and the public from chemical and radiation hazards in accordance with federal, state, and local laws and regulations.
- ❖ Participate in broad land use planning and sustainable development to encourage decisions that promote positive public health outcomes (e.g. housing and urban development, recreational facilities, and transportation systems) and resilient communities.
- ❖ Coordinate and integrate categorically-funded environmental public health programs and services.

Maternal, Child, and Family Health

- ❖ Provide timely, statewide, and locally relevant and accurate information to the health care system and community on emerging and on-going maternal child health trends.
- ❖ Identify local maternal and child health community partners and their capacities; using life course expertise and an understanding of health disparities, develop a prioritized prevention plan; and seek funding for high priority initiatives.
- ❖ Identify, disseminate, and promote emerging and evidence-based information about early interventions in the prenatal and early childhood period that promote lifelong health and positive social-emotional development.
- ❖ Assure newborn screening as mandated by a state or local governing body including wraparound services, reporting back, following up, and service engagement activities.
- ❖ Coordinate and integrate categorically funded maternal, child, and family health programs and services.

Access to and Linkage with Clinical Care

- ❖ Provide timely, statewide, and locally relevant and accurate information to the health care system and community on access and linkage to clinical care (including behavioral health), healthcare system access, quality, and cost.
- ❖ Inspect and license healthcare facilities, and license, monitor, and discipline healthcare providers, where applicable.
- ❖ In concert with national and statewide groups and local providers of health care, identify healthcare partners and competencies, develop prioritized plans for increasing access to health homes and quality health care, and seek funding for high priority policy initiatives.
- ❖ Coordinate and integrate categorically-funded clinical health care.

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Appendix D

SPECTRUM OF CROSS-JURISDICTIONAL SHARING ARRANGEMENTS CENTER FOR SHARING PUBLIC HEALTH SERVICES

Reprinted by permission of the Center for Sharing Public Health Services.

Center for Sharing Public Health Services. “Spectrum of Cross-Jurisdictional Sharing Arrangements.” https://phsharing.org/wp-content/uploads/2019/06/070119-CSPHS_Spectrum_of_Arrangements.pdf. Published June 2019. Accessed July 3, 2019.

Spectrum of Cross-Jurisdictional Sharing Arrangements

OVERVIEW

Cross-jurisdictional sharing (CJS) is when jurisdictions, such as cities or counties and sometimes states, come together and share resources across their respective boundaries to efficiently and effectively deliver public health services.

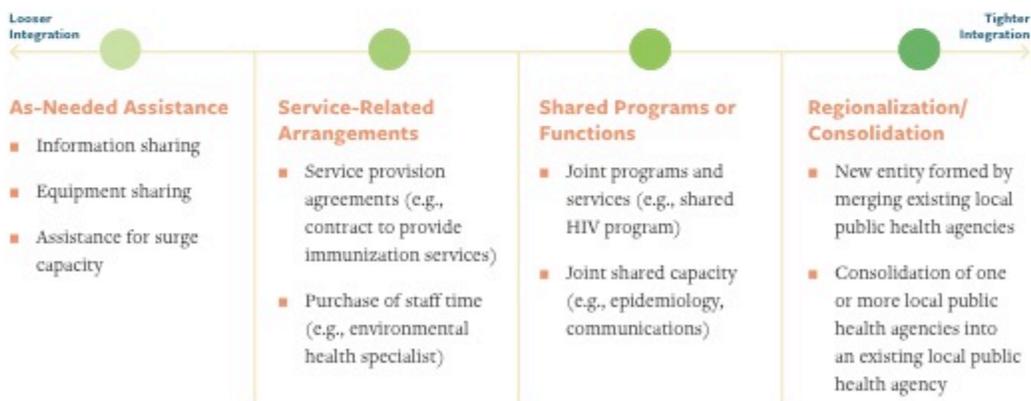
CJS can be beneficial for health departments that believe by working together — pooling resources, sharing staff, expertise, funds and programs — across boundaries, they can accomplish more than they could do alone.

The Center's Spectrum of Cross-Jurisdictional Sharing Arrangements identifies four main types of CJS arrangements (Figure 1).

Generally, moving from left to right along the Spectrum, the level of service integration increases, the level of jurisdictional autonomy decreases, and implementation and governance may become more complex. The governance model, financial structure and decision-making process can be different for each type of arrangement on the Spectrum.

Because there is not a one-size-fits-all approach to CJS, it is important to refer to the Spectrum early and often during the CJS process that is outlined in the Center's Roadmap to Develop Cross-Jurisdictional Sharing Initiatives.

SPECTRUM OF CROSS-JURISDICTIONAL SHARING ARRANGEMENTS (Figure 1)



2017 Updates: The Center updated the Spectrum in early 2017 to reflect lessons learned about CJS and other recent advances in the field of Public Health Systems and Services. The Center's original 2013 Spectrum was adapted from previous versions produced by J. Ruggini (2006), A. Holdsworth (2006) and N. Kaufman (2010).

TYPES OF CJS ARRANGEMENTS

As-Needed Assistance

On the far left side of the Spectrum are CJS arrangements where one jurisdiction collaborates with other jurisdictions on an as-needed basis. These arrangements are informal and customary, as well as episodic in nature.

Some examples of as-needed assistance include:

- Information sharing (e.g., notifying adjacent counties of a rise in pertussis cases)
- Expertise sharing (e.g., access to an epidemiologist)
- Equipment sharing (e.g., a handshake arrangement to share generators when needed)
- Assistance for surge capacity (e.g., providing additional nurses to an adjacent county)

Service-Related Arrangements

Unlike as-needed assistance, service-related arrangements involve regular and predictable sharing, usually formalized through contracts.

Some examples of service-related arrangements include:

- Service provision agreements (e.g., contract to provide immunization services)
- Purchase of staff time (e.g., environmental health specialist)

Shared Programs or Functions

If all entities contribute resources and have a formal role in deciding how and when to deliver services, then the arrangement is a shared program or function.

Some examples include:

- Joint programs and services (e.g., shared stake in a regional HIV program)
- Joint shared capacity (e.g., shared oversight of a single epidemiologist)
- Joint ownership of assets (e.g., multiple counties contract to purchase heavy machinery)

Regionalization/Consolidation

On the right side of the Spectrum is regionalization/consolidation, where multiple jurisdictions are served by a single governmental entity that delivers all services and formally assumes the risks, costs and decision-making across the jurisdictions involved.

Some examples include:

- New entity formed by merging existing local public health agencies
- Consolidation of one or more local public health agencies into an existing local public health agency

CONCLUSION

The Center views this Spectrum as a living document. As such, the Center will continue to refine and modify it over time, as new learnings emerge. Check the Center's website for updates.

For more information, or to provide feedback about the Spectrum, please email phsharing@khi.org.

June 2019 – PHSharing/19-03-V1



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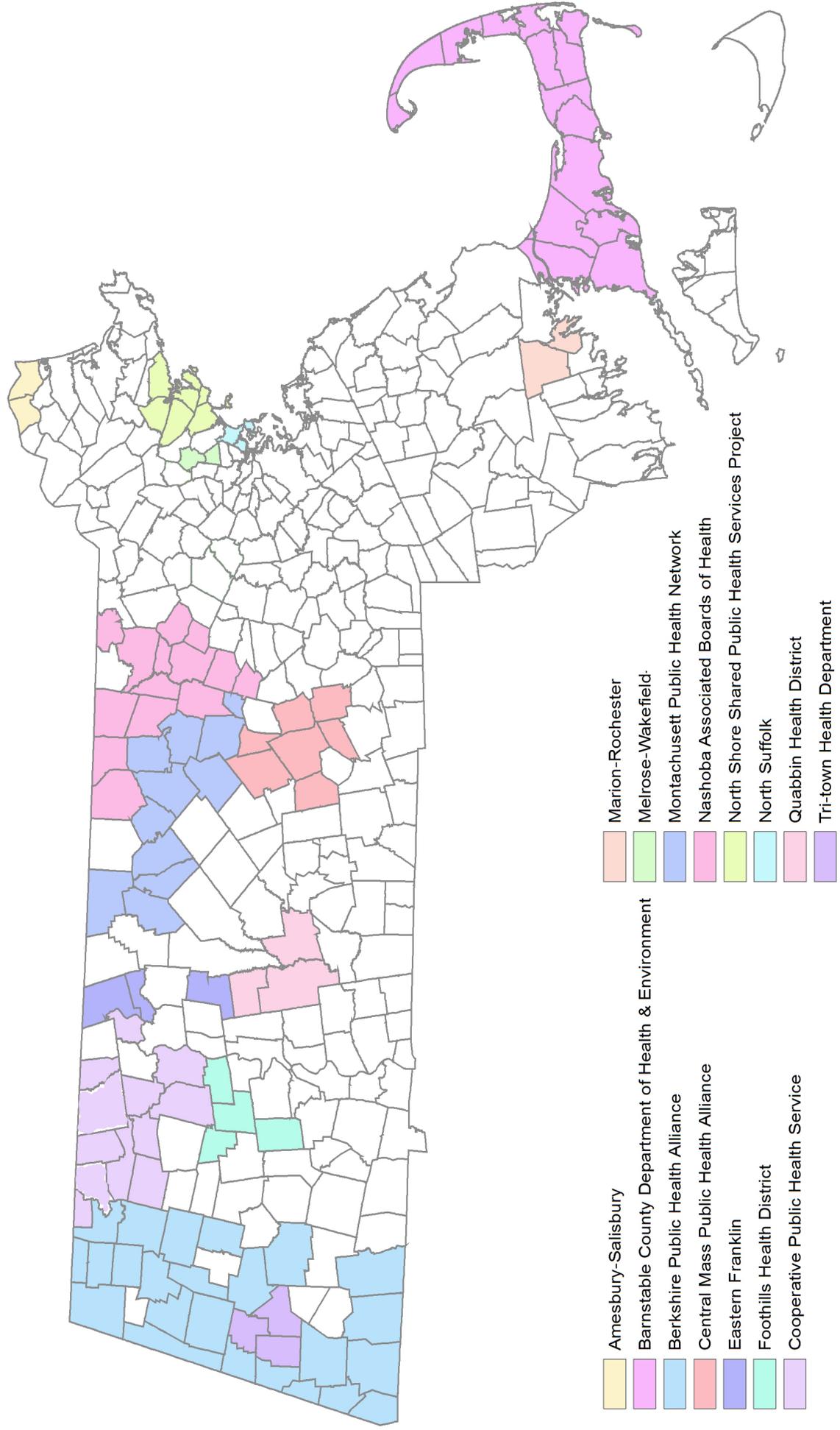
The Center for Sharing Public Health Services provides access to tools, techniques, expertise and resources that support better collaboration and sharing across boundaries. We help public health departments across the country work together to protect and promote the health of the people they serve.

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Appendix E

MASSACHUSETTS HEALTH DISTRICTS
AND SHARED SERVICES MAP

Public Health Districts and Shared Services



Map produced by BEH-GID, MDPH. Data as of July 6, 2017
 Updated June 2019

Appendix F

GLOSSARY OF TERMS

Board of Health. “A board of health is a legally designated governing entity whose members are appointed or elected to provide advisory functions and/or governing oversight of public health activities, including assessment, assurance, and policy development, for the protection and promotion of health in their community.”

Source: National Public Health Performance Standards Program, Acronyms, Glossary, and Reference Terms, CDC, 2007. [US Centers for Disease Control Glossary and Reference Terms](#)

Cross-Jurisdictional Sharing. “Cross-jurisdictional sharing is ‘the deliberate exercise of public authority to enable collaboration across jurisdictional boundaries to deliver essential public health services’ (Center for Sharing Public Health Services, 2013). Cross-jurisdictional sharing can range from supporting informal arrangements to more formal changes in structure. In public health, cross-jurisdictional sharing often occurs between health departments or agencies serving two or more jurisdictions. Collaboration allows municipalities to solve issues or problems that cannot be easily solved by a single organization or jurisdiction.

Examples of cross-jurisdictional sharing include

- Regionalization of health departments, such as through the consolidation of two or more health departments
- Sharing staff between two or more health departments, such as an epidemiologist or sanitarian that supports multiple health department jurisdictions
- Sharing defined services, such as laboratory testing services or inspection services

- Collaborative assessment and planning processes that include two or more health departments and leads to shared priorities; examples might include regional preparedness plans, cross-border plans, or community health improvement plans.”

Source: Center for Sharing Public Health Services, 2013 and

<https://www.cdc.gov/stltpublichealth/cjs/index.html>

Essential Public Health Services (or 10 Essential Services). The Essential Public Health Services are the ten services identified as public health activities that should be provided to all communities. Federal and national public health organizations promoted these services as a national standard for the set of services all health departments should provide and by which performance should be measured. The ten services support the core practice of public health:

1. Monitor health status to identify and solve community health problems
2. Diagnose and investigate health problems and health hazards in the community
3. Inform, educate, and empower people about health issues
4. Mobilize community partnerships and action to identify and solve health problems
5. Develop policies and plans that support individual and community health efforts
6. Enforce laws and regulations that protect health and ensure safety
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable
8. Assure competent public and personal health care workforce
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services
10. Research for new insights and innovative solutions to health problems

Sources: [CDC National Health Performance Standards](#) and

<https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html>

Foundational Public Health Services. Foundational Public Health Services (FPHS) is a “conceptual framework describing the capacities and programs that state and local health departments should be able to provide to all communities and for which costs can be estimated. Additionally, health departments should have the capacity for additional important programs and activities specific to the needs of their individual communities. As such, the FPHS model-consists of the following components:

- Foundational Capabilities: cross-cutting skills needed in state/local health departments to support all activities (e.g., human resources, communications)
- Foundational Areas: substantive areas of expertise or program-specific activities in all state/local health departments necessary to protect the community’s health (e.g., communicable disease control.”

Source: Public Health National Center for Innovations. Foundational Public Health Services. 2016; [Foundational Public Health Services](#)

Gateway Cities. The Massachusetts Legislature defines Gateway Cities as communities with populations between 35,000 and 250,000 and median household income and rate of educational attainment of a bachelor's degree or above below the Commonwealth's average. The 26 Gateway Cities are Attleboro, Barnstable, Brockton, Chelsea, Chicopee, Everett, Fall River, Fitchburg, Haverhill, Holyoke, Lawrence, Leominster, Lowell, Lynn, Malden, Methuen, New Bedford, Peabody, Pittsfield, Quincy, Revere, Salem, Springfield, Taunton, Westfield, and Worcester.

Sources:

https://www.masshousing.com/portal/server.pt/community/home/217/supporting_gateway_cities/44957 and <https://gatewaysmag.org/what-is-a-gateway-city/>

Home Rule. Home rule is the right of cities and towns to self-governance in local matters as long as an action is not in conflict with the Massachusetts’ constitution or state

laws. Local governments have charter-making authority and general legislative power, especially if not addressed by the state.

Source: https://www.mass.gov/files/documents/2016/08/pr/homerule_0.pdf

Inter-municipal Agreement. “An agreement with another governmental unit to perform jointly or for that unit's services, activities or undertakings which any of the contracting units is authorized by law to perform.”

Source: M.G.L. c.40, S.4A

Mandated Public Health Services. “Mandated public health services are required by statute, rule/regulation, ordinance, or other similar legally binding process.”

Source: (Public Health Accreditation Board. Standards and Measures Version 1.0. Alexandria, VA. May 2011)

Public Health Informatics. Informatics is an applied information science that designs the blueprints for the complex data systems that keep information secure, usable and responsive to the user’s needs. Informaticians often act as knowledge architects—the information systems they build account for function, user needs, and even local context. When employed effectively, informatics transforms raw data into usable information.

Source: <https://www.phii.org/defining-public-health-informatics>

Public Health 3.0. Public Health 3.0 emphasizes collaborative engagement and actions that directly affect the social determinants of health inequity. It envisions a central role for local health directors as a Chief Health Strategist integral to coalition-led efforts that transform public health. Public Health 3.0 refers to a new era of enhanced and broadened public health practice that goes beyond traditional public department functions and programs. Cross-sectoral collaboration is inherent to the Public Health 3.0 vision, and

the Chief Health Strategist role requires high-achieving health organizations with the skills and capabilities to drive such collective action.

Sources:

- DeSalvo KB, Wang YC, Harris A, Auerbach J, Koo D, O'Carroll P. Public Health 3.0: A Call to Action for Public Health to Meet the Challenges of the 21st Century. *Prev Chronic Dis* 2017;14:170017. DOI: <http://dx.doi.org/10.5888/pcd14.170017>.
- National Association of County and City Health Officials
<https://www.naccho.org/programs/public-health-infrastructure/public-health-3-0>

Public Health Accreditation. “Accreditation for public health departments is defined as:

1. The development and acceptance of a set of national public health department accreditation standards;
2. The development and acceptance of a standardized process to measure health department performance against those standards;
3. The periodic issuance of recognition for health departments that meet a specified set of national accreditation standards; and
4. The periodic review, refining, and updating of the national public health department accreditation standards and the process for measuring and awarding accreditation recognition.”

Source: Public Health Accreditation Board. *Guide to National Public Health Department Accreditation Version 1.0*. Alexandria, VA. May 2011)

Public Health Regionalization. Regionalization is “a consortium of local health departments collaborating under a formal agreement to provide a specific set of services”. The goal of public health regionalization is to strengthen the public health system by creating a sustainable, regional system for equitable delivery of local public health services across a region. Working together in this way can equip each local health department to deliver the range of services their municipality requires. It also allows municipalities to

access the skills they need—when they need them (even if those skills are not resident within their own health department). Local jurisdictions can choose from different models to ensure the best fit for their unique circumstances. Larger districts have greater capacity to apply for grants and are more competitive in grant applications, potentially bringing additional resources to their municipalities. Sharing resources, greater cooperation and communication, and more standardized training will yield a stronger and better prepared local public health workforce.

Sources: [Boston University School of Public Health, Massachusetts Public Health Regionalization Project](#) and [Center for Sharing Public Health Services](#)

Appendix G

DIRECTORY OF KEY ORGANIZATIONS

Association of State and Territorial Health Officials (ASTHO). ASTHO is the national nonprofit organization representing public health agencies in the United States, the U.S. Territories, and the District of Columbia, and over 100,000 public health professionals, including, the chief health officials of these jurisdictions. ASTHO focuses on tracking, evaluating, and advising members on the impact and formation of public or private health policy and providing guidance and technical assistance on their role in improving the nation's health.

Source: <http://www.astho.org/About/>

American Public Health Association (APHA). APHA champions the health of all people and all communities and strengthens the public health profession by speaking out on public health issues and policies backed by science. APHA is a national organization that has a nearly 150-year perspective and brings together members from all fields of public health. The Massachusetts affiliate is MPHA.

Source: <https://www.apha.org/about-apha>

Center for Sharing Public Health Services (CSPHS). CSPHS is a national initiative managed by Kansas Health Institute with support from the Robert Wood Johnson Foundation focused on cross-jurisdictional sharing (CJS), building the evidence and producing and disseminating tools, methods and models to assist public health agencies and policymakers as they consider and adopt CJS approaches.

Source: <https://phsharing.org>

Coalition for Local Public Health (CLPH). Public health organizations dedicated to working together to advocate for the resources needed to promote healthy communities in Massachusetts through strong boards of health and health departments. These organizations represent over 4,900 citizens and professionals interested in supporting the Commonwealth's local public health infrastructure.

The six member organizations are:

- Massachusetts Association of Health Boards (MAHB),
- Massachusetts Association of Public Health Nurses (MAPHN),
- Massachusetts Environmental Health Association (MEHA),
- Massachusetts Health Officers Association (MHOA),
- Western Massachusetts Public Health Association (WMPHA), and
- Massachusetts Public Health Association (MPHA)

Source: <https://mapublichealth.org/clph/>

Council on Linkages Between Academia and Public Health Practice. A collaborative of 23 national organizations focused on improving public health education and training, practice, and research and leading the national initiative for setting public health professional workforce standards.

Source: <http://www.phf.org/programs/council/Pages/default.aspx>

Local Public Health Institute, (LPHI) Boston University School of Public Health (BUSPH). LPHI, funded by the MDPH, works to improve public health and preparedness capabilities and the health of the residents of the Commonwealth by creating, implementing and sustaining workforce development activities for local public health and other public health system partners.

Source: <http://sites.bu.edu/masslocalinstitute/about/about-us/>

Massachusetts Department of Environmental Protection (MDEP). MDEP is responsible for protecting the environment in the state of MA. Its areas of responsibility include preventing pollution of air, water, and ground; protecting wetlands; waste and recycling issues; regulating hazardous materials; and reducing climate change.

Source: <https://www.mass.gov/orgs/massachusetts-department-of-environmental-protection>

Massachusetts Department of Public Health (MDPH). MDPH promotes the health and well-being of all MA residents by ensuring access to high-quality public health and healthcare services, and by focusing on prevention, wellness, and health equity in all people.

Source: <https://www.mass.gov/orgs/department-of-public-health>

Massachusetts Department of Revenue (DOR). The Massachusetts Department of Revenue manages state taxes and child support. DOR also help cities and towns manage their finances.

Source: <https://www.mass.gov/orgs/massachusetts-department-of-revenue>

Massachusetts Municipal Association (MMA). The MMA is a private, non-partisan group of nonprofit organization of cities and towns that serve as a voice of cities and towns in Massachusetts. The organization's goals include public policy advocacy, membership education, intergovernmental relations, services to cities and towns, public awareness, and unity.

Source: <https://www.mma.org/>

Massachusetts Practice Based Research Networks. A Robert Wood Johnson Foundation-funded collaboration between Boston University School of Public Health, the Massachusetts Public Health Regionalization Working Group, the Institute for

Community Health, and local public health officials. The purpose of practice-based research networks is to increase the development and translation of research findings that inform improvements in public health systems and health outcomes.

Source: <http://www.bu.edu/regionalization/about-us/ma-pbrn/>

Massachusetts Public Health Regionalization Project. The project's goal is to strengthen the Massachusetts public health system by creating a state-funded regional structure for equitable delivery of local public health services across the Commonwealth. The **Massachusetts Public Health Regionalization Working Group**, as part of the project, is comprised of representatives from state government, local public health officials from cities and towns with varying populations and governing structures, legislators, and public health experts from the academic communities and is tasked to carry out the research and analysis.

Source: Massachusetts Public Health Regionalization Working Group, **Massachusetts Public Health Regionalization Project: Status Report, 2009**

http://www.bu.edu/regionalization/files/2013/07/Regionalization-status_report_9-1-09.pdf

National Association of County and City Health Officials (NACCHO). The National Association of County and City Health Officials was founded in the 1960's with the goal of assisting city and county health offices in improving the public's health while adhering to a set of core values: equity, excellence, participation, respect, integrity, leadership, science, and innovation. NACCHO membership is comprised of nearly 3,000 local health departments across the U.S. They focus on being a leader, partner, catalyst, and voice for change for local health departments around the nation.

Source: <https://www.naccho.org/about>

Public Health Accreditation Board (PHAB). The Public Health Accreditation Board (PHAB) is the national accrediting organization for public health departments. A nonprofit organization, PHAB is dedicated to advancing the continuous quality improvement of Tribal, state, local, and territorial public health departments.

Source: *Public Health Accreditation Board. Guide to National Public Health Department Accreditation Version 1.0. Alexandria, VA, May 2011*

<http://www.phaboard.org/wp-content/uploads/PHAB-Guide-to-National-Public-Health-Department-Accreditation-Version-1.0.pdf>

Public Health National Center for Innovations. (PHNCI). PHAB established PHNCI to identify, implement, and spread innovations in public health practice to help meet the health challenges of the 21st century in communities nationwide, which included the development of Foundational Public Health Services.

Source: <https://phnci.org/about>

Robert Wood Johnson Foundation (RWJF). The RWJF is the United States' largest philanthropy focused solely on health. The foundation's goal, through the use of grants, is "to improve the health and health care of all Americans." The grants focus on a range of health issues, including access to care, childhood obesity, training for doctors and nurses, and social determinants of health such as housing, violence, poverty, and food insecurity. They also issue the annual county health rankings.

Source: www.rwjf.org

Trust for America's Health (TFAH). Trust for America's Health is a non-partisan public health policy, research, and advocacy organization that envisions a nation that values the health and well-being of all and where prevention and health equity are foundational to policymaking at all levels of society. TFAH develops reports and other resources and

initiatives, and recommends policies, to advance an evidence-based public health system that is ready to meet the challenges of the 21st century.

Source: <https://www.tfah.org/about/mission-vision-statements/>

