



2017 Massachusetts State Health Assessment



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Massachusetts State Health Assessment

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Massachusetts Department of Public Health

250 Washington Street

Boston, MA 02108

617.624.6000

www.mass.gov/dph

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Letter from the Commissioner

October 2017



I am proud to present to you the 2017 Massachusetts State Health Assessment. Over the past several months, Department of Public Health staff worked in collaboration with other state agencies, along with a diverse set of stakeholders and organizations from across the state to develop this comprehensive narrative on the health status of the residents of Massachusetts.

As with any health assessment, we take stock in many positive aspects that illustrate why Massachusetts regularly ranks high in national surveys and is generally regarded as a very healthy state. Our world-class health care system, commitment to health care reform and access to care, and strong public health policies and programs all contribute to a culture that values the many factors crucial to maintaining and improving the health of our residents. Still, despite that commitment and our many improvements, it is clear that some populations in Massachusetts do not have the same opportunities to achieve optimal health and well-being. This assessment highlights many disparities in health outcomes among low-income communities, people of color, women, persons with a disability, lesbian, gay, bisexual, transgender and queer/questioning (LGBTQ) individuals, and older residents. Just a sample of those data disparities include:

- While Massachusetts has one of the lowest infant mortality rate (IMR) in the nation, racial/ethnic disparities remain. In 2014, the IMRs for Black non-Hispanic and Hispanic infants were 2.1 and 1.5 times higher than that of White non-Hispanics.

- Despite significant declines in homicide rates among youth and young adults 15-24 years of age between 2006 and 2013, disparities persist. Young Black non-Hispanic males have the highest homicide rate that is 30 times higher than that for young White non-Hispanic males.
- Lower income communities and communities of color have higher prevalence of childhood blood lead levels at or above 5 µg/dL. In particular, Black non-Hispanic and American Indian populations are disproportionately impacted and have rates of high blood lead levels almost twice those of the White non-Hispanic population.
- While the number of diagnosed HIV infections decreased by 31% from 2005 to 2014, among men, the rate of newly diagnosed HIV infection was almost 28 times higher among men who have sex with men (MSM) than among non-MSM between 2012 and 2014.
- Pregnant and postpartum women with substance use disorders are at higher levels of risk for viral infections, adverse birth outcomes, co-occurring mental health diagnoses, and fatal opioid-related overdoses. Mothers with evidence of opioid use disorder (OUD) have an opioid-related death rate more than 300 times higher than mothers without evidence of OUD.

The Massachusetts Department of Public Health, in collaboration with our colleagues across the Commonwealth, is dedicated to understanding the social determinants that contribute to these disparities and taking action to eliminate the resulting health inequities that we see in too many communities across Massachusetts. The social determinants of health are the conditions and environments in which people are born, live, learn, work, play, and age, which affects a wide range of health risks and outcomes. Collecting data on how these factors shape existing and emerging health issues helps us understand what we can do as a Commonwealth to make Massachusetts an even healthier place to live.

Massachusetts has always been a leader in tackling some of our toughest public health problems through the use of innovative, evidence-based strategies. Recent examples include our comprehensive response to the current opioid epidemic, our reform of the Determination of Need Program to infuse public health priorities into the process, and our continued support for the wider use of Community Health Workers. The hallmark of all these initiatives has been collaboration, community partnerships and a shared commitment to improving the health of all.

This assessment is a foundation for developing the next set of great ideas and strategies to ensure optimal health for all residents of this great Commonwealth, particularly for those in our most vulnerable communities.

I look forward to using this assessment and taking that next step in partnership with our sister agencies and many local partners to make improved public health possible for every community in Massachusetts.

Sincerely,



Monica Bharel, MD, MPH
Commissioner



Preface

Where individuals and families age, work, and play profoundly shapes their health.¹ In addition, disparities in health outcomes are linked with socioeconomic status, race/ethnicity, gender, sexual orientation, immigration history, and other social characteristics.² Understanding how these social, geographic and economic factors shape health is necessary to identify areas for intervention to meet the needs of the Commonwealth. Understanding the current health status of Massachusetts residents and the multitude of factors that influence health enables the identification of priorities for public health planning, existing strengths and assets upon which to build, and areas for further collaboration and coordination. The 2017 Massachusetts State Health Assessment provides a foundation for this work by presenting a broad set of prioritized indicators that paint a comprehensive portrait of the health of Massachusetts residents.

The Massachusetts Department of Public Health (MDPH) has been collecting and using data to inform policy makers and the public since 1842, the year the first statewide registration of vital records began. Since then, MDPH has implemented many interventions which brought about huge reductions in death from infectious disease, tracked the emergence of heart disease and cancer as the most prevalent causes of death today, and studied the causes and treatment of newly emerging diseases, such as eastern equine encephalitis (EEE), Lyme disease, H1N1 influenza, and others.

Today, MDPH is focused on improving access to and utilization of data for making decisions, understanding health disparities and understanding the social determinants of health, all to ensure health equity across the Commonwealth. While disparities are significant differences in outcomes between populations, inequities are the unjust distribution of resources and power between populations. Addressing inequities is an upstream approach to reducing disparities. Surveillance activities include monitoring for disparities in age, gender, race/ethnicity, and other demographic characteristics that are markers for social differences in health status. The State Health Assessment applies a Social Determinants of Health lens to its presentation, allowing the reader to understand major challenges and opportunities for achieving better health equity across all social groups.

Organization of the State Health Assessment

The MDPH State Health Assessment Coordinating Team identified the following areas of concentration for this report based upon prior experience with the 2010 State Health Assessment known as the 2010 Health of Massachusetts, and with feedback from the MDPH data team, bureau and office directors, subject matter experts as well as representatives from a variety of sectors. The content of the State Health Assessment is broken down into the following major topical categories:

1. Population Characteristics
2. Maternal, Infant, and Child Health
3. Environmental Health
4. Infectious Disease
5. Injury and Violence Prevention
6. Addiction
7. Health Systems and Health Care Access
8. Wellness and Chronic Disease

The State Health Assessment begins with an introduction, then follows providing insight into the development and how future Massachusetts State Health Assessments will be updated. It also describes the conditions impacting health, which are shaped by the social determinants. These conditions include: housing, education, employment, the built environment, the social environment, and violence/trauma.

Chapter 1 provides an overview of the demographic, social, and economic characteristics that shape the health of Massachusetts residents. Chapters two through eight describe health patterns for Massachusetts as a whole and across racial, ethnic, socioeconomic, age, gender, and/or geographic subgroups. Each chapter provides an introduction to the health topic, followed by subtopics examining trends over time, identifying where improvements have been achieved, and pinpointing where health issues remain or are emerging. A trend is the general direction of a measure, condition, or output over a period of time. Trends can go up, down, or stay the same. Each chapter identifies where racial, ethnic, socioeconomic, and geographic disparities persist to help MDPH focus and enhance strategic actions to improve the health of communities and populations with the greatest needs.

For example, Chapter 4 presents information about infectious disease including foodborne disease, healthcare-associated infections, sexually transmitted diseases, HIV, tuberculosis, vectorborne diseases, and immunization. For each subtopic, the chapter identifies selected state initiatives, programs, services or other resources that are aimed at improving health, decreasing disparities, and reducing the overall disease burden on residents. Each chapter ends by highlighting selected resources, services and programs and references cited in the narrative. There are many programs at state and local levels working to improve health. Some resources and programs are mentioned here but not all and this is not meant to be a comprehensive overview of all programs in these areas.

The appendices include a list of partners who contributed to the assessment, an abstract and a list of community health assessments and community health needs assessments completed by local public health departments and health systems, the instruments used for focus groups and key informant interviews used to inform this report.

With the guidance of the Statewide Partnership Advisory, the MDPH takes stock of the health of all people in Massachusetts every four to five years by updating the Massachusetts State Health Assessment. The 2017 Massachusetts State Health Assessment tells the story of our health today and how that has been shaped over time by our opportunities, our belonging, and our interactions with the environment. In each section of the assessment we link data on social, economic and environmental conditions with rates of disease or individual health behaviors to strengthen our understanding of what creates health and health equity.

Content for the State Health Assessment was developed with an eye toward ensuring a comprehensive overview, it's important to note that there are challenges to any such assessment of health. A few of these important considerations are described below.

Saying A Little About A Lot of Things

The assessment provides snapshots of many topics to provide an overall picture of health and the conditions that influence it. Most of the topics raised here have been studied and written about in greater detail elsewhere which can often be found in the linked references. Each chapter was written by a team of experts in the field, focusing on health indicators selected through a collaborative process of prioritization and contains links to specific cited documents where additional information about the subject matter can be found.

The Need for Categorization

Each individual population and community is unique – and each has value. Quantitative research methods, however, require creating categories for analysis and grouping people, populations, and communities in such a way that enables comparisons, but hides some of their real and important differences.

For example, we use the following mutually exclusive categories to describe race/ethnicity: White, Black, American Indian, and Asian. The Hispanic category includes persons of Hispanic ethnicity regardless of their race. The full expression of these categories is White non-Hispanic, Black non-Hispanic, American Indian, non-Hispanic, Asian non-Hispanic, and Hispanic. The only exception is when using data from some national surveys like the American Community Survey that categorize race as Latino.

In addition, each of the main topic sections contains topics that could also be categorized in one of the other sections. Many issues overlap, or have different dimensions, such that they could fit in multiple places or could form a topic of their own. For example mental health has been recognized as a leading health priority in the Commonwealth through a crosswalk of 42 community health assessments and community health needs assessment but does not have its own chapter. Instead, the content pertaining to mental health can be found throughout the assessment including in chapters 2, 5, 6, 7, and 8. Similarly, occupational health had its own chapter in the 2010 Health of Massachusetts but has been woven throughout the 2017 Massachusetts State Health Assessment specifically in chapters 3, 5, 7, and 8.

This state assessment can only start the conversation about health in the community, using broad categories to shape the story of health in the state. The work of advancing health equity requires engaging with people and communities to more fully understand their unique circumstances and shape action for change.

Using Technical Language

Every effort was made with this report to use plain language whenever possible, but technical language is necessary in certain cases. Terms such as “age-adjusted”, “amenable mortality”, “confidence intervals”, “premature mortality”, “incidence,” and “life expectancy” are examples of these kinds of terms. Many of these terms are defined near the text, in the endnotes, or in the data sources section in the Appendix.

Figures, Sources, and Figure Notes

All figures and maps are called “Figures” in the State Health Assessment. Below the figure information is provided on the source of the data and, when applicable, whether the data shown have statistically significant differences or applicable notes.

Data Sources

Data for the State Health Assessment were obtained from a variety of sources. Unless otherwise noted, the indicators are for calendar years. Hospitalization data is for fiscal year, unless otherwise noted. The indicators included in the State Health Assessment were prioritized by Bureaus within MDPH and were selected based upon the impact of each indicator on the health and well-being of the Commonwealth as well as feedback from the Statewide Partnership Advisory.

Data from MDPH programs, disease registries, survey data, to facilities data and specific program records were included. Major sources of data for the 2017 Massachusetts State Health Assessment include:

- Demographic, social, and economic indicators from the 2011-2015 American Community Surveys (ACS), which were conducted by the US Census Bureau.
- Data on births, deaths, environmental risk factors, infectious diseases, injuries, and the supply of primary care physicians, nurses, pharmacists, emergency medical technicians, community health workers, and dental health providers are from data sources managed by the MDPH.
- Data on hospitalizations and emergency department visits are obtained from the Center for Health Information and Analysis.
- Self-reported chronic conditions and health behavior indicators are drawn from three main health surveys, the Massachusetts Behavioral Risk Factor Surveillance System (BRFSS) survey of adults 18 years of age and older and the Youth Risk Behavior Surveillance System (YRBSS) and Massachusetts Youth Health Survey (YHS) survey of students in grades 9 to 12. These datasets are run by MDPH and Massachusetts Department of Elementary and Secondary Education (ESE). When analyzed by the MDPH, there will be no source cited; however, ESE will be cited when they have conducted the analysis.
- Data on reportable infectious diseases and other conditions are captured by the Massachusetts Virtual Epidemiologic Network (MAVEN), an integrated, web-based surveillance and case management system.
- Environmental data are captured by the Environmental Public Health Tracking (EPHT) data portal.
- Data on women's health before, during, and after pregnancy are collected using the Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS) survey.

- Data on children's health are drawn from national surveys administered by the Centers for Disease Control and Prevention including the National Survey of Children's Health (NSCH), National Survey of Children with Special Health Care Needs (NS-CSHCN), and the National Immunization Survey (NIS)

Limitations

The health indicators in the 2017 Massachusetts State Health Assessment provide an important lens into the health and wellbeing of Massachusetts residents. However, as with most health assessments, the indicators included in this assessment have several limitations.

- There is a delay between time of data collection or reporting, analysis, and availability of data for public reporting. Indicators presented in this assessment are from the most recent year(s) available. While some health indicators may be based upon older data, they are the best available data at the time that this assessment was written and provide an important snapshot into the health of the residents of the Commonwealth.
- A health condition may be characterized by several indicators drawn from different data sources. To provide a comprehensive state health assessment, decisions had to be made regarding which indicators to report.
- For some health conditions for which a direct measure is not available, several indicators may be useful for characterizing the magnitude, severity, and/or distribution of the health condition. For example, the total number of Massachusetts residents with heart disease is not available. To provide an assessment of the prevalence and distribution of heart disease across the Commonwealth, this assessment includes several measures of heart disease: self-reports of being diagnosed with heart disease, high blood pressure, and cholesterol collected as part of the Massachusetts BRFSS and data from reported hospital emergency department visits and hospitalizations.
- Some health indicators are not available for some vulnerable populations, such as homeless individuals, persons with a disability, tribal nations, sexual minorities, racial and ethnic groups, and/or town populations. When health indicators are available for a specific population of interest, these data are usually presented for a multi-year period in order to generate stable estimates. Recognizing this limitation of these secondary data, key informant interviews and focus group discussions with representatives of these vulnerable populations provided valuable insights into the health experiences and concerns that may not be available through secondary data sources.
- Additional data limitations by chapter can be found in **Appendix F**.

Main Limitations to this Assessment

- Data availability time lag
- Lack of available indicators
- Indicators not included due to limited space
- Data unavailable for specific populations

Throughout the assessment, additional considerations of specific health indicators or gaps in the data or knowledge about the topic are presented below the figure presenting the indicator.

Abbreviations

Each chapter includes abbreviations defined in that individual chapter. Below is a list of the most common abbreviations used in this State Health Assessment.

ACS	American Community Survey
BCHAP	Bureau of Community Health and Prevention
BFHN	Bureau of Family Health and Nutrition
BHCSQ	Bureau of Health Care Safety and Quality
BHPL	Bureau of Health Professions Licensure
BIDLS	Bureau of Infectious Diseases and Laboratory Science
BORIM	Board of Registration in Medicine
BRFSS	Massachusetts Behavioral Risk Factor Surveillance System
BSAS	Bureau of Substance Addiction Services
CDC	Centers for Disease Control and Prevention
CHIA	Center for Health Information and Analysis
MAVEN	Massachusetts Virtual Epidemiologic Network
MDMH	Massachusetts Department of Mental Health
MDPH	Massachusetts Department of Public Health
ODMOA	Office of Data Management and Outcomes Assessment
OHE	Office of Health Equity
OLRH	Office of Local and Regional Health
OPEM	Office of Preparedness and Emergency Management
PRAMS	Pregnancy Risk Assessment Monitoring System
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children
YHS	Youth Health Survey
YRBS	Youth Risk Behavior Survey

**Name Change:* The Bureau of Substance Abuse Services was changed to the Bureau of Substance Addiction Services (BSAS) as a result of language included in the Massachusetts State Fiscal Year 2018 budget.

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Eileen Sullivan, Office of the Commissioner

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Natalie Nguyen Durham, Office of Data Management and Outcomes Assessment

Candace Nelson, Office of Data Management and Outcomes Assessment

Rodrigo Monterey, Office of Health Equity

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Glynnis LaRosa, Bureau of Infectious Disease & Laboratory Sciences and Performance Management and Quality Improvement

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Bureau of Infectious Disease and Laboratory Sciences

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Communications

Tom Lyons (Director), Suzanne Crowther, Shaye Erimez and John Jacob

Office of Data Management and Outcomes Assessment

Natalie Nguyen Durham* (Director), Candace Nelson*, Susan Gershman, and Maria McKenna

Office of the General Counsel

Margaret Cook (General Counsel) and James Ballin

Office of Health Equity

Rodrigo Monterrey* (Acting Director) and Rachel Tanenhaus*

Office of Local and Regional Health

Ron O'Connor (Director) and Erica M. Piedade

Office of Preparedness and Emergency Management

Kerin Milesky (Director), Donna Quinn, and Samantha Stone

Problem Gambling Services

Victor Ortiz (Director)

Performance Management and Quality Improvement

Antonia Blinn* (Director), Glynnis LaRosa, and Paul Oppedisano*

Registry of Vital Records and Statistics

Dean DiMartino (Acting Registrar), Karin Barrett*, and Sharon Pagnano*

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- Massachusetts Department of Elementary and Secondary Education
- Massachusetts Department of Mental Health
- Massachusetts Department of Transportation
- Massachusetts Department of Environmental Protection

Statewide Partnership Advisory, Key Informants and External Stakeholders

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References

¹ Robert Wood Johnson Foundation. A new way to talk about the social determinants of health. Available at: <http://www.rwjf.org/content/dam/farm/reports/reports/2010/rwjf63023>. Accessed July 2, 2017.

² Centers for Disease Control and Prevention. CDC health disparities and inequalities report: United States, 2013. *Morbidity and Mortality Weekly Report*. 2013; 62(3); 1-187. Available at: <https://www.cdc.gov/mmwr/pdf/other/su6203.pdf>. Accessed July 2, 2017.