Massachusetts
State Health Improvement Plan
(SHIP)

October 31, 2014

Table of Contents

Letter from Commissioner Bartlett

Dear Colleagues

I am pleased to present the 2014 Massachusetts Department of Public Health's State Health Improvement Plan (SHIP) – a five year Strategic Plan for improving the health of all people in the Commonwealth of MA.

The SHIP was created through the teamwork of subject matter experts from within MDPH and numerous dedicated representatives of community-based organizations throughout the state. Collaboratively, these public health leaders evaluated the 2010 Health of Massachusetts report and multiple additional data sources, as well as the goals of the National Prevention Strategy and Healthy People 2020 to identify seven domains of public health priority that demonstrate achievable opportunity for improvement by 2020.

Massachusetts' SHIP emphasizes three areas of focus to capitalize upon in order to meet the goals of improvement in health outcomes.

- Health equity is a major priority in all health priority domains

- Health reform initiatives at the national and state level depend upon population health management and prevention

- Strong public health infrastructure is essential in order to achieve the priority health outcomes

I wish to extend my thanks and appreciation to the many partners who dedicated their energy to this important initiative, in particular to the members of the SHIP Advisory Council, as well as the MDPH staff who contributed so much experience, effort and wisdom to the process and the product.

Cheryl Bartlett, RN

Commissioner

Executive Summary

The MA State Health Improvement Plan, or SHIP, is an action-oriented strategic plan that outlines the key health and health systems priority areas for the state, and how these priority areas will be addressed to ultimately improve the health of all people in the Commonwealth. The MA SHIP was created through a statewide, collaborative planning process that engages partners and organizations to develop, support, and implement the plan. This development process enables loosely-networked system partners to coordinate for more efficient, targeted and integrated health improvement efforts. The SHIP serves as a **vision** for health and a **framework** for organizations to use in leveraging resources, engaging partners, and identifying their own priorities and strategies for collective action towards improving community health and achieving health equity.

This SHIP was developed under the leadership of the Massachusetts Department of Public Health (MDPH) in cooperation with dozens of public and private sector leaders to establish a vision, direction, and outline with clear priorities and measureable objectives to improve health in the Commonwealth. The SHIP serves as a tool not just for MDPH, but also for health providers, government agencies, community-based organizations, advocates, academics, policy makers, and other stakeholders committed to health equity and continued success in implementing health reform.

The health system is changing rapidly in Massachusetts. Provider systems are consolidating. Payers, providers, and regulators are developing and adapting to new payment methods. Executives of existing and emerging Accountable Care Organizations are exploring new treatment and payment models including population health management, quality improvement initiatives, and partnerships. All stakeholders—including patients, providers, payers, consumer advocates, unions, and policy makers—are seeking both to understand and shape the new reality as it evolves.

The Massachusetts SHIP addresses the overall health of the state's population and provides a frame of reference to guide policy making and resource allocation. It demonstrates how public health prevention efforts can be instrumental to achieving health care reform objectives. It offers detailed objectives and strategies for addressing seven priority health areas identified through assessment of population health data. Each of the seven areas, while distinct, is related to the others. Addressing the SHIP priorities requires coordinated action involving not only health care providers and public health specialists, but also partners outside of the traditional health sphere whose activities influence population health.

Principles and Beliefs for Action

This SHIP reflects: community, partner, and MDPH priorities; the subject matter expertise within MDPH; and a manageable set of priorities and objectives that can be measured and tracked over the course of the plan. In designing the SHIP to meet all of the requirements for accreditation, subject matter experts from the Advisory Committee and MDPH outlined the following principles, the first two of which distinguish Massachusetts nationally:

- We will reduce disparities across all identified domains;
- We will demonstrate the value of public health prevention initiatives in reducing health care costs; and
- We will measure and document change/improvement across all domains.

In alignment with these principles, the SHIP embraces the following six core beliefs:

1. Health is not merely the absence of disease or infirmity.
2. Health equity and multi-sector partnerships are prerequisites for achieving the objectives of health care reform and securing and sustaining population health.
3. Massachusetts is uniquely positioned to demonstrate the practicality and value of an integrated public health and health care system.

4. "Upstream solutions" (e.g., systems analysis and environmental changes at the community and regional levels) are required to achieve Health Reform objectives.

5. Continuous Quality Improvement is a path to public health performance excellence.

6. Evidence-based practices and promising innovations that provide the best opportunities for cost effective results should be integrated into Continuous Quality Improvement (CQI) activities.

Structure of the Massachusetts State Health Improvement Plan

The SHIP has been organized into two parts:

- **Part 1:** Public Health System Transformation: This is an essential, foundational priority for the SHIP, as moving the needle on any of the related health topic areas and for key health disparities requires that a robust and integrated infrastructure be in place.

- **Part 2:** Health Topic Domains: These 7 health topics are those for which we have data to demonstrate a key area of need, as well as community and political support to engage in collective action for demonstrable impact.

The following outlines the Domains and Standards for the SHIP:

Part I: Public Health System Transformation

Health Systems Infrastructure

Facilitate public health systems transformation to achieve equity and accountability.
Assure health equity and health reform goal attainment through robust systems and resources for monitoring, protecting, and promoting the health and well-being of the entire Massachusetts population.

Part II: Health Issues/Topics

Domain 1: Active Living, Healthy Eating, and Tobacco-Free Living

Ensure that all Massachusetts residents minimize risk for disease by eating a nutritious diet, engaging in adequate physical activity, maintaining a healthy weight, and eliminating tobacco use and exposure.

Standard 1A: Ensure that all MA residents eat a nutritious diet.

Standard 1B: Ensure that all MA residents engage in adequate physical activity.

Standard 1C: Support all MA residents in leading tobacco-free lives.

Domain 2: Chronic Disease Prevention and Control

Reduce the incidence and impact of chronic disease to optimize the health and quality of life of all populations across the lifespan.

Standard 2A: Improve participation in recommended cancer screenings.

Standard 2B: Improve prevention, management and control of chronic disease and associated risk factors.

Domain 3: Infectious Disease Prevention and Control

Reduce morbidity and mortality related to infectious disease.

Standard 3A: Reduce morbidity related to vaccine preventable infections.

Standard 3B: Reduce the incidence of tick-borne infections among MA residents.

Standard 3C: Decrease morbidity related to sexually transmitted infections.

Standard 3D: Reduce morbidity and mortality related to HIV/AIDS.

Standard 3E: Reduce mortality related to viral hepatitis.

Standard 3F: Reduce morbidity related to healthcare acquired infections.

Standard 3G: Reduce morbidity related to foodborne infections.

Domain 4: Substance Abuse Prevention, Intervention, Treatment and Recovery

Promote mental and emotional health and reduce drug and alcohol abuse through prevention, treatment, and integration of care.

Standard 4A: Prevent the development of alcohol and substance use disorders.

Standard 4B: Strengthen local capacity to prevent substance abuse.

Standard 4C: Improve diversity among individuals served.

Domain 5: Injury, Suicide and Violence Prevention

Prevent injuries, suicide and violence, and promote trauma-informed care across all settings, particularly in clinical and public health services.

Standard 5A: Reduce unintentional injury.

Standard 5B: Reduce suicides and suicidal behavior for all ages.

Standard 5C: Reduce work-related injury and violence.

Standard 5D: Reduce gender based and youth violence.

Standard 5E: Reduce health care facility Serious Reportable Events.

Domain 6: Maternal, Child, and Family Health Promotion

Ensure the health and well-being of women, children and families.

Standard 6A: Reduce teen births in communities with the highest rates.

Standard 6B: Improve maternal health and infant outcomes.

Standard 6C: Ensure positive early childhood health and development.

Domain 7: Environmental Risk Factors and Health

Prevent and reduce environmental risk factors (or hazards) in home, school, work and community environments to achieve optimal health and wellbeing.

Standard 7A: Reduce exposure to lead in children and adults to prevent deleterious health impacts.

Standard 7B: Improve indoor environmental quality in homes and public buildings to reduce respiratory symptoms and diseases.

Standard 7C: Reduce foodborne illness.

Standard 7D: Increase the capacity of local and state health officials to address environmental health issues through enhanced training.

Relationship Between the SHIP and Other Guiding Documents and Initiatives

The Massachusetts SHIP is closely aligned with the National Prevention Strategy, Healthy People 2020 objectives, the Community Guide, the Centers for Disease Control and Prevention public health priorities (Winnable Battles), and with other existing Commonwealth of Massachusetts and MDPH Plans. The SHIP was designed to complement and build upon other guiding documents, plans, initiatives, and coalitions already in place to improve the public health of the residents of Massachusetts.

A Framework for Action

Integrating Public Health and Health Care to Achieve the "Triple Aim" Objectives of Health Reform

Public health is what society does collectively to assure the conditions for people to be healthy.[1]Population health is defined as the health outcomes of a group of individuals, including not only the overall health of the population but the distribution of health outcomes within the group.[2] Population health requires not only universal access to high quality, affordable, culturally responsive health care services, but also policies, programs, and infrastructure to prevent injury and disease from occurring in the first place.

As the first state in the nation to embark on health reform, Massachusetts is in the vanguard of integrating public health expertise in prevention and population health management into the healthcare delivery system. The vision put forth in the Affordable Care Act (ACA) and Chapter 224 of the Acts of 2012, An Act improving the Quality of Health Care and Reducing Costs Through Increased Transparency, Efficiency and Innovation, guided the team of experts who helped refine the Massachusetts State Health Improvement Plan (SHIP). Through the SHIP, these experts sought to maximize three overarching goals:

1. Improve health
2. Reduce healthcare costs, and
3. Improve the experience of care for all residents of the Commonwealth[i].

These elements of the Triple Aim, as conceived by the Institute for Healthcare Improvement, have been used widely as a framework for optimizing population health and health system performance. Progress toward achieving the Triple Aim in the Commonwealth will require the efforts of state and local health departments, clinical systems, and community-based organizations, as well as a reliance on a health information infrastructure that supports them all.

The Massachusetts SHIP provides the framework for success in executing the vision the Commissioner of the Department of Public Health (MDPH) has laid out for the citizens of the Commonwealth. The Department and its partners will draw on the SHIP priorities and strategies in constructing its own Strategic Plan, which will guide the efforts of the DPH for the next 3-5 years, and set the standard for how all State Health Departments can play a pivotal role in improving the healthcare delivery system's ability to transform itself proactively under health reform.

This SHIP was developed under the leadership of the MA DPH in cooperation with dozens of public and private sector leaders to establish a vision, direction, and outline with clear priorities and measureable objectives to improve health in the Commonwealth. MDPH hopes that the SHIP will serve as a helpful tool not just for MDPH, but also for healthcare providers and payers, government agencies, community-based organizations, advocates, academics, policy makers, and other stakeholders committed to health equity and continued success with implementing health reform.

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[i] Throughout this document, "all residents" is inclusive of those with disparities/disproportionate burden, those not served or underserved, those at-risk, and those hard to reach.

Context for Action

It is important to put the SHIP in the context of state, national, and international initiatives to improve population health through the most effective and efficient mobilization of available resources. These initiatives include:

- Massachusetts Governor Deval Patrick's Executive Order 540, issued in February 2012, to promote improved performance management across all agencies of government

- Chapter 224 of the Acts of 2012, the state's major health care cost containment law, adopted to enhance quality of care and contain costs in the wake of achieving near universal access to health insurance

- The federal Patient Protection and Affordable Care Act (ACA), based on the landmark 2006 Massachusetts health care reform law, with numerous provisions to promote integration of public health and health care services

- The National Prevention Strategy, adopted as a requirement of the ACA, to establish a national framework for preventing injury and disease, including four areas of focus: healthy and safe community environments, clinical and community preventive services, empowered people, and elimination of health disparities

- Accreditation of state, local, and tribal health departments by the Public Health Accreditation Board, a national accrediting body established by the US Centers for Disease Control and Prevention in cooperation with leading national public health philanthropies and professional organizations

Opportunities and Challenges in State Health Care Reform

There has never been a better time in the history of Massachusetts to align public health and health care systems to prevent injury and disease and achieve the "Triple Aim" objectives of federal and state health care reform: controlling costs, improving the experience of care, and improving health outcomes for the entire population.[3]

Implementation of state health care reform under Chapter 224 provides an immediate, unprecedented opportunity to improve quality of care, manage costs, and improve population health in ways that require leadership and support from the Department of Public Health and the broader public health system. The Massachusetts SHIP was developed with attention to several objectives and challenges embedded explicitly in Chapter 224, including:

1. New health planning in cooperation with the Executive Office of Health and Human Services, including development of a State Health Plan, intended to help guide policy making in cooperation with other public entities to reflect a number of goals, including:

   a. Improve access to community based preventative services and patient centered primary health care; and

   b. Improve integration of mental health and behavioral health services with traditional medical care; and

2. Support for achieving state health care cost growth benchmarks—as well as quality and outcome goals—through MDPH's licensing and regulatory authority over health care providers and through other activities listed below

3. Management of the Prevention and Wellness Trust Fund (PWTF), a four-year, $57 million pilot project created under Chapter 224 to help meet health care cost growth benchmarks, address health disparities, and reduce preventable injuries and diseases through local partnerships integrating clinical care and community based services. The Trust supports community-based partnerships including municipalities, healthcare systems, businesses, regional planning

organizations, and schools. These groups work together to provide research-based interventions that will:

    a. Reduce rates of the most prevalent and preventable health conditions;

    b. Increase healthy behaviors;

    c. Increase the adoption of workplace-based wellness or health management programs; and

    d. Address health disparities.

4. Support for utilizing Community Health Workers and community-based services, such as to

    a. Improve access to services and quality of care for at risk populations covered by Accountable Care Organizations (ACOs);

The Massachusetts SHIP was also developed in the context of the Commonwealth's State Innovation Model grant award, which is designed to further advance the goals of health system transformation.

The health system is changing rapidly in Massachusetts. Provider systems are consolidating. Payers, providers, and regulators are developing and adapting to new payment methods. Executives of existing and emerging Accountable Care Organizations are exploring new treatment and payment models including population health management, quality improvement initiatives, and partnerships. All stakeholders—including patients, providers, payers, consumer advocates, unions, and policy makers— are seeking both to understand and shape the new reality as it evolves.

The Massachusetts SHIP addresses the overall health of the state's population and provides a frame of reference to guide policy making and resource allocation. It explains how the infrastructure of public health is necessary to achieve health care reform objectives. It offers detailed objectives and strategies for addressing seven priority health areas identified through assessment of population health data. Each of the seven areas, while distinct, is related to the others. Addressing the SHIP priorities requires coordinated action involving not only health care providers and public health specialists, but also partners outside of the traditional health sphere whose activities influence population health.

Principles and Beliefs for Action

This SHIP reflects: community, partner, and MDPH priorities; the subject matter expertise within MDPH; and a manageable set of priorities and objectives that can be measured and tracked over the course of the plan. In designing the SHIP to meet all of the requirements for accreditation, subject matter experts from the Advisory Committee and MDPH outlined the following principles, the first two of which distinguish Massachusetts nationally:

- We will reduce disparities across all identified domains;

- We will demonstrate the value of public health prevention initiatives in reducing health care costs; and

- We will measure and document change/improvement across all domains.

In alignment with these principles, the SHIP embraces the following six core beliefs:

1. **Health is not merely the absence of disease or infirmity.** The SHIP promotes the definition of health developed by the World Health Organization which is "a state of complete physical, mental and social well-being."[4]

2. **Health equity and multi-sector partnerships are prerequisites for achieving the objectives of health care reform and securing and sustaining population health**. There are wide variations in quality and scope of available public health services among cities, towns, and

regions of Massachusetts and indefensible health disparities based on race, ethnicity, and other demographic factors including gender, sexual orientation, age, disability, income, education, language, and residence. Action is required to correct these imbalances and promote optimal population health. Health equity is defined as the attainment of the highest level of health for all people.[5] In order to eliminate health disparities, improve health outcomes, and control unsustainable and rising health care costs, we must marshal political will and human and capital resources to promote social and economic justice. This approach acknowledges the role of racism and other systems of oppression in producing persistent, costly, unsupportable health disparities. It requires addressing social determinants of health, including safety, education, income security, environmental quality, safe and healthful workplaces, housing, transportation, and appropriate services across the life span. Since most of these areas are outside of the jurisdiction of governmental public health agencies, partnerships with other public and private stakeholders are required for progress.

3. **Massachusetts is uniquely positioned to demonstrate the practicality and value of an integrated public health and health care system.** As a result of the state's 2006 health care reform law, 97 percent of the state's population has health insurance, far higher than any other state in the nation. Access to insurance, however, does not necessarily ensure access to quality, affordable, culturally appropriate health services. Moreover, access to health care is inadequate to prevent epidemic chronic diseases from overwhelming the capacities of health providers and diverting precious resources from investments in education, transportation, environmental protection, social services, business development and worker income. Innovation in linking clinical and community prevention through the work of ACOs and creative payment mechanisms offers tremendous promise not only for the health and economy of Massachusetts, but also the nation.

   Behavioral Health Integration

   Similarly, the SHIP envisions dramatic improvement in integrating behavioral health care with traditional medical services. Providers, patients, advocates, and policy makers are struggling to address the treatment challenges and cost implications of co-morbidities and the stigmas associated with mental illness, addiction, and other behavioral health conditions. Chapter 224 created the Health Planning Council, which is charged with creating a State Health Plan that includes the location, distribution and nature of all health care resources in the Commonwealth and will include recommendations for the appropriate supply and distribution of health services and other resources. In 2014 the Council is focusing its efforts on behavioral health, creating an inventory and location of services and documenting current capacity to meet demand. The plan, developed in cooperation with the Department of Mental Health and other stakeholders, will be widely disseminated to help guide efforts of health care and public health system partners working together to implement objectives of the SHIP.

   Using Data to Support Health Reform Implementation

   Because of its responsibility for population health surveillance, public health has the potential, given adequate resources, to lead evaluation of the effectiveness of health care system innovation. Through a partnership with the Center for Health Information and Analysis (CHIA), MDPH is developing a health data warehouse that will have the capacity to integrate All Payer Claims Data with over three dozen public health and demographic data bases. Improved research capacity, combined with strategic partnerships and implementation of health planning authority, put the Massachusetts public health and health care systems on the threshold of a new era of performance management and quality improvement.

   Community Partnerships and Accountability

For health reform to be truly successful, health care organizations will not only need to engage with public health partners at the state and local levels, but also directly with the communities they serve. One of the most daunting challenges of SHIP implementation will be investment in community capacity building to ensure that at risk populations are organized and able to participate in policy making and service review, to make "room at the table" for community-based organizations engaged in organizing and advocacy to address social determinants of health, and to establish accountability of providers to their communities through collaborative planning and decision making over resource allocations.

The Affordable Care Act provides the framework for such collaboration through IRS requirements for hospitals to conduct Community Health Needs Assessments every three years in cooperation with community partners, and to invest hospital community benefit resources to address identified needs. Additional innovation in this sphere can establish Massachusetts as a national leader in moving towards a community integrated model of health system transformation.

4. **"Upstream solutions" are required to achieve Triple Aim objectives.** Considerable work in public health is devoted to policy development and implementation, or "changing the context" in which people live and make health-related decisions (see the CDC Health Impact Pyramid, below). Systems analysis and environmental changes at the community and regional levels are required to promote population health, especially considering the practical challenges people often face in accessing care or following recommendations of licensed clinical providers. The SHIP includes numerous strategies designed to promote institutional and community action, not just "downstream" approaches to treating diseases, injuries, and conditions after they occur.
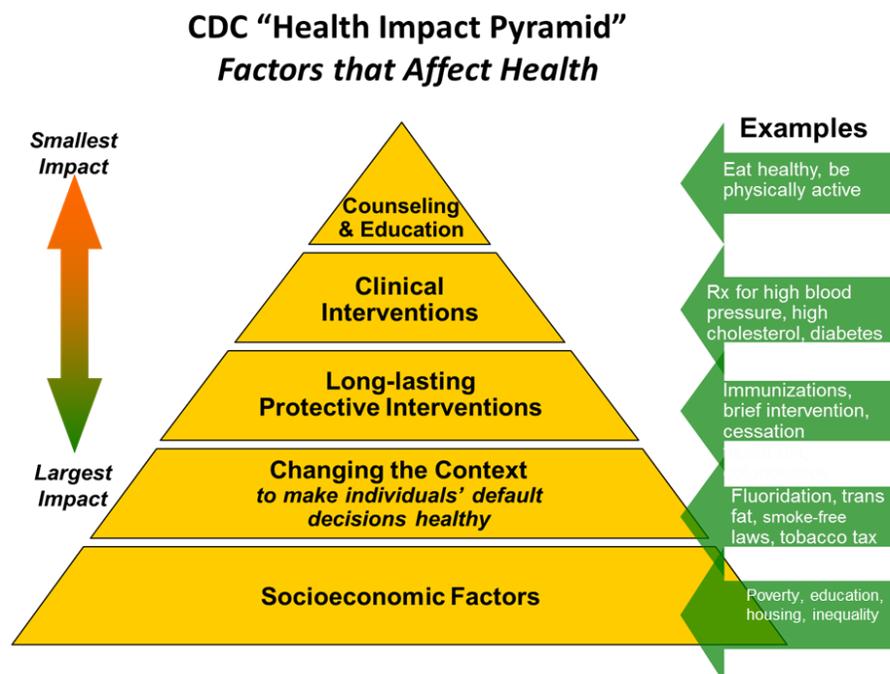
Source: Frieden, TR. A Framework for Public Health Action: The Health Impact Pyramid. *Am J Public Health*. 2010 Apr;100(4):590-5.

5. **Continuous Quality Improvement is a path to public health performance excellence.** The CDC defines performance improvement as a positive change in capacity, process and outcomes of public health as practiced in government, private, and voluntary sector organizations. Performance improvement can occur system-wide as well as within individual

organizations that are part of the public health system. It involves strategic changes to address public health system (or organizational) weaknesses and the use of evidence to inform decision-making.

6. **Evidence-based practices and promising innovations that provide the best opportunities for cost effective results should be integrated into Continuous Quality Improvement (CQI) activities.** The SHIP was developed in cooperation with dozens of Subject Matter Experts from within and outside of MDPH to assure goals, standards, measurable objectives, and strategies were based on the most current available population health data and intervention research. Given the rapid pace of health system change, especially in Massachusetts, the SHIP should be modified as a work in progress as new research and practice models with demonstrated effectiveness become available.

Performance improvement can be achieved through the practice of "performance management." This practice involves the strategic use of performance measures and standards to establish performance targets and goals, to prioritize and allocate resources, to inform managers about needed adjustments or changes in policy or program directions to meet goals, to frame reports on the success in meeting performance goals, and to improve the quality of public health practice.

Vision of the Massachusetts State Health Improvement Plan

A vision is a statement of the preferred future we hope to create. The SHIP Advisory Group drafted a vision statement, which was then reviewed, refined, and confirmed by MDPH leadership.

In the context of this historical opportunity to better integrate public health and health care, it is our vision that this SHIP will be a means to ensure:

A state of optimal health and well-being for all people in Massachusetts, supported by a strong public health infrastructure and health care delivery system that is:

- informed by engagement with diverse community partners
- aligned with and accountable to improvements in key health indicators, and
- committed to driving transformation to promote health equity and reduce health disparities

Orientation to the Massachusetts State Health Improvement Plan

What is a State Health Improvement Plan?

A State Health Improvement Plan, or SHIP, is an action-oriented strategic plan that outlines the key health and health systems priority areas for the state, and how these priority areas will be addressed to ultimately improve the health of all people in that state. SHIPs are created through a statewide, collaborative planning process that engages partners and organizations to develop, support, and implement the plan. The development of a SHIP enables loosely-networked system partners to coordinate for more efficient, targeted and integrated health improvement efforts. A SHIP is intended to serve as a vision for health and a framework for organizations to use in leveraging resources, engaging partners, and identifying their own priorities and strategies for collective action towards improving community health and achieving health equity.

State Health Assessment

From its inception, the process of compiling the SHIP has been informed by data on the health status of all who live and work in Massachusetts. In 2010 MDPH published, *The Health of Massachusetts*, a comprehensive assessment of the health of the Commonwealth. This report compiled data from over fifty sources to describe the state's health status and areas of health improvement, as well as the factors that contribute to the health challenges. The SHIP process included an update of many of the data sources that were a part of the earlier report, including key informant interviews with Tribal experts. Included in Appendix C is an Overview Data Matrix on Health Behaviors and Outcomes. The categories and databases included in the matrix were selected with input from the SHIP Advisory Committee. The Matrix was presented and discussed during the deliberations in the Advisory Group and the planning retreats. The updated health assessment informs the health improvement planning process. We are committed to continuing an ongoing cycle of assessing health and planning and implementing activities to improve health based on health status data.

Going from Plan to Action

The SHIP is designed to be a broad, strategic framework for community health, and should be modified and adjusted as conditions, resources, and external environmental factors change. This SHIP is developed and written in a way that engages multiple perspectives in the hope that all community groups and sectors – private and nonprofit organizations, government agencies, academic institutions, community- and faith-based organizations, and individuals – can unite to improve the health and quality of life for all people who live, work, and play in the Commonwealth of Massachusetts.

The SHIP reflects a commitment of partners and stakeholders to collaborate in addressing shared issues in a systematic and accountable way. The next phase of the Massachusetts SHIP will involve broad implementation of the strategies identified in the plan, and monitoring of the SHIP's indicators. This phase will include the implementation of clear communication strategies, a strong evaluation component, ongoing partnership, work group and coalition development strategies, as well as cross sector project management and leadership.

See Appendix H for How You Can Use This Plan.

SHIP Structure

The structure of the SHIP includes an integrated mix of Health Systems and Health Topic issues. The SHIP Advisory Group recommended that strategies approach chronic disease through prevention and key risk factors, resulting in a focused, action-oriented plan that:

- Has a limited number of priorities and measurable objectives
- Identifies key "levers" that public health can influence and/or move
- Balances vision and transformation with feasibility
- Articulates a 5-year time horizon but builds in interim and 3-year benchmarks with opportunity for mid-course correction
- Has a strong focus on inclusiveness
- Defines a target year for improvements in all baseline measures for each of the SMART objectives
- Uses both qualitative and quantitative measures to assess progress and performance (especially in the case of developmental objectives)

The SHIP is divided into two main parts, with Part 1 focusing on the public health and health infrastructure required to support advancements on key health topics, and Part 2 focusing on the health topic domains as determined by a rigorous priority setting process (see Appendix G for prioritization tools used by Coalition members and Subject Matter Experts).

Part I: Public Health System Transformation: This is an essential, foundational priority for the SHIP, as moving the needle on any of the related health topic areas and for key health disparities requires that a robust and integrated infrastructure be in place.

Part II: Health Topic Domains: These 7 health topics are those for which we have data to demonstrate a key area of need, as well as community and political support to engage in collective action for demonstrable impact.

An icon ⊜ has been used throughout the document to highlight critical health equity issues.

Guide to Strategic Domains of the Massachusetts State Health Improvement Plan

The following table outlines the eight domains (seven health topic domains and one for public health infrastructure) for the State Health Improvement Plan, and each domain's related standards and measures, as depicted below. These eight domain areas were identified through close examination of data, topics in Healthy People 2020, and dialogue with essential partners in health. The topics in Part 2 are not listed in priority order.

STANDARDS	MEASURES
Part I: Public Health System Transformation **Health Systems Infrastructure** **Facilitate public health systems transformation to achieve equity and accountability.**	
Assure health equity and health reform goal attainment through robust systems and resources for monitoring, protecting, and promoting the health and well-being of the entire Massachusetts population.	Systems Measure 1: By December 31, 2015, create a Public Health Data Warehouse to maintain and improve surveillance capacity, and increase the accessibility of data for state and local public health activities, for evaluation of key public health initiatives, and for the SHIP objectives.
	Systems Measure 2: By December 31, 2015, enhance the capacity of local health departments to respond to public health needs.
	Systems Measure 3: By December 31, 2015, establish and maintain a system to support and provide technical assistance to a network of community based collaborative partnerships across Massachusetts to promote public health.
	Systems Measure 4: By June 30, 2017, establish six regional health and medical coordinating coalitions that will support and enhance the ability of the Commonwealth to prepare for, respond to, recover from, and mitigate the impact of public health and medical threats, emergencies and disasters, including acts of terrorism.
	Systems Measure 5: Develop a Public Health Workforce Development Plan (e.g., PM/QI including regulatory oversight) to increase public health workforce capacity for Massachusetts, including quantity, quality, and diversity of workforce, by December 2015.
	Systems Measure 6: Increase Massachusetts' public health licensing and regulatory enforcement capacity (e.g., Health Planning, DON) by December 2015.

STANDARDS	MEASURES	
Part II: Health Issues/Topics		
Domain1: Active Living, Healthy Eating, and Tobacco-Free Living		
Ensure that all Massachusetts residents minimize risk for disease by eating a nutritious diet, engaging in adequate physical activity, maintaining a healthy weight, and eliminating tobacco use and exposure.		
Standard 1A: Ensure that all MA residents eat a nutritious diet.	Measure 1.1:	Increase the relative percentage of adults, adolescents, and children that report consuming 5 servings of fruits and vegetables daily by 2%.
	Measure 1.2:	Increase the relative percentage of adolescents and children who report consuming no more than one sugar-sweetened beverage daily by 2%.
Standard 1B: Ensure that all MA residents engage in adequate physical activity.	Measure 1.3:	Increase the relative percentage of adults, adolescents, and children who engage in daily moderate to vigorous physical activity as per CDC recommendations by 3%.
Standard1C: Support all MA residents in leading tobacco-free lives.	Measure 1.4:	Reduce the relative percentage of adults who are current smokers by 10%.
	Measure 1.5:	Reduce the relative percentage of tobacco use among high school students by 10%.
	Measure 1.6:	Reduce the relative percentage of adults who report exposure to secondhand smoke of more than 1 hour per week by 10%.
Domain 2: Chronic Disease Prevention and Control		
Reduce the incidence and impact of chronic disease to optimize the health and quality of life of all populations across the lifespan.		
Standard 2A: Improve participation in recommended cancer screenings.	Measure 2.1: ⊜	Increase the relative percentage of Massachusetts men 40 years and older who talked to their doctor, nurse, or other health professional about the advantages and disadvantages of the prostate-specific antigen (PSA) by 10%.
	Measure 2.2: ⊜	Increase screening rates for colorectal cancer for Massachusetts adults age 50-75 years to 80%.
Standard 2B: Improve prevention, management and control of chronic disease and associated risk factors.	Measure 2.3:	Increase the percentage of adults with hypertension who have their hypertension under control by 2.5%.
	Measure 2.4:	Decrease the relative percentage of adults with diabetes that have an A1c value greater than 9.0% by 2.5%.
	Measure 2.5: ⊜	Reduce the at-risk rate of pediatric asthma hospitalizations by 1.5% and the disparity among Black Non-Hispanics by an additional 1%.
	Measure 2.6:	Decrease relative percentage of obesity among Massachusetts adults and youth by 5%.

STANDARDS	MEASURES	
Domain 3: Infectious Disease Prevention and Control		
Reduce morbidity and mortality related to infectious disease.		
Standard 3A: Reduce morbidity related to vaccine preventable infections.	Measure 3.1:	Reduce the incidence of selected vaccine preventable diseases/increase immunization rates for selected vaccine preventable diseases.
Standard 3B: Reduce the incidence of tick-borne infections among MA residents.	Measure 3.2:	Decrease by 10% Lyme disease reported in children under the age of 19.
Standard 3C: Decrease morbidity related to sexually transmitted infections.	Measure 3.3:	Decrease the incidence of sexually transmitted infections (chlamydia, gonorrhea, and syphilis) in adolescents and high risk adult populations.
Standard 3D: Reduce morbidity and mortality related to HIV/AIDS.	Measure 3.4:	Decrease the incidence of newly diagnosed HIV infections overall and among men who have sex with men (MSM) to meet multiple specified targets, and reduce racial and ethnic HIV infection disparities by 20%.
Standard 3E: Reduce mortality related to viral hepatitis.	Measure 3.5:	Increase the average time between diagnosis of hepatitis C virus (HCV) infection and death due to hepatitis C virus infection from 3 years to 4 years.
Standard 3F: Reduce morbidity related to healthcare acquired infections.	Measure 3.6:	Reduce standard infection ratios (SIR) to 1.00 or below for CLABSI's, SSI's and CAUTI's, in acute care hospitals through application of evidence-based interventions.
Standard 3G Reduce morbidity related to foodborne infections.	Measure 3.7:	Limit the yearly increase in campylobacter cases to less than 1% and maintain reported cases of salmonella at fewer than 1,200 per year.
Domain 4: Substance Abuse Prevention, Intervention, Treatment and Recovery		
Promote mental and emotional health and reduce drug and alcohol abuse through prevention, treatment, and integration of care.		
Standard 4A: Prevent the development of alcohol and substance use disorders.	Measure 4.1:	Reduce the relative percentage of youth who report having tried alcohol for the first time before age 13 by 5%.
	Measure 4.2:	Increase the annual number of healthcare providers trained by MDPH/BSAS to incorporate screening and intervention for unhealthy substance use by 5%.
	Measure 4.3:	Reduce a specified multiple provider episode (MPE) rate in the state by 20% (i.e., the number of individuals who receive at least one Schedule II and/or III prescription opioid from 4 or more different prescribers and 4 or more different pharmacies during the calendar year divided by the state population).
	Measure 4.4:	Reduce the number of individuals identified per year with combined opioid prescriptions for an average morphine milligram equivalent (MME) greater than 100 mg per day by 10%.

STANDARDS	MEASURES	
Standard 4B: Strengthen local capacity to prevent substance abuse.	Measure 4.5:	Ensure that 100% of BSAS-funded prevention coalitions and the integrated communities and municipalities use the Strategic Prevention Framework (SPF).
Standard 4C: Improve diversity among individuals served.	Measure 4.6: =	Increase the relative percentage of non-white opioid addicted individuals enrolled in MDPH/BSAS-funded medication assisted treatment programs by 5%.

Domain 5: Injury, Suicide and Violence Prevention

Prevent injuries, suicide and violence and promote trauma-informed care across all settings, particularly in clinical and public health services.

Standard 5A: Reduce unintentional injury.	Measure 5.1:	Stabilize the rate of fatal poisonings, with particular focus on opioid related poisonings.
	Measure 5.2:	Prevent an increase in the rate of unintentional fall deaths among residents ages 65+ years.
	Measure 5.3:	Decrease the rate of unintentional motor vehicle traffic deaths among MA residents by 5%.
	Measure 5.4:	Reduce the rate of unintentional injury deaths among residents ages 0-19 years by 10%.
Standard 5B: Reduce suicides and suicidal behavior for all ages.	Measure 5.5:	Prevent an increase in the age adjusted rate of suicide among MA residents, particularly those most at risk.
Standard 5C: Reduce work-related injury and violence.	Measure 5.6: =	Reduce rates of work-related injuries among public and private sector employees, particularly those at greatest risk, to meet multiple specified targets.
Standard 5D: Reduce gender based and youth violence.	Measure 5.7: =	Reduce sexual and domestic violence, with particular focus on disparate populations, to meet multiple specified targets.
	Measure 5.8: =	Reduce fatal violence among youth age 15-24 with particular focus on disparate populations, to meet multiple specified targets.
Standard 5E Reduce health care facility severe reportable events.	Measure 5.9	Reduce the hospital-acquired pressure ulcer prevalence in acute and non-acute care hospitals by 10%.
	Measure 5.10	Reduce the prevalence of falls with serious injury or death in acute and non-acute care hospitals by 1%.
	Measure 5.11	Reduce the prevalence of wrong site or side procedures and surgeries in acute and non-acute care hospitals and ambulatory surgical centers by 10%.

Domain 6: Maternal, Child, and Family Health Promotion

Ensure the health and well-being of women, children and families.

Standard 6A: Reduce teen births in communities with the highest rates.	Measure 6.1: =	Reduce the teen birth rate in the highest need communities by 10%.

STANDARDS	MEASURES	
Standard 6B: Improve maternal health and infant outcomes.	Measure 6.2: ⊜	Reduce the relative percentage of infants with low birth weight births by 5% and premature births by 5%.
	Measure 6.3: ⊜	Increase the proportion of infants who are breastfed to meet multiple specified targets.
	Measure 6.4:	Increase the proportion of pregnant women who receive teeth cleaning before and during pregnancy by 5%.
Standard 6C: Ensure positive early childhood health and development.	Measure 6.5:	Increase the relative percentage of children and adolescents who have a Medical Home by 10%, especially children and youth with special health care needs.
	Measure 6.6: ⊜	Develop consensus definitions and comprehensive data sources to identify and measure positive early childhood health and development.
Domain 7: Environmental Risk Factors and Health		
Prevent and reduce environmental risk factors (or hazards) in home, school, work and community environments to achieve optimal health and wellbeing.		
Standard 7A: Reduce exposure to lead in children and adults to prevent deleterious health impacts.	Measure 7.1: ⊜	Increase blood level screening rates in high-risk communities (as defined by low socioeconomic status, percent old housing stock, and other factors) by 10% (relative).
	Measure: 7.2: ⊜	Reduce the prevalence rate of blood lead levels of > 25 µg/dL in persons 16 years or older by 5% (relative). (Consistent with HP 2020 objective OSH-7)
Standard 7B: Improve indoor environmental quality in homes and public buildings to reduce respiratory symptoms and diseases.	Measure 7.3:	Implement steps to improve indoor environmental quality by providing Division of Capital Asset Management and Maintenance (DCAMM) pre-occupancy assessments within an average of two weeks of inspection.
	Measure 7.4:	Reduce the number of avoidable complaints of poor housing conditions by increasing the number of local inspectors trained by 10%.
Standard 7C: Reduce foodborne illness.	Measure 7.5:	Reduce the number of foodborne illness outbreaks by increasing the number of mandatory local health inspections of retail food establishments.
Standard 7D: Increase the capacity of local and state health officials to address environmental health issues through enhanced training.	Measure 7.6: ⊜	Enhance local and state capacity for climate change/adaptation by increasing the number of local health officials trained by 10% annually.
	Measure 7.7: ⊜	Enhance local capacity to respond to environmental health inquiries by use of the Environmental Public Health Tracking (EPHT) network by 10%.

The narrative introduction to each domain includes a statement of its overarching goal; a brief introduction to the domain including a summary of why it is important for the Commonwealth, its impact,

and what we can do; and a listing of the standards, measures, outcome indicators, strategies, and partners for implementation.   Where specific references/citations are not noted, the data source is the Health of Massachusetts report published in 2010.[6]

Relationship Between the SHIP and Other Guiding Documents and Initiatives

The Massachusetts SHIP is closely aligned with the National Prevention Strategy, Healthy People 2020 objectives, the Community Guide, the Centers for Disease Control and Prevention public health priorities (Winnable Battles), and with other existing Commonwealth of Massachusetts and MDPH Plans.

The SHIP was designed to complement and build upon other guiding documents, plans, initiatives, and coalitions already in place to improve the public health of the residents of Massachusetts. Rather than conflicting with or duplicating the recommendations and actions of existing frameworks and coalitions, the participants in the SHIP development process identified potential partners and existing networks and resources wherever possible. Those engaged in this process recognize that compiling partners, resources, and initiatives in a common database is an ongoing effort that is critical for successful implementation and sustainability. MDPH has assumed the role of convening partners and organizing available data to support collective action.

The Plan

Part I: Public Health System Transformation

Health Systems Infrastructure

Facilitate public health systems transformation to achieve equity and accountability.

Systems Standard: Assure health equity and health reform goal attainment through robust systems and resources for monitoring, protecting, and promoting the health and well-being of the entire Massachusetts population.

Burden (Where We Are): Everyone deserves access to a robust, comprehensive public health infrastructure. While primary responsibility for assuring public health rests with the public sector—state, local, and tribal government—public health infrastructure is a shared public and private responsibility. A robust public health and prevention oriented health care infrastructure is an essential success factor for achieving measurable gains in any of the health topic focus areas outlined in the SHIP.

Result (How This Affects Us): Public health is often said to operate "in the shadows," because much of the work necessary to protect people and prevent injury and disease happens out of public view. Whether we know it or not, our lives all depend on public health infrastructure—the underlying systems and resources required for assessing population health, developing protective policies, and assuring healthy individuals, families, communities, schools, and workplaces. Public health infrastructure includes:

- Health information technology, data systems, research, evaluation, and reporting systems;
- Health needs assessment and improvement planning;
- Disease surveillance, investigation, monitoring, and response;
- Laboratory services;
- Emergency preparedness and response;
- Regulatory licensing, inspection and enforcement;
- Public education, information, and risk communication;
- Policy development and advocacy;
- Workforce development;
- Governance and financial management; and
- Performance management and quality improvement systems.

Action (What We Can Do): Achieving the goals of the Massachusetts SHIP for all health topic focus areas requires strengthening and sustaining our public health infrastructure and ensuring its capacity to be informed by and to adapt to the cultural and linguistic diversity in the state. The following measures and strategies underscore the importance of underlying systems and capacities to protect the population, prevent injury and disease, and foster improvements in health outcomes.

Systems Measure 1:

By December 31, 2015, create a Public Health Data Warehouse to: maintain and improve surveillance capacity and increase the accessibility of data for state and local public health activities, for evaluation of key public health initiatives, and for the SHIP objectives

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Monitor Health to Identify and Solve Community Health Problems
S.1.1   Increase the use of clinical information systems, evolving registries, and surveys for public health purposes such as assessment, planning, evaluation and dissemination.
S.1.2   Sustain and enhance personnel, informatics systems, information technologies, and telecommunications systems that support comprehensive surveillance of health outcomes and factors associated with these health outcomes.
S.1.3   Continually evaluate the security of surveillance systems to ensure individual privacy and confidentiality.
S.1.4   Develop, adopt, and disseminate standards for the collection of data describing race, ethnicity, gender identity, language, socioeconomic status, sexual orientation, disability, and other relevant social determinant domains associated with health outcomes.
S.1.5   Promote the use of mathematical modeling techniques to increase the speed that data is released to stakeholders and the public.

Inform, Educate, and Empower People About Health Issues
S.1.6   Publicize access to culturally and linguistically appropriate services as they become available through phased implementation of system development.
S.1.7   Provide technical assistance with adequate staffing to promote system utilization by public and private stakeholders, including but not limited to local public health authorities, academics, community based organizations, and service providers.
S.1.8   Enhance user friendly, easily accessible, web-based data query system (like MassCHIP) to disseminate data identified in the plan for research, public information, and community planning at actionable geographic and population sub-group levels.
S.1.9   Provide mapping, small area estimates, standard community health assessment/indicator tools, and data visualization capacity.
S.1.10 Align current public health measures that are tracked in public-facing dashboards (like EHSResults) with those measures listed in the SHIP.
S.1.11 Release basic summary public health reports to the public no later than one year after the change in the calendar year.

Mobilize Community Partnerships to Identify and Solve Health Problems
S.1.12 Highlight achievements of Prevention and Wellness Trust Fund investments.

Develop Policies and Plans That Support Individual and Community Health Efforts
S.1.13 Establish data sharing agreements and parameters within the context of applicable privacy laws and regulations.
S.1.14 Establish cost sharing authority and protocols for public and private sector institutional users.
S.1.15 Align available information technology (IT) resources.
S.1.16 Develop an ethnical framework for data collection and reporting in cooperation with stakeholders from fields such as law, health ethics, health equity, biostatistics, IT security, and consumer advocacy and protection. The framework should appropriately balance the risks of data security concerns with the risks of not fully utilizing data to improve the health of the citizens of MA.
S.1.17 Develop new evidence-based consensus measures addressing objectives and strategies for health priority areas across the SHIP not covered by current public health measures, and advocate for their use by all appropriate stakeholders.
S.1.18 Apply Quality Improvement processes to assess and implement opportunities to ensure accelerated approval of research subject to Institutional Review Board

(IRB) requirements of M.G.L. c. 111, section 24A, including submission, review, revision, and approval.

S.1.19   Continue to evolve technical capabilities to automate surveillance data collection and reporting to improve their timeliness, completeness, and utility.

S.1.20   Develop, adopt, and disseminate standards for the collection of data describing race, ethnicity, gender identity, language, socioeconomic status, sexual orientation, disability, and other relevant social determinant domains.

S.1.21   Develop a governance plan for the Public Health Data Warehouse that ensures broad data access across MDPH as well as for partners representing the public, local health departments, other governmental entities, and public health researchers.

Assure a Competent Public and Personal Healthcare Workforce

S.1.22   Sustain or enhance capacity of local health departments, other governmental entities, and private sector and academic partners to contribute to surveillance data gathering and interpretation.

Evaluate Effectiveness, Accessibility, and Quality of Health Services

S.1.23   Support and monitor use of proven best practices in implementation of the federal CLAS (Culturally and Linguistically Appropriate Services) Standards for all public health domains and health care stakeholders across all jurisdictions and organizational types.

S.1.24   Support and monitor coordinated research and evaluation, including community-based participatory research, to understand and disseminate effective strategies for ending health disparities.

Systems Measure2:

By December 31, 2015, enhance the capacity of local health departments to respond to public health needs.

Monitor Health to Identify and Solve Community Health Problems

S.2.1   Promote and support local health departments in conducting an analysis of the public health needs of the population in their municipality or health district.

S.2.2   Promote collaboration between local health departments and regional health districts and health care organizations evaluating local public health needs.

Assure a Competent Public and Personal Healthcare Workforce

S.2.3   Strengthen and sustain the capacity of local boards of health to prepare for and respond to public health issues and emergencies and to promote the health of residents of the Commonwealth through provision of training and technical assistance.

S.2.4   Convene ad hoc workgroups and other appropriate entities to identify and coordinate planning and program implementation to sustain the Office of Local and Regional Health.

Evaluate Effectiveness, Accessibility, and Quality of Health Services

S.2.5   Provide technical assistance to local health departments and regional health districts in applying for national public health accreditation.

Systems Measure 3:

By December 31, 2015, establish and maintain a system to support and provide technical assistance to a network of community based collaborative partnerships across Massachusetts to promote public health.

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Monitor Health to Identify and Solve Community Health Problems

S.3.1   Promote and support community health coalitions in conducting Community Health Assessments to inform them about the state of health and needs of the population in their community or area of concern.

S.3.2   Promote collaboration between community health coalitions and health care organizations around the conduct of community health assessments.

Mobilize Community Partnerships to Identify and Solve Health Problems

S.3.3   Convene cross sector councils, ad hoc work groups, and other appropriate entities to coordinate planning, policy development, and program implementation among state agencies, in cooperation with municipalities and private sector partners, to support all aspects of the SHIP.

Develop Policies and Plans That Support Individual and Community Health Efforts

S.3.4   Coordinate policies involving Community Benefits and Determination of Need community health initiatives, in cooperation with hospitals, HMOs, and community heath coalitions.

S.3.5   Develop standards for planning, implementing and evaluating Determination of Need community health initiatives, in cooperation with hospitals, and community heath coalitions, based on researched best practices and the findings of the HIA study conducted in 2014 by MDPH.

Assure a Competent Public and Personal Healthcare Workforce

S.3.6   Coordinate training and technical assistance, including integrated web-based and data services, to support municipalities, community health coalitions, professional provider associations, community health workers, and other partnerships involving the state health department .

Systems Measure 4:

By June 30, 2017, establish six regional health and medical coordinating coalitions that will support and enhance the ability of the Commonwealth to prepare for, respond to, recover from, and mitigate the impact of public health and medical threats, emergencies and disasters, including acts of terrorism.

Mobilize Community Partnerships to Identify and Solve Health Problems

S.4.1   Ensure that all-hazards plans include policies and procedures to assure access to care following emergencies and disasters for all residents, and specifically address populations with access and functional needs, including but not limited to health vulnerabilities such as chronic disease or poor health status; limited access to local health resources; limited English proficiency; poverty; reduced ability to move or walk independently or respond quickly to directions during an emergency; and reduced ability to hear, speak, understand, or remember.

S.4.2   Sustain and enhance partnerships among local public health, hospitals, community health centers and ambulatory care practices, emergency medical services, long term care facilities, and other health and medical stakeholders to ensure collaborative planning.

Develop Policies and Plans That Support Individual and Community Health Efforts

S.4.3   Support the development of capabilities-based local, regional, and state all-hazards plans that address potential hazards, vulnerabilities, and risks to public

health, medical, and mental/behavioral health services and systems identified through jurisdictional risk assessments.

S.4.4 Ensure that local, regional, and state plans prioritize and address the rebuilding of public health, medical, and mental/behavioral health services and systems following a disaster to at least a level of functioning comparable to pre-disaster levels, and to improved levels where possible.

Engagement with Governing Entities

S.4.5 Support the development of a regional capacity to coordinate a response to impacts from public health and medical threats, emergencies or disasters through the formation of multi-disciplinary regional healthcare coalitions.

S.4.6 Ensure a robust IT infrastructure to support critical information sharing during emergencies and disasters through platforms including but not limited to the Health and Homeland Alert Network, MAVEN, and WebEOC.

Systems Measure 5:

Develop a Public Health Workforce Development Plan (e.g., PM/QI including regulatory oversight) to increase public health workforce capacity for Massachusetts, including quantity, quality, and diversity of workforce, by December 2015.

Mobilize Community Partnerships to Identify and Solve Health Problems

S.5.1 Develop collaborations among Schools of Public Health, MDPH, health researchers, local health departments, and community based public health and health care organizations to promote public health as an occupation and to provide trainings and other resources that support and develop public health employees, with an emphasis on the core competencies for public health.

S.5.2 Collaborate on a broad-based assessment of the state public health workforce in Massachusetts to identify training gaps within the core competencies and to identify future workforce recruitment and retention needs.

Assure a Competent Public and Personal Healthcare Workforce

S.5.3 Strengthen the Commonwealth's core competency training infrastructure for Community Health Workers.

S.5.4 Strengthen training and workforce development opportunities for local public health employees.

S.5.5 Validate that members of the public health workforce at all jurisdictional levels meet regulatory qualifications for their positions, job classifications, and licensure.

S.5.6 Develop performance management and quality improvement plans that include quality improvement goals, objectives, and measures with time-framed targets, available training, identification of projects, and quality improvement/performance management systems and structures.

S.5.7 Assure appropriate training for state public health workforce to improve skills and maintain conformity with evolving best practices including Performance Management and Quality Improvement training.

Systems Measure 6:

Increase Massachusetts' public health licensing and regulatory enforcement capacity (e.g., Health Planning, DON) by December 2015.

Develop Policies and Plans That Support Individual and Community Health Efforts

S.6.1 Assure adequate resources to support state regulatory enforcement operations.

S.6.2 Document and disseminate policies, procedures, algorithms, and communication protocols for notifying appropriate parties when corrective action is taken against a licensed or certified public health professional.

S.6.3   Develop and disseminate policies and procedures for identifying reliably when corrective/enforcement action should be taken regarding a certified or licensed health care facility.

Partners/Resources for Health Systems Infrastructure
- Boards of health/local health departments
- Coalition for Local Public Health
- Community Health Coalitions
- Educational institutions, including Schools of Public Health
- Healthcare Providers
- Health insurers/life insurers
- IT community
- Legislature
- MA Emergency Management Agency (MEMA)
- Occupational health
- Regional and municipal planning entities

Part II: Health Issues/Topics

Domain1: Active Living, Healthy Eating, and Tobacco-Free Living

Ensure that all Massachusetts residents minimize risk for disease by eating a nutritious diet, engaging in adequate physical activity, maintaining a healthy weight, and eliminating tobacco use and exposure.

Why This Domain Is Important for Massachusetts:

Burden (Where We Are): Obesity and tobacco use/exposure are the two key modifiable risk factors (e.g., factors that contribute to a person's overall likelihood of developing chronic disease that leads to poor quality of life, disability, and death) for preventable death and disease in Massachusetts.

Although Massachusetts ranks second in the country, behind Vermont, for having the lowest percentage of adults who are overweight or obese, according to the 2010 Health In Massachusetts report, more than half of Massachusetts adults, or approximately three million people, are either overweight or obese. In addition, approximately 25% of high school youth are either overweight, or at risk of becoming overweight. Using current data sources, a conservative estimate of annual obesity-related healthcare expenditures for Massachusetts is $3.5 billion.

Tobacco use is the leading cause of preventable death and disease in Massachusetts. Although the adult smoking rate is16% (2012), ranking Massachusetts as the 7th lowest in the U.S., approximately 7,800 Massachusetts residents die each year from tobacco-related causes, including cancers of the lung, larynx, throat, esophagus and mouth; heart disease and stroke; and emphysema and other respiratory diseases. These adverse outcomes are experienced most among low socio-economic groups, people with mental illness, people with disabilities, and the LGBT (lesbian, gay, bisexual, and transgender) population. The percentage of Massachusetts high school students who smoke cigarettes is 11% (2013). The smoking rate by race/ethnicity is 16% for whites, 18% for blacks, and 17% for Hispanics. The smoking rate among young adults, age 25-34, is the highest of any age group (24%).

Result (How This Affects Us): People who are overweight or obese are more likely to have type 2 diabetes, heart disease, stroke, gall bladder disease, and musculoskeletal disorders. Overweight and obesity are also associated with some forms of cancer, and many other health problems that interfere with daily living and reduce the quality of life.[7]Those least likely to meet physical activity guidelines include Hispanics and Asians and those with less than a High School education.[8] Groups with the highest adult obesity rates include American Indians,[9] Blacks, Hispanics, those with less than a high school education, and people with disabilities.

Tobacco kills more people in Massachusetts than motor vehicle crashes, AIDS, homicides, suicides and poisonings combined. Tobacco imposes a heavy financial burden on the Commonwealth, costing Massachusetts an estimated $6.0 billion annually - $4.3 billion in excess health care costs and $1.7 billion in lost productivity.

Action (What We Can Do): Developing and supporting policies that promote health as a central focus of a community's culture and norms, and creating environments where healthy choices and behaviors are the easy, default choices, improve health outcomes across a range of health conditions.

A balanced diet low in saturated fats and added sugars, but rich in fiber from fruits, vegetables, and whole grains, protects and promotes good health and may help control overweight and obesity.[10,11,12]Also, regular physical activity reduces a person's risk for obesity and overweight, and adds many other health benefits, including reduced risk of chronic disease morbidity, fall-related injuries, and all-cause mortality.[13]We are committed to developing improved data collection in this domain as outlined in Part One of this SHIP in order to more accurately monitor and address disparities for obesity and overweight.

Thanks to aggressive public education campaigns, policy initiatives and targeted regulatory changes, far fewer adults smoke today than they did twenty years ago. Recent findings have shown that current

smoking decreased among MH recipients by approximately 10% in the first 2.5 years since tobacco cessation was incorporated into the benefit package in July 2006.[14]

Standard 1A: Ensure that all MA residents eat a nutritious diet.

Measure 1.1: **Increase the relative percentage of adults, adolescents, and children that report consuming 5 servings of fruits and vegetables daily by 2%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Adults 5+ servings	18.8%	19.2%	*MDPH BRFSS 2011*
Adolescents (High School) 3+ servings	22.5% (Fruit)	23%	*MDPH YHS2013*
Adolescents (High School) 3+ servings	14.6% (Vegetables)	14.9%	*MDPH YHS2013*
Children (Middle School) 3+ servings	28.7% (Fruit)	29.3%	*MDPH YHS2013*
Children (Middle School) 3+ servings	20% (Vegetables)	20.4%	*MDPH YHS2013*

Numerator:	Adults who report consuming 5 or more servings of fruits and vegetables daily; high school students and middle school students who report consuming 3 or more servings of fruits in the previous day or vegetables in the previous day
Denominator:	All high school students or middle school students reporting on the question; all adults reporting sufficient information on intake of fruit and vegetables during the series of fruit and vegetable questions to calculate servings per day
Exclusions:	All adults reporting insufficient information on the series of fruit and vegetable questions to calculate servings per day
Timeframe:	Annual
How will this be measured?	The nutrition questions from the CDC Core BRFSS are asked every other year by randomized telephone survey. YHS is a paper survey conducted every other year (odd years) in school classrooms.

Monitor Health to Identify and Solve Community Health Problems
- 1.1.1   Continue to implement YHS, YRBS, School Health Profiles, and nutrition module of BRFSS according to current schedule.

Diagnose and Investigate Health Problems and Hazards in the Community
- 1.1.2   Conduct environmental scan of fruit and vegetable pricing in different communities with an emphasis on low-income neighborhoods, analyze results.
- 1.1.3   Work with local health officials to ensure regular inspections of farmer's markets.

Mobilize Community Partnerships to Identify and Solve Health Problems
- 1.1.4   Expand the number and utilization of community gardens as measured by the number of municipalities with community garden programs in place.
- 1.1.5   Expand and evaluate farmer's market Supplemental Nutrition Assistance Program (SNAP) participation, as measured by the number of farmers markets that accept SNAP as a form of payment.
- 1.1.6   Assist food retailers and vendors to offer more healthy food options.

Develop Policies and Plans That Support Individual and Community Health Efforts
    1.1.7   Double the value of SNAP benefits for authorized purchases of fruits and vegetables at all merchants as measured by the number of farmers markets that have match programs.

    1.1.8   Pass and implement a statewide policy to eliminate the tax exemption for candy and sugar-sweetened beverages.

Enforce Laws and Regulations That Protect Health and Ensure Safety
    1.1.9   Expand affordable healthy food options, including fruits and vegetables, in schools and early care and education programs as measured by the number of Local Educational Agencies (LEA) that are in compliance with the MA Competitive Foods Regulations.

Assure a Competent Public and Personal Healthcare Workforce
    1.1.10   Provide technical assistance to state agency staff responsible for food procurement to increase healthy food options.

    1.1.11   Develop and provide training for, and track participation of, school food service workers to increase their ability to prepare and offer fruits and vegetables in an appetizing, affordable manner.

Maintain Administrative Management Capacity
    1.1.12   Evaluate the Healthy Market initiative as measured by the number of corner stores that meet MDPH Healthy Market Criteria and expand if effective.

    1.1.13   Develop new measurement tools allowing for more robust healthy eating measurement (specifically Policy, Systems, and Environmental (PSE) strategies and behaviors specifically associated with obesity).

Measure 1.2:   **Increase the relative percentage of adolescents and children who report consuming no more than one sugar-sweetened beverage daily by 2%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Adolescents (High School) 0-1 servings	66.4%	67.7%	*MDPH YHS 2013*
Children (Middle School) 0-1 servings	64.6%	65.9%	*MDPH YHS2013*

Numerator:	High school students and middle school students who report consuming no more than 1 sugar-sweetened beverage in the previous day
Denominator:	All high school and middle school students reporting on the survey question
Exclusions:	N/A
Timeframe:	Annual (odd years)
How will this be measured?	YHS is a paper survey conducted every other year (odd years) in school classrooms

Monitor Health to Identify and Solve Community Health Problems
    1.2.1   Continue to implement YHS and YRBS according to current schedule.

Mobilize Community Partnerships to Identify and Solve Health Problems
    1.2.2   Limit promotion of unhealthy foods and marketing of unhealthy foods in schools (including fast food and sugar sweetened beverages (SSBs)) as measured through YRBS or YHS and the number of LEAs with policies to prohibit marketing of fast food and sugar sweetened beverages.

Develop Policies and Plans That Support Individual and Community Health Efforts
    1.2.3   Pass and implement a statewide policy to eliminate the tax exemption for candy and sugar-sweetened beverages.

Evaluate Effectiveness, Accessibility, and Quality of Health Services
    1.2.4   Evaluate the impact of the Healthy Market initiative as measured by the number of corner stores that meet MDPH Healthy Market Criteria and expand if effective.

Standard 1B: Ensure that all MA residents engage in adequate physical activity.

Measure 1.3:   Increase the relative percentage of adults, adolescents, and children who engage in daily moderate to vigorous physical activity as per CDC recommendations by 3%.

Outcome Indicator	Baseline	2020 Target	Data Source
Adults	56.3% 150 min/week	58%	*MDPH BRFSS 2011*
Adolescents (High School)	20.7% 60 minutes/7 days/week	21.3%	*MDPH YHS2013*
Children (Middle School)	22.6% 60 minutes/7 days/week	23.3%	*MDPH YHS2013*

Numerator:	Adults who report engaging in aerobic physical activity of at least moderate intensity for at least 150 minutes/week; high school students and middle school students who report that they were physically active for at least 60 minutes/7 days in the last week
Denominator:	All high school and middle school students reporting on the survey question; all adults reporting sufficient information for the physical activity questions to calculate minutes per day
Exclusions:	All adults reporting "don't know" or "refused" for any exercise in past month; adults reporting insufficient information on the physical activity questions to calculate minutes per day.
Timeframe:	Annual (BRFSS); Biannual (odd years – YHS)
How will this be measured?	The physical activity questions from the CDC Core BRFSS are asked every other year by randomized telephone survey. YHS is a paper survey conducted every other year (odd years) in school classrooms.

Monitor Health to Identify and Solve Community Health Problems
    1.3.1   Continue to implement YHS, YRBS, School Health Profiles, and physical activity module of BRFSS according to current schedule.

Mobilize Community Partnerships to Identify and Solve Health Problems
    1.3.2   Work with communities, businesses, and local/state agencies to expand active living options (e.g., school site planning, improved transit, bike lanes, bike paths, pedestrian paths, and sidewalks).
    1.3.3   Support Safe Routes to School (SRTS) efforts that lead to actual travel mode shift (e.g., efforts that make infrastructure or systems changes that reduce vehicle trips to school), as measured by self-reported walking and biking to school behavior in My School Commute.
    1.3.4   Support the development of Sustainable Communities and transportation policies that include walkable, mixed use villages around mass transit stops, and expansion of mass transit for all MA people, including people with disabilities.

Develop Policies and Plans That Support Individual and Community Health Efforts
    1.3.5   Create and support open, accessible, and safe space for physical activity and recreation (e.g., number of parks, playgrounds and public pools, acreage of

protected open space, number of communities that have passed the Community Preservation Act).

1.3.6   Encourage adoption of Complete Streets in all municipalities as measured by the number of municipalities with complete streets policies.

1.3.7   Identify, promote, and support workplace initiatives that increase physical activity among adults, taking into account the physical demands of work as measured by a statewide worksite survey.

1.3.8   Identify, promote, and support school-based initiatives that increase physical activity that is accessible and appropriate for adolescents and children as measured by a survey of school wellness policies.

Enforce Laws and Regulations That Protect Health and Ensure Safety

1.3.9   Encourage MassDOT to fully implement Active Streets Legislation as measured by the appropriation of funds for implementation.

Evaluate Effectiveness, Accessibility, and Quality of Health Services

1.3.10   Identify, promote, and support workplace initiatives that increase physical activity among adults, taking into account the physical demands of work as measured by a statewide worksite survey.

1.3.11   Identify, promote, and support school-based initiatives that increase physical activity among adolescents and children as measured by a survey of school wellness policies.

Standard1C:	**Support all MA residents in leading tobacco-free lives.**

Measure 1.4:	**Reduce the relative percentage of adults who are current smokers by 10%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Adult smokers	16.4%	11.0%	*Behavioral Risk Factor Surveillance System (BRFSS), 2012*
Adults with MassHealth Insurance	32.3%	29.1%	*Behavioral Risk Factor Surveillance System (BRFSS) 2012*

Numerator:	Adults who report on survey that they are current smokers
Denominator:	All adults who report on the survey question
Exclusions:	None
Timeframe:	Annual
How will this be measured?	The BRFSS survey will include two questions on smoking: 1) Have you smoked at least 100 cigarettes in your lifetime; and 2) Do you now smoke cigarettes every day or some days?

Numerator:	Adults who report on survey that they smoked cigarettes every day or some days
Denominator:	All adults who report on the survey question
Exclusions:	None
Timeframe:	Annual
How will this be measured?	The BRFSS survey includes questions to identify the type of health insurance coverage: private, MassHealth, Medicare, or other. This allows a subgroup analysis on those members who are MassHealth members.

Inform, Educate, and Empower People About Health Issues

1.4.1 Increase awareness of effective methods for quitting among the general public, providers and patients through diverse and appropriate messaging.
1.4.2 Utilize diverse national and local media campaigns to increase the reach of the state Quitline.
1.4.3 Increase awareness of the harm of mentholated cigarettes (these are more widely smoked by Blacks).

Develop Policies and Plans That Support Individual and Community Health Efforts
1.4.4 Provide recommendations to legislators and/or health care facility administrators on policies to ensure that tobacco users are identified and treated.
1.4.5 Operate and maintain the state tobacco Quitline and QuitWorks programs.
1.4.6 Improve the quality and cost efficiency of the Quitline.
1.4.7 Promote tobacco use screening and cessation activities through meaningful use measures.
1.4.8 Increase the adoption of bi-directional electronic referrals to the State Quitline.
1.4.9 Integrate tobacco control efforts with other substance abuse initiatives.
1.4.10 Integrate tobacco use screening, advising and referral into all oral health care systems.

Enforce Laws and Regulations That Protect Health and Ensure Safety
1.4.11 Monitor regulatory developments with Affordable Care Act and HITECH Act as they relate to providers.

Link People to Needed Personal Health Services and Health Care
1.4.12 Enhance access to effective tobacco cessation resources by increasing the number of insurance plans that provide comprehensive tobacco cessation benefit coverage.
1.4.13 Enhance access to effective tobacco cessation resources by ensuring that behavioral health providers and behavioral healthcare is covered within the comprehensive benefits coverage of health plans.

Assure a Competent Public and Personal Healthcare Workforce
1.4.14 Educate community health workers about risks, prevention messages, and resources for cessation.
1.4.15 Provide technical assistance and support to interested health care systems that wish to improve their tobacco treatment systems.

Measure 1.5: **Reduce the relative percentage of tobacco use among high school students by 10%.**

Outcome Indicator	Baseline	2020 Target	Data Source
High School Tobacco Use	17.1%	11.0% (2019)	*Youth Risk Behavior Surveillance System (2013)*

Numerator:	High school students who report using cigarettes, smokeless, or cigars
Denominator:	High school students who complete survey
Exclusions:	None
Timeframe:	Biannual (odd years)
How will this be measured?	The YRBS is administered in a sample of Massachusetts public high schools. Survey results are weighted to be representative of the population of high school students.

Inform, Educate, and Empower People About Health Issues
1.5.1 Increase the number of youth engaged in tobacco prevention activities.
1.5.2 Provide education and outreach to at risk populations (e.g., pregnant, LGBT, behavioral health, incarcerated, poor, minority, youth, children, and those with special health needs) to address tobacco related disparities including tobacco

industry targeting of poor and minority communities, including the utilization of community health workers.

Mobilize Community Partnerships to Identify and Solve Health Problems
1.5.3   Establish partnerships with local boards of health, community partners, and professional organizations to develop youth access campaigns and policies, in order to stay ahead of industry tactics.

Develop Policies and Plans That Support Individual and Community Health Efforts
1.5.4   Increase the number of municipalities that have strengthened tobacco sales regulations, including restrictions on the type of tobacco sold, and the placement, price and availability of tobacco products.
1.5.5   Increase the price of tobacco products via tobacco taxes.
1.5.6   Develop and support policies that decrease the density of tobacco retail outlets in communities disproportionately affected.
1.5.7   Integrate tobacco use screening, advising and referral into all oral health care systems.

Measure 1.6:   **Reduce the relative percentage of adults who report exposure to secondhand smoke of more than 1 hour per week by 10%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Exposure to secondhand smoke	11.0%	8.0%	*Behavioral Risk Factor Surveillance System (BRFSS) (2012)*

Numerator:	Adults who report on survey that they are exposed to secondhand smoke at work, at home, or other places
Denominator:	All adults who report on the survey questions
Exclusions:	None
Timeframe:	Annual
How will this be measured?	The BRFSS survey includes 3 questions about the amount of exposure to secondhand smoke in the past 7 days. The survey responses are weighted to make the sample representative of the Massachusetts adult (age 18+) population.

Inform, Educate, and Empower People About Health Issues
1.6.1   Educate smokers about the dangers of smoking around their children (in homes, in cars, etc.).

Develop Policies and Plans That Support Individual and Community Health Efforts
1.6.2   Maintain smoke-free workplace complaint line.
1.6.3   Increase the number of college campuses with a smoke-free campus policy.
1.6.4   Increase smoke-free public spaces.
1.6.5   Increase the number of public and private smoke-free multi-unit housing properties.

Enforce Laws and Regulations That Protect Health and Ensure Safety
1.6.6   Strengthen and enforce smoke-free workplace laws.

Assure a Competent Public and Personal Healthcare Workforce
1.6.7   Educate community health workers about risks of secondhand smoke, prevention messages, and resources for cessation.

Partners/Resources for Active Living, Healthy Eating, and Tobacco-Free Living
- Academy of Nutrition and Dietetics
- After school programs
- American Cancer Society

- American Diabetes Association
- American Heart Association
- American Lung Association
- American Planning Association
- Behavioral health workers
- Boards of Health
- Boys and Girls Clubs
- Business associations
- CBO serving newcomer populations
- Center for Health in New England Workplaces
- Coalition for Local Public Health
- Community Development Corporations
- MA Association of Community Health Workers
- Convenience stores (point of sales)
- Early education and child care centers
- Employers
- Elder service organizations
- Faith communities
- Fire departments
- Fitness groups (YMCA, YWCA)
- Food retailers and food producers
- Harvard School of Public Health Center for Work, Health and Wellbeing
- Health insurers/ life insurance/ home insurers/ auto insurers
- Healthcare Providers
- Hospital community benefits offices
- Legislators
- Local Boards of Health
- Local Housing Authorities
- MA Association of Occupational Health Nurses.
- MA based private foundations
- MA Department of Conservation and Recreation
- MA Department of Housing and Community Development
- MA Department of Elementary and Secondary Education
- MA Department of Transportation (DOT)
- MA Dietetic Association
- MA Medical Society
- MA Municipal Association
- MA Public Health Association
- MA Association of Health Plans (MAHP)
- Mass in Motion Communities/Coalitions
- MA League of Community Health Centers
- MA Restaurants Association
- MA Smart Growth
- MA Breastfeeding Coalition
- MA Municipal Association
- MA Bay Transit Authority (MBTA)
- MA Department of Agricultural Resources (MDAR)
- Media campaign partners
- MA Hospital Association (MHA)
- New England College of Occupational and Environmental Medicine
- Nurses
- Parent Teacher Organizations PTOs/PTAs
- Parks and Recreation Departments
- Prevention and Wellness Partnerships and coalitions
- Public housing (HUD)
- Regional Planning Agencies

- Schools
- Substance abuse coalitions
- The 84
- The Food Trust
- Tobacco Free Mass
- Transit agencies
- Unions emphasis on targeted populations (workers with combined exposures)
- Walk & Bike advocates
- WIC
- Worker Centers
- Youth

Domain 2: Chronic Disease Prevention and Control

Reduce the incidence and impact of chronic disease to optimize the health and quality of life of all populations across the lifespan.

Why This Domain Is Important for Massachusetts:

Burden (Where We Are): Heart disease, cancer, stroke, and chronic lower respiratory disease are the top four leading causes of death in Massachusetts. While Massachusetts enjoys lower rates of many chronic diseases than the national average, hypertension, diabetes and obesity continue to cripple the health of its residents. Nearly 1 in 3 adults have hypertension, 7.2% have diagnosed diabetes and 22.9% are obese. In 2010, the age-standardized incidence rate of cancer was higher for Massachusetts at 447.1 cases per 100,000 than the national average of 445.5 cases per 100,000. In addition, dental disease/decay is the most common chronic disease among children (5 times more common than asthma). These chronic conditions disproportionately affect those most at risk, including people with disabilities and those with less than a High School education, who are also less likely to receive preventive health and dental care due to issues of accessibility ranging from lack of insurance coverage to location and hours of providers. African American adults and adults with disabilities have higher rates of hypertension with self-reported rates at 34.6% and 42.9%, respectively, compared to 29.2% for the statewide percentage. Similarly, rates of pediatric asthma hospitalizations are higher among non-Hispanic Blacks and Hispanics than their White non-Hispanic counterparts, with rates at 4.10 per 100, 3.05 per 100 and 1.11 per 100, respectively. Moreover, a relationship between oral infections and related chronic diseases such as cardiovascular disease, diabetes, and bacterial pneumonia in seniors has been suggested. Hospital charges for cardiovascular disease have risen steadily in recent years, totaling $3.4 billion in inpatient hospital charges,[15] and $1.2 billion in direct and indirect costs for stroke.[16] Colorectal cancer alone results in over $133 million in Massachusetts inpatient hospital charges.[17]

Result (How This Affects Us): Massachusetts adults with chronic conditions such as diabetes, asthma, and obesity were more likely to report fair to poor health compared to those without. In addition, for adults, poor mental health was strongly associated with smoking, obesity, lack of physical activity, and chronic diseases such as diabetes and heart disease. Data also links the rapidly rising rates of chronic diseases to associated risk factors such as poor nutrition, lack of physical activity, poor air quality, and exposure to tobacco – factors that disproportionately affect those from lower socio-economic groups.

Action (What We Can Do): Data links the rapidly rising rates of chronic diseases to associated risk factors such as poor nutrition, lack of physical activity, poor air quality, and exposure to tobacco. Promoting prevention strategies that include healthy eating and physical activity, as well as appropriate and regular wellness visits and screenings (e.g., prostate and colorectal exams, blood pressure, blood glucose and cholesterol levels, BMI) -- and addressing environmental risk factors in the home, workplace, and community-- could significantly improve the health and wellbeing of the people of Massachusetts.

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Standard 2A:	Improve participation in recommended cancer screenings.
Measure 2.1:	Increase the relative percentage of Massachusetts men 40 years and older who talked to their doctor, nurse, or other health professional about the advantages and disadvantages of the prostate-specific antigen (PSA) test by 10%.

Outcome Indicator	Baseline	2020 Target	Data Source
Men aged 40 years or older who talked to their health professional about the advantages	63%	69.3%*	*BRFSS, 2011*
Men aged 40 years or older who talked to their health professional about the disadvantages	32%	35.2%*	*BRFSS, 2011*

* 2020 Target: Healthy People does not have a target screening rate for prostate cancer screening consistent with current US Preventive Services Task Force and other guidelines that advise doctor–patient discussions and informed decision-making on whether or not to undergo PSA testing

Numerator:	All Massachusetts men 40 years and older who talked to their doctor, nurse, or other health professional about the advantages and disadvantages of the PSA test
Denominator:	All Massachusetts men 40 years and older
Exclusions:	All Massachusetts men less than 40 years of age or females
Timeframe:	Biannual (odd years)
How will this be measured?	BRFSS 2011

Inform, Educate, and Empower People About Health Issues
2.1.1   Design, test, and evaluate a small media campaign offered through community and faith-based partners to educate Black, non-Hispanic men regarding prostate cancer.
2.1.2   Disseminate best practices for prostate health in key community and provider settings.

Link People to Needed Personal Health Services and Health Care
2.1.3   Continue Community Health Worker (CHW) outreach to Black, non-Hispanic men to educate them on their risk factors and the need for shared decision-making with their health care provider and link to clinical services as needed.

Assure a Competent Public and Personal Healthcare Workforce
2.1.4   Promote and offer training to health care providers and other health professionals regarding shared decision-making and screening of men in high-risk populations per new clinical guidelines for MA approved by Massachusetts Health Quality Partners (MHQP).
2.1.5   Train providers in basic health equity to include strategies and approaches that address social determinants of health.

Measure 2.2:	Increase screening rates for colorectal cancer for Massachusetts adults age 50-75 years to 80%.

Outcome Indicator	Baseline	2020 Target	Data Source
Adults age 50-75 years who have had screening for colorectal cancer	78.1%	80%	*Massachusetts Health Quality Partners (MHQP)*

Numerator:	Adult patients who are ≥50 years of age and ≤ 75 years of age who have had either a colonoscopy performed ≤ 10 years before or had a sigmoidoscopy ≤5 years before or had a fecal occult blood test
Denominator:	Adult patients who are ≥50 years of age and ≤ 75 years of age
Exclusions:	Adults with an active, inactive, or resolved diagnosis of colorectal cancer
Timeframe:	Annually
How will this be measured?	Accessing the MHQP data on this quality measure (NQF 34)

Inform, Educate, and Empower People About Health Issues
2.2.1   Promote utilization of colorectal screenings per recommended guidelines in alignment with MA State Cancer Plan.
2.2.2   Use written and/or telephone client reminders to encourage participation in recommended screenings, including explanation of benefits.
2.2.3   Develop culturally appropriate media and education campaigns to increase screening rates.

Assure a Competent Public and Personal Healthcare Workforce
2.2.4   Train providers on providing shared decision making practices to assure regular screening.
2.2.5   Utilize community health workers to identify and address physical, cultural, structural, and other barriers to screening.
2.2.6   Promote the use of professional education module for physicians regarding colorectal cancer screening guidelines.

Standard 2B: **Improve prevention, management and control of chronic disease and associated risk factors.**

Measure 2.3: **Increase the percentage of adults with hypertension who have their hypertension under control by 2.5%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Adults with hypertension who have their hypertension in control	71.3%	73.8%	*Massachusetts Health Quality Partners (MHQP)*

Numerator:	The number of patients in the denominator whose most recent BP is adequately controlled during the measurement year. A patient's BP is considered adequately controlled when both the systolic and diastolic BP must be <140/90.
Denominator:	Patients 18-85 years of age with hypertension
Exclusions:	All patients with end-stage renal disease, documentation in the medical record of dialysis or renal transplant, diagnosis of pregnancy, or admission to non-acute inpatient setting during the measurement year
Timeframe:	Annual
How will this be measured?	Accessing the MHQP data on this quality measure (NQF 18)

Monitor Health to Identify and Solve Health Problems
2.3.1   Increase electronic health records (EHR) adoption and the use of health information technology (HIT) to improve detection and treatment of hypertension including the tracking and reporting of NQF measure 18.
2.3.2   Increase the institutionalization and monitoring of aggregated/standardized quality measures at the provider and systems level for hypertension.

Inform, Educate, and Empower People About Health Issues
2.3.3   Communicate and educate on the risks of high blood pressure to multiple audiences and through multiple modalities (e.g., patients, parents, healthcare providers, schools, workplaces, community and faith groups, etc.).
2.3.4   Promote lifestyle changes that can prevent high blood pressure and/or lower blood pressure (maintaining healthy weight, regular exercise, eating a healthy diet, reducing sodium in diet, limiting alcohol, avoiding tobacco products, reducing stress, etc.).
2.3.5   Promote screening and counseling for smokers.
2.3.6   Increase awareness among the professional community of the association between working conditions and stress, and successful approaches to workplace interventions to reduce stress.
2.3.7   Promote the knowledge and use of highly ranked clinical preventive measures.

Mobilize Community Partnerships to Identify and Solve Health Problems

2.3.8   Promote policies and best practices to strengthen linkages among clinical settings and community programs and resources to help reduce hypertension (e.g., e-referrals and community health workers).

2.3.9   Promote benefits of regular screenings (BP, cholesterol) through community providers, community groups, healthcare systems, pharmacies, faith-based organizations, workplaces, etc.

2.3.10   Pilot and evaluate model interventions to reduce workplace stress and other workplace risks, focusing on jobs frequently held by low income immigrant and minority workers (e.g., home health aides, janitors and cleaners, hotel workers).

2.3.11   Promote comprehensive approaches to healthy workplaces that integrate health promotion and health protection (i.e., address lifestyle factors and working conditions).

2.3.12   Disseminate newly available tools promoting integrated approaches for worksite wellness in small businesses. (See federally funded Centers of Excellence on Total Worker Health, one at UMass Lowell, the other at Harvard School of Public Health).

Link People to Needed Personal Health Services and Health Care

2.3.13   Ensure utilization of bi-directional e-Referral in Prevention and Wellness Trust Fund (PWTF) communities.

Assure a Competent Public and Personal Healthcare Workforce

2.3.14   Train community health workers to ensure consistent follow up and connections between patients and providers, and to enhance referrals and treatments.

2.3.15   Promote integration of community health workers into clinical and community settings as culturally responsive educators and supporters for lifestyle and self-management changes.

Evaluate Effectiveness, Accessibility, and Quality of Health Services

2.3.16   Evaluate the effectiveness of using bi-directional e-Referral within PWTF communities.

Measure 2.4:	**Decrease the relative percentage of adults with diabetes that have an A1c value greater than 9.0% by 2.5%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Adult patients with diabetes who had an A1c value greater than 9.0%	15.4%	15.0%	*Massachusetts Health Quality Partners (MHQP),*

Numerator:	Adult patients in the denominator whose most recent HbA1c test has a value >9.0%
Denominator:	Adult patients who are ≥18 years of age and ≤ 75 years of age who have medications dispensed, ordered, or active that are indicative of diabetes OR an active diagnosis of diabetes ≤ 2 years with either ≥1 count acute inpatient or emergency department visit or ≥2 counts of non-acute inpatient, outpatient or ophthalmology visits occurring on two different dates
Exclusions:	Patients with a diagnosis of polycystic ovaries, gestational diabetes, or steroid induced diabetes
Timeframe:	Annual
How will this be measured?	Accessing the MHQP data on this quality measure (NQF 34)

Monitor Health to Identify and Solve Community Health Problems

2.4.1   Increase the use of health information technology (HIT) to improve detection and treatment of diabetes.

2.4.2   Use electronic health records (EHR) with patient registries to track patient A1C levels.

2.4.3   Increase the institutionalization and monitoring of aggregated/standardized quality measures at the provider and systems level for diabetes.

Inform, Educate, and Empower People About Health Issues

2.4.4   Promote participation in ADA-recognized, AADE-accredited, state-accredited/certified, and/or Stanford licensed diabetes self-management education (DSME) programs.

2.4.5   Promote awareness of prediabetes among people at high risk for type 2 diabetes by raising awareness among providers of diabetes screening and resources for diabetes prevention.

Develop Policies and Plans That Support Individual and Community Health Efforts

2.4.6   Promote the implementation of a medical home model in primary care practices to increase the proportion of adults with diabetes who receive recommended clinical services, including vision screening, foot care, and dental care, as well as maintaining A1C.

Link People to Needed Personal Health Services and Health Care

2.4.7   Increase culturally appropriate access, referrals, and reimbursements for CDC-recognized lifestyle change programs for the prevention of Type 2 diabetes.

2.4.8   Increase access and referrals by implemented bi-directional e-Referral in PWTF communities.

Assure a Competent Public and Personal Healthcare Workforce

2.4.9   Increase engagement of community health workers to promote linkages between health care delivery systems and community resources for diverse populations of adults with diabetes.

2.4.10   Increase engagement of non-physician team members (i.e., nurses, pharmacists, and community health workers) in diabetes management in health care systems.

Evaluate Effectiveness, Accessibility, and Quality of Health Services

2.4.11   Evaluate the effectiveness of using bi-directional e-Referral within PWTF communities.

Measure 2.5:	Reduce the at-risk rate of pediatric asthma hospitalizations by 1.5% and the disparity among Black Non-Hispanics by an additional 1%.

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Outcome Indicator	Baseline	2020 Target	Data Source
At-Risk Rate of Pediatric Asthma Hospitalization Overall	1.86 per 100 persons	1.83 per 100 person	*BRFSS, Hospital Discharge 2011*
At-Risk Rate of Pediatric Asthma Hospitalization, White Non-Hispanic	1.11 per 100 persons	1.09 per 100 persons	*BRFSS, Hospital Discharge 2011*
Ratio At-Risk Rate of Pediatric Asthma Hospitalization, Black Non-Hispanic to At-Risk Rate for White Non-Hispanics	3.69x(ratio)	3.62x (ratio)	*BRFSS, Hospital Discharge 2011*

	Baseline	2020 Target	Data Source
Ratio At-Risk Rate of Pediatric Asthma Hospitalization, Hispanic to At-Risk Rate for White Non-Hispanic	2.75x (ratio)	2.69x (ratio)	*BRFSS, Hospital Discharge 2011*

Numerator:	The number of patients 0-17 years of age who had hospitalization service during the measurement year due to asthma (data source: Hospital Discharge Data)
Denominator:	The number of patients 0 - 17 years of age who currently have asthma (data source: BRFSS)
Exclusions:	None
Timeframe:	Annual
How will this be measured?	BRFSS 2011, Hospital Discharge Data

Monitor Health to Identify and Solve Community Health Problems

2.5.1   Maintain on-going surveillance for asthma.

2.5.2   Prioritize indoor air quality assessments in Massachusetts schools with elevated rates of asthma.

Mobilize Community Partnerships to Identify and Solve Health Problems

2.5.3   Promote linkages between primary/specialty care and school nurses to ensure better coordination of care.

2.5.4   Reduce the use of products containing known asthma triggers and asthma causing agents in schools and early childcare settings.

Develop Policies and Plans That Support Individual and Community Health Efforts

2.5.5   Implement evidence-based, comprehensive, culturally adaptable programs that include patient self-management, environmental assessment, and remediation (home, school, and workplace).

2.5.6   Implement evidence-based, comprehensive smoking prevention and cessation programs, and include education on the effects of indoor and outdoor second hand smoke on infants and children.

Link People to Needed Personal Health Services and Health Care

2.5.7   Ensure utilization of bi-directional e-Referral in PWTF communities.

Assure a Competent Public and Personal Healthcare Workforce

2.5.8   Promote the use of evidence-based asthma guidelines by primary care providers including proper assessment, treatment and education of diverse patient populations and their families.

Evaluate Effectiveness, Accessibility, and Quality of Health Services

2.5.9   Evaluate the cost effectiveness of community level interventions for asthma.

2.5.10   Evaluate the effectiveness of using bi-directional e-Referral within PWTF communities.

Measure 2.6:   Decrease relative percentage of obesity among Massachusetts adults and youth by 5%.

Outcome Indicator	Baseline	2020 Target	Data Source
Adults with a self-reported BMI ≥ 30	22.9%	21.8%	*BRFSS*

Massachusetts public school students in grades 1, 4, 7 or 10 who were screened for BMI and had a BMI ≥ 30	15.7%	14.9%	*Body Mass Index Screening in Massachusetts Public School Districts*

Numerator:	Adults with a self-reported BMI ≥ 30
Denominator:	All adults that report both a height and a weight during the administration of BRFSS
Exclusions:	None
Timeframe:	Annual
How will this be measured?	BRFSS 2011

Numerator:	Massachusetts public school students in grades 1, 4, 7 or 10 who had a calculated BMI of ≥ 30
Denominator:	Massachusetts public school students in grades 1, 4, 7 or 10 who were screened for BMI
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual data collection as part of a legislative mandate

Diagnose and Investigate Health Problems and Hazards in the Community
2.6.1   Conduct environmental scan of fruit and vegetable pricing in different communities with an emphasis on low-income neighborhoods, analyze results.
2.6.2   Work with local health officials to ensure regular inspections of farmer's markets.

Inform, Educate, and Empower People About Health Issues
2.6.3   Educate on obesity and associated complications, as well as appropriate prevention and control strategies including physical activity guidelines and healthy eating choices.
2.6.4   Target the consumption of sugar-sweetened beverages among youth through educating parents on the potentially life-long consequences and providing resources to change their habits.

Mobilize Community Partnerships to Identify and Solve Health Problems
2.6.5   Work with communities, businesses, and local/state agencies to expand active living options (e.g., school site planning, improved transit, bike lanes, bike paths, pedestrian paths, and sidewalks).

Develop Policies and Plans That Support Individual and Community Health Efforts
2.6.6   Implement BMI screening and culturally and linguistically appropriate counseling as a routine part of primary care and promote appropriate referrals, including for physical activity and nutrition resources in the community.
2.6.7   Create and support open, accessible, and safe space for physical activity and recreation(e.g., number of parks, playgrounds and public pools, acreage of protected open space, number of communities that have passed the Community Preservation Act).

Enforce Laws and Regulations That Protect Health and Ensure Safety
2.6.8   Encourage MassDOT to fully implement Active Streets Legislation as measured by the appropriation of funds for implementation.

Partners/Resources for Chronic Disease Prevention and Control
- Early education and care programs (childcare)
- Elder service organizations
- Fitness organizations
- Healthcare Providers
- Healthy Schools Network
- Local Boards of Health and Health Departments
- Local Housing Authorities
- MA Hospital Association
- MA Medical Society
- MA Asthma Action Partnership
- MA Lung Association
- New England College of Occupational and Environmental Medicine
- Occupational health organizations
- Schools
- Toxic Use Reduction Institute

Other Plans That are Incorporated Directly or by Reference in Chronic Disease Prevention and Control
- Former Cardiovascular Disease Strategic Plan
- State Asthma Plan
- State Chronic Disease Plan
- The Division of Prevention and Wellness and its Chronic Disease Partnership
- Prevention and Wellness Trust Fund

Reduce morbidity and mortality related to infectious disease.

Why This Domain Is Important for Massachusetts:

Burden (Where We Are): Massachusetts has always had, and continues to have, one of the highest levels of infant immunization in the United States. As a result, most vaccine-preventable diseases of childhood have been essentially eliminated in Massachusetts. However, we know that loss of ground in immunization is associated with resurgence of vaccine preventable diseases, and that more effort is needed to achieve higher levels of recommended immunization of adolescents and adults. Lyme disease cases continue to increase and cause a large burden of morbidity in the Commonwealth. Sexually transmitted diseases still provide a prevention challenge, especially in adolescents and other at risk populations. Although Massachusetts has achieved consistent decreases in new HIV infection, there are significant population disparities in incidence and prevalence. Massachusetts is on the road to tuberculosis elimination, but to succeed, more effective screening and treatment of latent infection is necessary. Massachusetts has a large burden of hepatitis C, and the growing number of cases in young adults presents an urgent need for more prevention efforts. Healthcare associated infections and antibiotic resistant organisms are significant causes of morbidity and mortality. Prevention efforts have been successful, but more work needs to be done to eliminate preventable complications of healthcare.

Result (How This Affects Us): Foodborne illness and environmental threats continue to pose challenges to healthy living. Several thousands of cases of Lyme disease are reported annually, but we know that there is significant undercounting of cases and an unmeasured burden of morbidity and its consequences. Salmonella infection continues to be a major foodborne illness, causing more than 1,000 reported cases in Massachusetts every year. Many more cases are not diagnosed because individuals do not seek medical attention or receive laboratory testing. Incidence of chlamydia is highest among teens and young adults (15-24) (68% of reported cases) and women (69% of cases). Gonorrhea cases are highest among Blacks (175 per 100,000)[18], and syphilis cases are highest among Blacks (26 per 100,000) and men who have sex with men (MSM) (73% of new cases). The death rate for HIV is also highest among Blacks. Efforts to prevent STDs, HIV infection, hepatitis C and active tuberculosis are complicated by the need to reach hard to reach populations, which experience disproportionate impact and impaired access to care. Healthcare associated infection occurs across the full spectrum of the health care delivery system, and large proportions of the population are at risk. Antibiotic resistance has become a global crisis.

Action (What We Can Do): The data demonstrate the continued need for prevention efforts and comprehensive health education directed at infection and disease prevention, including in the area of sexuality and sexually transmitted diseases, hand hygiene, and food safety. Focus needs to be brought to the most effective interventions and efforts need to be made within the context of achievable goals and the evolution of health care reform efforts.

Standard 3A: Reduce morbidity related to vaccine preventable infections.

Measure 3.1: **Reduce the incidence of selected vaccine preventable diseases/increase immunization rates for selected vaccine preventable diseases.**

Outcome Indicator	Baseline	2020 Target	Data Source
Annual pertussis cases	652	<550	*MDPH BID Immunization Program 2012*
Annual invasive pneumococcal disease in children <5 years	50	<50	*MDPH BID Immunization Program 2012*
Percentage of 19-35 month olds who receive recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella, and pneumococcal vaccine (4:3:1:4:3:1:4 series)	73.5%	>80%	*CDC National Immunization Survey 2012*
MA residents > 6 months of age who receive an annual influenza vaccine	57.5%	> 60%	*CDC National Immunization Survey 2012 and MDPH BRFSS 2011-2012*
MA adults 18-49 years old with underlying conditions who receive annual influenza vaccine	35.1%	>35.1%	*MDPH BRFSS 2011*
MA adults 65 and older who receive annual influenza vaccine	66.9%	>66.9%	*MDPH BRFSS 2011*
Rate of complete HPV vaccination among MA females 13-17 years old	68.6%	80%	*CDC National Immunization Survey 2012*
Flu vaccine rates among healthcare workers	86%	>86%	*National Healthcare Safety Network (NHSN)*

Numerator:	Survey population indicating immunization
Denominator:	Total survey population
Exclusions:	Samples exclude institutionalized and other sub-populations
Timeframe:	Annual review
How will this be measured?	Population surveys and routine disease surveillance (See Appendix D)

Monitor Health to Identify and Solve Community Health Problems
   3.1.1   Use new and existing data systems to measure vaccine coverage among populations to examine disparities and target vaccine strategies; ensure access for local health departments.

Inform, Educate, and Empower People About Health Issues
   3.1.2   Provide public education on the safety and benefits of vaccines.
   3.1.3   Implement comprehensive reminder/recall systems in multiple languages, in print form as well as electronically (text messaging, etc.).

Develop Policies and Plans That Support Individual and Community Health Efforts
   3.1.4   Re-establish Massachusetts as a Universal Childhood Vaccine Distribution State for all vaccines recommended by the CDC and ACIP.

3.1.5 Ensure percentage of immunization exemptions for school entry statewide is maintained below 1.5%

3.1.6 Increase roll-out and routine use of the Massachusetts Immunization Information System (MIIS) to over 1,000 health care provider sites and inclusion of over 3,000,000 patient records.

3.1.7 Promote compliance with CDC guidelines for influenza prevention programs in healthcare facilities, which include vaccination.

Standard 3B: Reduce the incidence of tick-borne infections among MA residents.

Measure 3.2:   **Decrease by 10% Lyme disease reported in children under the age of 19.**

Outcome Indicator	Baseline	2020 Target	Data Source
Lyme disease reported among children under the age of 19	1,038 cases	935 cases	*MDPH BID Epidemiology Program 2012*

Numerator:	Confirmed reported cases in children under 19 years of age
Denominator:	N/A
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Routine disease surveillance (See Appendix D)

Inform, Educate, and Empower People About Health Issues
3.2.1 Distribute vector-borne disease prevention materials to all Massachusetts coaches and athletic associations.

3.2.2 Promote the appropriate use of tick and mosquito repellents through public information and local health departments.

3.2.3 Promote adoption of workplace policies and practices to prevent tick bites in high risk outdoor industries such as landscaping, construction, parks and recreation.

Mobilize Community Partnerships And Action
3.2.4 Explore collaborative opportunities for enhanced tick surveillance with local boards of health to inform patterns of tick-borne disease risk.

Develop Policies and Plans That Support Individual and Community Health Efforts
3.2.5 Increase the number of school systems that include tick bite prevention in the health or science curriculum.

3.2.6 Reduce tick exposure by using integrated pest management and landscape maintenance strategies.

Standard 3C: Decrease morbidity related to sexually transmitted infections.

Measure 3.3: **Decrease the incidence of sexually transmitted infections (chlamydia, gonorrhea, and syphilis) in adolescents and high-risk adult populations.**

Outcome Indicator	Baseline	2020 Target	Data Source
Chlamydia incidence - among adults and adolescents	349 per 100,000	313 per 100,000	*MDPH BID STD Surveillance Program 2011*
Gonorrhea incidence	36 cases per 100,000 155 cases per 100,000 for ages 20-24 106 cases per 100,000 for ages 25-29	29 per 100,000 124 per 100,000 85 per 100,000	*MDPH BID STD Surveillance Program 2011*
Gonorrhea incidence among Blacks	175 cases per 100,000	126 per 100,000	*MDPH BID STD Surveillance Program 2011*
Gonorrhea incidence among Hispanics/Latinos	44 cases per 100,000	38 per 100,000	*MDPH BID STD Surveillance Program 2011*
Syphilis incidence – among men who have sex with men (MSM)	363 cases in the MSM population	269 cases	*MDPH BID STD Surveillance Program 2011*

Numerator:	Reported sexually transmitted infections
Denominator:	Total MA population by age, race, and ethnicity (US Census Bureau); N/A for MSM
Exclusions:	None
Timeframe:	Quarterly
How will this be measured?	Routine disease surveillance (See Appendix D)

Inform, Educate, and Empower People About Health Issues
3.3.1   Establish and promote comprehensive sex education for middle school and high school to enhance prevention of sexually transmitted infections (STIs), and track whether this education reduces disease rates in high risk populations.
3.3.2   Educate and train providers about evidence-based treatment, resources, available referral services, and culturally and linguistically appropriate interventions.
3.3.3   Enhance levels of immunization of adolescents with HPV vaccine through provider and public education.
3.3.4   Promote condom use and availability among sexually active youth and adults.

Link People to Needed Personal Health Services and Health Care
3.3.5   Increase screening for STIs (chlamydia, gonorrhea and syphilis) in at risk populations (adolescents, minorities, and men who have sex with men).

Standard 3D: Reduce morbidity and mortality related to HIV/AIDS.

Measure 3.4: **Decrease the incidence of newly diagnosed HIV infections overall and among men who have sex with men (MSM) to meet multiple specified targets, and reduce racial and ethnic HIV infection disparities by 20%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Overall	694	652	*MDPH HIV/AIDS Surveillance Program 2012*
New HIV cases among men who have sex with men	317	285	*MDPH HIV/AIDS Surveillance Program 2012*
Relative rate of new HIV infections among Black, non-Hispanic vs. White, Non-Hispanic	10.0x white	8.0x white	*MDPH BID HIV/AIDS Surveillance Program 2012*
Relative rate of new HIV infections among Hispanic vs. White, Non-Hispanic	8.0x white	6.4x white	*MDPH BID HIV/AIDS Surveillance Program 2012*

Numerator:	(1) Number of reported cases. (2) Age-adjusted incidence rate for population
Denominator:	(1) N/A. (2) Age-adjusted incidence rate for white non-Hispanic
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Routine disease surveillance

Monitor Health to Identify and Solve Community Health Problems
  3.4.1   Sustain targeted testing for HIV among high-risk populations.

Inform, Educate, and Empower People About Health Issues
  3.4.2   Increase culturally- and linguistically-appropriate education, prevention counseling, and screening for HIV in high risk populations.
  3.4.3   Promote utilization of partner referral services for HIV+ individuals.
  3.4.4   Promote condom use and availability among sexually active youth and adults.

Mobilize Community Partnerships And Action
  3.4.5   Implement syringe exchange, drug treatment and other harm reduction measures.

Link People to Needed Personal Health Services and Health Care
  3.4.6   Reinforce routine screening for HIV in clinical settings (e.g., in substance abuse programs).
  3.4.7   Ensure sustained health insurance coverage and medication co-payment support for lower income persons with HIV infection to support adherence to medical care and medication regimens to reduce viral load.

Assure a Competent Public and Personal Healthcare Workforce
- 3.4.8   Educate providers about CDC guidelines regarding testing and early treatment, referrals to prevention and treatment services and culturally appropriate prevention, treatment and follow-up interventions, including strategies for HIV viral suppression.
- 3.4.9   Continue to utilize community health workers to reach populations at high-risk for HIV+.

Standard 3E: Reduce mortality related to viral hepatitis.

| Measure 3.5: | Increase the average time between diagnosis of hepatitis C virus (HCV) infection and death due to hepatitis C virus infection from 3 years to 4 years. |

Outcome Indicator	Baseline	2020 Target	Data Source
Average time from diagnosis with HCV infection to death	3 years	4 years	*MDPH BID Epidemiology Program*

Numerator:	Average time from diagnosis with HCV infection to death.
Denominator:	N/A
Exclusions:	None
Timeframe:	5 years
How will this be measured?	Hepatitis C surveillance data, MA death file match

Monitor Health to Identify and Solve Community Health Problems
- 3.5.1   Maintain and enhance disease surveillance for HCV infection.
- 3.5.2   Maintain and enhance the Massachusetts Sharps Injury Surveillance system and related intervention activities.

Inform, Educate, and Empower People About Health Issues
- 3.5.3   Promote adoption of best practices on sharps protection strategy for healthcare facilities as required under state and federal regulations.

Develop Policies and Plans That Support Individual and Community Health Efforts
- 3.5.4   Increase availability of comprehensive HCV prevention programs in Massachusetts.

Link People to Needed Personal Health Services and Health Care
- 3.5.5   Enhance HCV testing with community-based programs and community health centers.

Assure a Competent Public and Personal Healthcare Workforce
- 3.5.6   Educate and train providers about routine prevention, screening and treatment for HCV infection.

Standard 3F: Reduce morbidity related to healthcare acquired infections.

Measure 3.6:   **Reduce standard infection ratios (SIRs) to 1.00 or below for CLABSIs, SSIs, and CAUTIs in acute care hospitals through application of evidence-based interventions.**

Outcome Indicator	Baseline	2020 Target	Data Source
Central line associated bloodstream infections (CLABSI) SIR	0.7	<0.7	*National Healthcare Safety Network (NHSN), 2012*
Vaginal hysterectomy surgical site infection SIR	1.9	<1.00	*National Healthcare Safety Network (NHSN), 2012*
Catheter-associated urinary tract infections (CAUTI) SIR	1.45	<1.00	*National Healthcare Safety Network (NHSN), 2012*

Numerator:	Massachusetts-specific infection rate
Denominator:	National average infection rate
Exclusions:	Measures relate to specified procedures
Timeframe:	Annual
How will this be measured?	National Healthcare Safety Network (NHSN)

Monitor Health to Identify and Solve Community Health Problems
   3.6.1   Maintain and enhance the Commonwealth's public reporting infrastructure for Healthcare Associated Infections (HAI's), including sharing on a routine basis with the local health department in whose jurisdiction that healthcare facility is located.

Inform, Educate, and Empower People About Health Issues
   3.6.2   Enhance public education and quality of evidence-based infection prevention strategies (hand washing, aseptic technique, etc.) and prudent and effective use of antimicrobials in all health care settings, including acute, ambulatory and chronic care settings.

Mobilize Community Partnerships And Action
   3.6.3   Establish collaborative prevention programs between the public health and ambulatory care centers, dialysis units and long–term care facilities.

Assure a Competent Public and Personal Healthcare Workforce
   3.6.4   Establish and support routines for potentially infected healthcare workers to minimize contact with clients during periods of possible contagion, including sick leave.

Standard 3G: Reduce morbidity related to foodborne infections.

Measure 3.7: **Limit the yearly increase in reported campylobacter cases to less than 1% and maintain reported cases of salmonella at fewer than 1,200 per year.**

Outcome Indicator	Baseline	2020 Target	Data Source
Incidence of campylobacteriosis	1,350 cases	<1,462 cases	*MDPH BID Epidemiology Program 2012*
Incidence of salmonellosis	1,050 cases	<1,200 cases	*MDPH BID Epidemiology Program2012*

Numerator:	Number of reported campylobacteriosis and salmonellosis cases
Denominator:	N/A
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Routine disease surveillance (See Appendix D)

Diagnose and Investigate Health Problems and Hazards in the Community
3.7.1   Maintain the activities of the Working Group on Foodborne Illness Control which includes epidemiologists, laboratorians and environmental specialists.

Inform, Educate, and Empower People About Health Issues
3.7.2   Increase public awareness of foodborne illness infection by providing current information on the MDPH website on all foodborne illnesses.

3.7.3   Update and distribute educational materials regarding hand washing and the appropriate handling of high risk foods.

Enforce Laws and Regulations That Protect Health and Ensure Safety
3.7.4   Enforce isolation and quarantine regulations for food handlers infected with enteric pathogens, and for contacts of cases with diarrhea who are food handlers.

Partners/Resources for Infectious Disease Prevention and Control
- Businesses and professional organizations
- Coalition for Local Public Health
- Community health centers
- Community-based organizations
- Elder service organizations
- Faith-based organizations
- Health insurers
- Healthcare epidemiologists
- Healthcare Providers
- Healthy Schools Network
- Infection preventionists
- Infectious disease specialists
- Local public health departments
- MA Association of Occupational Health Nurses
- MA Operational Services Division (OSD)
- Media: including alternative media and non-English language media
- New England College of Occupational and Environmental Medicine
- Other health care providers
- Pharmacies
- Schools, colleges and universities
- Sustainable Hospital Program in the Center for Sustainable Production at U Mass Lowell
- Toxic Use Reduction Institute
- Veterinarians

Other Plans That are Incorporated Directly or by Reference in Infectious Disease Prevention and Control
- Comprehensive HIV/AIDS and HCV Monitoring and Evaluation Plan

Domain 4: Substance Abuse Prevention, Intervention, Treatment and Recovery

Promote mental and emotional health and reduce drug and alcohol abuse through prevention, treatment, and integration of care.

Why This Domain Is Important for Massachusetts:

Burden (Where We Are): Substance abuse affects the physical, social, and emotional health of millions of individuals each year. From a developmental perspective, individuals who begin drinking at a young age are more likely to develop alcohol dependence and use illicit drugs. 47% of adolescents who started to use alcohol before age 14 went on to use illicit drugs.[19] On average, the lifespan of individuals with substance use disorders is 22.5 years less than those without a substance use disorder.[20] According to the National Survey on Drug Use and Health (NSDUH) 2011-2012, 9.1% of the MA population age 12 and older had a past year dependence or abuse of illicit drugs or alcohol. Based on the same survey results, past year dependence and abuse of illicit drugs in MA was 2.51%, lower than the national average (2.67%). About 40% of individuals receiving substance abuse treatment within the public system are between the ages of 16 to 29 and 45% reported heroin as their primary drug of choice.[21] In 2012, unintentional opioid related overdose deaths were 668, which is a rate of 10.1 per 100,000.[22] The 5 year average (2008-2012) of non-fatal opioid related overdose hospital events (unintentional/undetermined) was 58.2 per 100,000.[23] During 1999-2008, overdose death rates, sales, and substance abuse treatment admissions related to Opioid Pain Relievers (OPRs) increased in parallel. The overdose death rate in 2008 was nearly four times the rate in 1999. Sales of OPRs in 2010 were four times those in 1999. According to the Centers for Disease Control and Prevention, in 2010, enough OPRs were sold to medicate every American adult with a typical dose of 5 mg of hydrocodone every 4 hours for 1 month. Increased use of OPRs has contributed to the overall increases in rates of overdose death and nonmedical use, and variation among states in OPR sales probably contributes to state variation in these outcomes.[24]

Although there are many programs and services that are available to treat individuals with substance use disorders, the majority of individuals who need substance abuse treatment are not receiving it. Based on NSDUH 2012, 94.6% of individuals with substance use disorders do not recognize a need for treatment; 3.7% recognized need for treatment and did not seek it; 1.7% recognized need for treatment and sought treatment.

Result (How This Affects Us): In March 2014, Governor Deval Patrick declared a public health emergency in Massachusetts in response to the growing opioid addiction epidemic. The Governor directed the Department of Public Health (MDPH) to take several action steps that will combat overdoses, stop the epidemic from getting worse, help those already addicted to recover and map a long-term solution to ending widespread opioid abuse in the Commonwealth. Governor Patrick also convened the New England Governors to establish multi-state and regional strategies to respond to the opioid epidemic in the region. These strategies include cross border data sharing from the Prescription Monitoring Program (PMP), safe opioid prescribing, alignment of law enforcement and prevention efforts, and access to treatment through cross border substance abuse treatment sharing.

Action (What We Will Do): Ongoing efforts are needed to provide a continuum of prevention, intervention, treatment and recovery support services. On August 6, 2014 Governor Patrick signed into law S. 2142, "An Act to Increase Opportunities for Long-Term Substance Abuse Recovery." The new law: (a) grants the Department of Public Health additional regulatory authority to control opioids; (b) mandates timely reporting from Chief Medical Examiners to MDPH and the U.S. Food and Drug Administration on overdose deaths, for early identification of risks and implementation of measures to reduce overdoses; (c) supports patient and clinician decision for treatment; and (d) supports access to treatment through mandatory reimbursement of Licensed Alcohol and Drug Counselors (LADC) by insurers and promotes coordination of care by granting MDPH the authority to issue new regulations and practice guidance.

Standard 4A: Prevent the development of alcohol and substance use disorders.

Measure 4.1: **Reduce the relative percentage of youth who report having tried alcohol for the first time before age 13 by 5%.**

Outcome Indicator	Baseline	2020 Target	Data Source
High school youth who have tried alcohol for the first time before age 13 years	14.6%	13.9%	*CDC MMWR YRBS 2012 (Data for 2011)*

Numerator:	High School youth who reported to have tried alcohol for the first time before age 13 in the statewide survey
Denominator:	All high school youth who participated in the statewide survey
Exclusions:	High Schools not participating in the statewide survey
Timeframe:	Bi-Annual measure
How will this be measured?	YRBS has a question on alcohol use in the High School module. The values in question "How old were you when you had your first drink of alcohol other than a few sips?" will be grouped as follows: "A" will indicate no use, "B"-"D" will indicate use before 13 and "E"-"G" will indicate use after 13.

Monitor Health to Identify and Solve Community Health Problems
4.1.1   Expand efforts to collect data on under-age substance use and misuse at the community level to monitor progress and implement targeted culturally and linguistically appropriate prevention strategies.

Inform, Educate, and Empower People About Health Issues
4.1.2   Promote the use of evidence-based strategies to support/enhance community prevention efforts and understanding of substance abuse and mental health related issues.
4.1.3   Increase social media and traditional media outreach through statewide public awareness and- parent-oriented campaigns that are built on evidence-based prevention that are culturally and linguistically adapted.
4.1.4   Promote the use of evidence-based strategies to address the environmental aspects of substance abuse (healthy and safe homes, workplaces, schools, and communities).

Mobilize Community Partnerships to Identify and Solve Health Problems
4.1.5   Increase the number of communities and multi-sector community partners engaged in policy/practice change to prevent/reduce underage drinking.
4.1.6   Ensure that MDPH/BSAS funded substance abuse prevention coalitions include community partners representing populations disproportionately impacted by substance abuse to prevent/reduce underage drinking.

Develop Policies and Plans That Support Individual and Community Health Efforts
4.1.7   Allocate and coordinate resources for substance abuse prevention with other state prevention providers/agencies to maximize community impact and effectiveness.

Increase the annual number of healthcare providers trained by MDPH/BSAS to incorporate screening and intervention for unhealthy substance use by 5%.

Outcome Indicator	Baseline	2020 Target	Data Source
Number of Health Care Providers trained annually	60	75	*MDPH/BSAS* *Quarterly reports from contracted training vendor*

Numerator:	Number trained annually
Denominator:	Number trained FY2014
Exclusions:	Healthcare providers not trained by MDPH/BSAS
Timeframe:	Quarterly Measure
How will this be measured?	Ongoing communication and monitoring of quarterly reports. BSAS vendor, MA SBIRT Training and Technical Assistance (TTA), maintains a Google Docs reporting mechanism used by all trainers (staff and consultants) to report the date and type of training, topic, number trained and credentials of those trained. These can be compiled quarterly to measure progress and reach.

Mobilize Community Partnerships to Identify and Solve Health Problems
 4.2.1   Consult with and coach practices to incorporate Screening, Brief Intervention, and Referral to Treatment (SBIRT) protocols into health care settings and practices, including primary care, hospitals, and school-based health practices in all middle and high schools.

Assure a Competent Public and Personal Healthcare Workforce
 4.2.2   Promote practitioner use of validated screening tools for adults and youth when screening for alcohol and other drug use.
 4.2.3   Conduct and promote provider training to implement culturally-competent screening and interventions.
 4.2.4   Offer SBIRT training and technical assistance to healthcare, social service and behavioral health providers.
 4.2.5   Collaborate with Massachusetts Child Psychiatry Access Project (MCPAP) to train and coach pediatricians and family practitioners in using SBIRT.
 4.2.6   Support the availability of validated screening tools that are translated and culturally adapted for various patient populations.

Measure 4.3:	**Reduce a specified multiple provider episode (MPE) rate in the state by 20% (i.e., the number of individuals who receive at least one Schedule II and/or III prescription opioid from 4 or more different prescribers and 4 or more different pharmacies during the calendar year divided by the state population).**		

Outcome Indicator	Baseline	2020 Target	Data Source
Rate per 100,000 individuals who received at least one Schedule II and/or III prescription opioid from 4 or more different prescribers and 4 or more different pharmacies during the year. 4 or more different prescribers and 4 or more different pharmacies during the year is the multiple provider episode (MPE) threshold.	Number: 17,709 Rate: 266.5/100,000	Target MPE Rate: 218/100,000	*MA ambulatory pharmacies and out-of-state pharmacies delivering to MA residents report dispensing data on all Schedule II – V prescriptions*

Numerator:	Number of individuals who meet the MPE threshold specified above
Denominator:	The population of Massachusetts for baseline year
Exclusions:	None
Timeframe:	Annual measure
How will this be measured?	Query the MA PMP database using an algorithm developed by MA PMP that identifies individuals with specified MPE thresholds within a specified date range

Monitor Health to Identify and Solve Community Health Problems
  4.3.1   Send out monthly electronic alert notifications to prescribers for those patients that meet a specified MPE threshold.

Inform, Educate, and Empower People About Health Issues
  4.3.2   Develop and disseminate county- and community-level PMP reports to help educate the public about controlled drug prescribing trends.

Mobilize Community Partnerships to Identify and Solve Health Problems
  4.3.3   Educate local law enforcement community about detecting controlled prescription drug diversion and misuse.

Develop Policies and Plans That Support Individual and Community Health Efforts
  4.3.4   Achieve maximum enrollment of practitioners into the MA Online PMP through automatic enrollment process.

Enforce Laws and Regulations That Protect Health and Ensure Safety
  4.3.5   Communicate new statutory requirements that mandate use of the MA Online PMP prior to prescribing certain controlled drugs to a patient for the first time (e.g., Schedule II and III opioids).

Assure a Competent Public and Personal Healthcare Workforce
  4.3.6   Develop training videos for end users within the provider community (prescribers, dispensers, and delegates) on how to use the MA Online PMP.

Measure 4.4:	Reduce the number of individuals identified per year with combined opioid prescriptions with an average morphine milligram equivalent (MME) greater than 100 mg per day by 10%.

Outcome Indicator	Baseline	2020 Target	Data Source
Number of individuals with combined opioid prescriptions with an average MME greater than 100 mg per day over the specified one year time period	**Number: 30,828**	**Number: 27,745**	*MA ambulatory pharmacies and out-of-state pharmacies delivering to MA residents report dispensing data on all Schedule II – V prescriptions*

Numerator:	Number of individuals whose combined opioid prescriptions exceed an average of 100 mg per day morphine equivalents over the year
Denominator:	No denominator for this measure
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Query the MA PMP database using a standardized morphine equivalent conversion factor table. An algorithm developed by MA PMP converts the daily dosages for opioids into MME.

Monitor Health to Identify and Solve Community Health Problems
4.4.1   Send out monthly electronic alert notifications to prescribers for those patients that meet a specified MPE threshold.

Inform, Educate, and Empower People About Health Issues
4.4.2   Develop and disseminate county- and community-level PMP reports to help educate the public about controlled drug prescribing trends.

Mobilize Community Partnerships to Identify and Solve Health Problems
4.4.3   Educate local law enforcement community about detecting controlled prescription drug diversion and misuse.

Develop Policies and Plans That Support Individual and Community Health Efforts
4.4.4   Achieve maximum enrollment of practitioners into the MA Online PMP through automatic enrollment process.

Enforce Laws and Regulations That Protect Health and Ensure Safety
4.4.5   Communicate new statutory requirements that mandate use of the MA Online PMP prior to prescribing certain controlled drugs to a patient for the first time (e.g., Schedule II and III opioids).

Assure a Competent Public and Personal Healthcare Workforce
4.4.6   Develop training videos for end users within the provider community (prescribers, dispensers, and delegates) on how to use the MA Online PMP.

Standard 4B: Strengthen local capacity to prevent substance abuse.

Measure 4.5: Ensure that 100% of BSAS-funded prevention coalitions and the integrated communities and municipalities use the Strategic Prevention Framework (SPF).

Outcome Indicator	Baseline	2020 Target	Data Source
BSAS-funded substance abuse prevention coalitions using the Strategic Prevention Framework (SPF)	100%	100%	*MDPH/BSAS Required Reports from contracted coalitions and MDPH contract management reports*

Numerator:	Number of MDPH/BSAS-funded substance abuse prevention coalitions using the SPF
Denominator:	Total number of funded substance abuse prevention coalitions
Exclusions:	Non MDPH/BSAS-funded substance abuse prevention coalitions
Timeframe:	Quarterly Measure
How will this be measured?	Providers' yearly strategic plans, site visit and semi-annual reports

Mobilize Community Partnerships to Identify and Solve Health Problems
  4.5.1 Increase community and statewide capacity to implement and sustain a Strategic Prevention Framework based, comprehensive prevention approach that includes evidence-based policies, programs and strategies and/or environmental strategies to prevent substance abuse.
  4.5.2 Ensure that MDPH/BSAS funded substance abuse prevention coalitions include community partners who represent populations disproportionately impacted by substance abuse.

Assure a Competent Public and Personal Healthcare Workforce
  4.5.3 Provide technical assistance to coalitions on evidence-based practices including the Strategic Prevention Framework (SPF).

Evaluate Effectiveness, Accessibility, and Quality of Health Services
  4.5.4 Provide assistance to coalitions to evaluate implemented strategies.

Standard 4C: Improve diversity among individuals served.

Measure 4.6:   Increase the relative percentage of non-white opioid addicted individuals enrolled in MDPH/BSAS-funded medication assisted treatment programs by 5%.

Outcome Indicator	Baseline	2020 Target	Data Source
Number of non-whites enrolled in medication assisted treatment in MDPH/BSAS-funded programs	15.8%	16.6%	*DPH/BSAS enrollment data*

Numerator:	Number of non-whites enrolled in medication assisted treatment in MDPH/BSAS-funded programs
Denominator:	Total number of individuals enrolled in medication assisted treatment in DPH/BSAS-funded programs
Exclusions:	Individuals served in medication assisted treatment programs not funded by MDPH/BSAS.
Timeframe:	Annual
How will this be measured?	BSAS MIS includes a question on race. Using this variable we can calculate the % of enrollments that are non-white.

Mobilize Community Partnerships to Identify and Solve Health Problems
- 4.6.1   Support providers in developing plans to engage a more diverse population through increased outreach to diverse community groups.
- 4.6.2   Promote program outreach plans to increase client participation in medication assisted treatment.

Develop Policies and Plans That Support Individual and Community Health Efforts
- 4.6.3   Support recommendations from the Health Planning Council (created under Chapter 224) relevant to the appropriate supply and distribution of substance abuse resources.
- 4.6.4   Facilitate performance incentives to support outreach and treatment enrollment of individuals representing populations that are disproportionately represented.

Link People to Needed Personal Health Services and Health Care
- 4.6.5   Support community based programs that target and are operated by traditionally underserved populations.
- 4.6.6   Support clients to effectively navigate and access care.
- 4.6.7   Promote the integration of cultural and linguistically appropriate services (CLAS) in service delivery throughout the treatment system.

Partners/Resources for Substance Abuse Prevention, Intervention, Treatment and Recovery

- Academic partners
- Behavioral health organizations
- Children and family services
- Children's Behavioral Health Initiative
- Community coalitions
- Consumer quality initiatives (www.cqi-mass.org)
- Criminal justice system
- Elder service organizations
- Employers
- Faith communities
- Health insurers
- Healthcare Providers
- Hospitals and clinics and CHC's
- Local Housing Authorities
- MA Department of Elementary and Secondary Education (DESE)
- MA Chapter of American Academy of Pediatrics (AAP) Children's Mental Health Task Force
- MA Council on Compulsive Gambling
- MA Gaming Commission
- Health Planning Council
- MA Child Psychiatry Access Project (MCPAP) and MCPAP for Moms
- MA Psychological Association
- National Empowerment Center (www.power2u.org)
- Outreach programs
- Peer to peer programs
- Post-Partum Depression Commission
- Recovery Learning Communities (6 throughout Massachusetts)
- Substance abuse treatment providers
- Tobacco Prevention and Control
- Veterans groups / services
- Youth programs/organizations

Domain 5: Injury, Suicide and Violence Prevention

Prevent injuries, suicide and violence and promote trauma-informed care across all settings, particularly in clinical and public health services.

Why This Domain Is Important for Massachusetts:

Burden (Where We Are):MA residents have the right to be safe in their homes, communities and workplaces. Injuries from all causes (unintentional, self-inflicted, violence) are the number one cause of mortality and morbidity for people age 1-44 in the Commonwealth and the third leading cause of death for all ages. Violence, suicide and injuries can have significant physical consequences, but they also result in significant social, emotional, and financial consequences. They impact our lives, our families, our communities, and our institutions.

However, violence, suicide and unintentional injury do not affect all populations equally. The death rate for falls is highest among the elderly at 49.8 deaths per 100,000 MA residents aged 65 and older. The death rate for poisoning is highest among males. Males ages 60 and older are almost twice as likely to commit suicide when compared to the statewide average, 14.7 and 8.8 per 100,000, respectively. Among youth age 15-24, homicide rates are highest among Black Non-Hispanic males and Hispanic males with 82.7 and 40.7 homicides per 100,000, respectively. Conversely, young women experience the highest rates of sexual violence. Prevalence of lifetime dating violence victimization experiences among MA high school students is highest among LGBT students and females at 32.7% and 15.1%, respectively. In addition, the rate of hospitalizations for work-related injuries is 1.5 times higher among Hispanic workers than Non-Hispanic Whites.

Result (How This Affects Us): Violence, suicide and unintentional injury have serious impacts on lifetime health with substantial human and economic costs borne by individuals, families, employers and society at large. In addition to the physical consequences of the injury, research has documented lifetime impacts related to chronic disease and behavioral health outcomes. These issues significantly add to the burden on our healthcare system and have additional impact in terms of thousands of lost workdays and other indirect costs to families, communities, and employers.

Action (What We Can Do): Violence, suicide and unintentional injury are in large part preventable. There is an expanding evidence base for effective prevention strategies that include environmental and engineering approaches, policy and regulation, as well as professional and public education. Violence, injury and suicide prevention require collaborative approaches among multidisciplinary stakeholders. Public health and healthcare practitioners have important roles to play. Our health and public health systems must become "trauma-informed" – by developing approaches that do not re-traumatize survivors, whether or not they chose to disclose a trauma history, and by improving screening and referral practices. Additionally, partnerships with community-based organizations, policy makers (at local, regional, and state levels), public safety, child protection, education, employers and community members, including survivors, are essential for developing and implementing effective prevention and response strategies. Sudden Unexplained Infant Death remains a critical area for data collection and analysis as represented by the strategies in the SHIP.

Standard 5A: Reduce unintentional injury.

Measure 5.1: Stabilize the rate of fatal poisonings, with particular focus on opioid related poisonings.

Outcome Indicator	Baseline	2020 Target	Data Source
Age adjusted rate of unintentional and undetermined intent poisoning deaths	12.4 per 100,000 residents	12.4 per 100,000 residents	*Registry of Vital Records and Statistics, MDPH*
Age adjusted rate of unintentional and undetermined intent opioid poisoning deaths	10.1 per 100,000 residents	10.1 per 100,000 residents	*Registry of Vital Records and Statistics, MDPH*

Numerator:	Total number of unintentional and undetermined intent poisoning deaths
Denominator:	Total number of MA residents
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual reporting from the Injury Surveillance Program

Numerator:	Number of unintentional and undetermined intent opioid poisoning deaths
Denominator:	Total number MA residents
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual reporting from the Injury Surveillance Program

Monitor Health to Identify and Solve Community Health Problems
5.1.1   Support efforts to obtain poison-related data that can provide timely and accurate information to inform program and policy initiatives.

Inform, Educate, and Empower People About Health Issues
5.1.2   Support efforts for poison prevention education to parents.

Mobilize Community Partnerships to Identify and Solve Health Problems
5.1.3   Sustain and enhance collaborations among MDPH partners (injury prevention, substance abuse, prescription monitoring) and non-governmental partners/stakeholders to reduce the rate of opioid related deaths.
5.1.4   Support poison prevention efforts for people of all ages through the Poison Control Center.

Measure 5.2: **Prevent an increase in the rate of unintentional fall deaths among residents ages 65+ years.**

Outcome Indicator	Baseline	2020 Target	Data Source
Age-adjusted unintentional fall death rate ages 65+	49.8 per 100,000	49.8 per 100,000	*Registry of Vital Records and Statistics*

Numerator:	Number of unintentional fall deaths among MA residents ages 65+ years
Denominator:	Number of MA residents ages 65+ years (age adjusted, per 100,000 persons)
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual report from the Injury Prevention and Control Program

Monitor Health to Identify and Solve Community Health Problems
  5.2.1   Conduct surveillance activities utilizing multiple data sources, routinely monitoring the magnitude of the problem, trends, circumstances, and rates by demographic sub-groups. Utilize data in planning, implementation and in the evaluation of programming.

Diagnose and Investigate Health Problems and Hazards in the Community
  5.2.2   Identify, access, and analyze all sources of data on causes of and locations of falls for those 65 and over and develop procedures for improving coding of such data.

Mobilize Community Partnerships to Identify and Solve Health Problems
  5.2.3   Continue to convene the Massachusetts Falls Prevention Coalition.

Develop Policies and Plans That Support Individual and Community Health Efforts
  5.2.4   Promote evidence-based clinical decision supports for falls risk and prevention in clinical settings.
  5.2.5   Promote implementation of evidence-based. multi-faceted, culturally appropriate programs for community-dwelling older adults that integrate fall risk reduction strategies (physical activity; exercise; balance training; medication review and management; vision, hearing, and foot care) and home/environment modification.
  5.2.6   Develop comprehensive, culturally and linguistically appropriate home safety program for families and caregivers, focusing on injury risks for elders.

Link People to Needed Personal Health Services and Health Care
  5.2.7   Promote the use of bi-directional e-referral to link patients to community-based falls prevention activities through the work of the Prevention and Wellness Trust Fund program.

Assure a Competent Public and Personal Healthcare Workforce
  5.2.8   Support training for evidence-based falls prevention programming including Matter of Balance, Tai Chi and Otago.

Evaluate Effectiveness, Accessibility, and Quality of Health Services
  5.2.9   Evaluate the effectiveness of community based falls prevention programming in Prevention and Wellness Trust Fund grantee program communities.

Engagement with Governing Entities
  5.2.10   Continue to convene the Massachusetts Commission on Falls Prevention and engage MassHealth and the Executive Office of Elder Affairs.

Measure 5.3: **Decrease the rate of unintentional motor vehicle traffic deaths among MA residents by 5%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Age-adjusted unintentional motor vehicle traffic death rate	5.1 per 100,000 persons	4.8 per 100,000	*Registry of Vital Records and Statistics, MDPH*

Numerator:	Number of unintentional motor vehicle traffic deaths among MA residents
Denominator:	Number of MA residents (age adjusted, per 100,000 persons)
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual report from the Injury Prevention and Control Program

Monitor Health to Identify and Solve Community Health Problems
- 5.3.1 Conduct surveillance activities utilizing multiple data sources, routinely monitoring the magnitude of the problem, trends, circumstances, and rates by demographic sub-groups.
- 5.3.2 Utilize data in planning, implementation and in the evaluation of programming.

Inform, Educate, and Empower People About Health Issues
- 5.3.3 Promote child passenger safety including caregiver education on proper infant car seat use and booster seat use (e.g., fitting stations for car seats).
- 5.3.4 Promote strategies to address impaired driving including improvements to ignition interlock legislation and use and public awareness of adverse effects of driving under the influence of alcohol, marijuana, or certain medications.
- 5.3.5 Promote strategies that address young drivers including improvements to the Graduated Driver's License program and social marketing campaigns on safe driving (speed, texting, seat belts) aimed at young drivers.
- 5.3.6 Support stakeholder efforts through dissemination of the latest available data, best and promising practices, and latest research.

Mobilize Community Partnerships to Identify and Solve Health Problems
- 5.3.7 Promote implementation of comprehensive workplace safe driving programs as recommended by Network of Employers for Traffic Safety (NETS), National Highway Traffic Safety Administration (NHTSA), and Occupational Safety and Health Administration (OSHA) that also address vehicle maintenance and work schedules that allow for safe driving.

Develop Policies and Plans That Support Individual and Community Health Efforts
- 5.3.8 Promote increased passenger restraint use by supporting passage of primary seat belt legislation.
- 5.3.9 Support implementation of the MassDOT Strategic Highway Safety Plan.
- 5.3.10 Increase the use of traffic calming strategies in high risk areas including structural changes to road layout, use of school crossing areas, reducing speed limits, etc.

Enforce Laws and Regulations That Protect Health and Ensure Safety
- 5.3.11 Support high visibility enforcement of distracted driving laws.

Measure 5.4: **Reduce the rate of unintentional injury deaths among residents ages 0-19 years by 10%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Unintentional injury death rate among residents 0-19 years	4.3 per 100,000	3.9 per 100,000	*Registry of Vital Records and Statistics, MDPH*

Numerator:	Number of unintentional deaths among MA residents ages 0-19 years
Denominator:	Number of MA residents ages 0-19 years
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual report from the Injury Prevention and Control Program

Monitor Health to Identify and Solve Community Health Problems
 5.4.1 Improve data collection, including death scene investigation, of Sudden Unexpected Infant Deaths (SUIDs).
 5.4.2 Conduct surveillance activities utilizing multiple data sources, routinely monitoring the magnitude of the problem, trends, circumstances, and rates by demographic sub-groups.
 5.4.3 Utilize data to document and track disparities, and in planning, implementation and evaluation of programming.
 5.4.4 Develop electronic data systems for camp injuries reporting in Massachusetts.

Inform, Educate, and Empower People About Health Issues
 5.4.5 Promote infant safe sleep practices in a culturally appropriate manner through public and professional education efforts.
 5.4.6 Promote drowning prevention efforts including pool safety regulations, public education regarding supervising swim and bath time, swim lessons, etc.
 5.4.7 Work with child serving agencies to promote injury prevention strategies in the home, community, and child care settings.
 5.4.8 Coordinate data sharing for camp and pool injuries with Bureau of Environmental Health (BEH).

Develop Policies and Plans That Support Individual and Community Health Efforts
 5.4.9 Promote trauma-informed model policies and practices for screening and universal education in varied health and public health settings for suicidality and all forms of violence.
 5.4.10 Promote US Preventive Services Task Force recommendations for screening for domestic and sexual violence in all primary care settings for women.

Enforce Laws and Regulations That Protect Health and Ensure Safety
 5.4.11 Address improved awareness and enforcement of protective helmet laws.

Evaluate Effectiveness, Accessibility, and Quality of Health Services
 5.4.12 Implement, support and evaluate state sports related head injury concussion legislation and regulation (including parent, coach and student education, enforcement of graduated return to play/academics provisions, and provider education for medical clearance).

Standard 5B: Reduce suicides and suicidal behavior for all ages.

Measure 5.5:   Prevent an increase in the age adjusted rate of suicide among MA residents, particularly those most at risk.

Outcome Indicator	Baseline	2020 Target	Data Source
Age adjusted rate of suicide	8.8 per 100,000 persons	8.8 per 100,000	*Registry of Vital Records and Statistics (RVRS)*
Ratio of suicides among MA males ages 60+ to all MA residents	1.67x (ratio)	1.50x (ratio)	*Registry of Vital Records and Statistics*

Numerator:	Number of suicides among MA residents
Denominator:	Number of MA residents (age adjusted rate per 100,000)
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual MDPH Death Report (RVRS)

Numerator:	Number of suicides among MA males ages 60 years and older
Denominator:	Number of MA males ages 60 years and older
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual reports from the MDPH Division of Violence and Injury Prevention

Monitor Health to Identify and Solve Community Health Problems
    5.5.1   Continue surveillance utilizing suicide death and MVDRS databases.

Inform, Educate, and Empower People About Health Issues
    5.5.2   Provide Gatekeeper Training to the general public.

Mobilize Community Partnerships to Identify and Solve Health Problems
    5.5.3   Foster suicide prevention through the support of the statewide MA Coalition for Suicide Prevention, Regional Coalitions and Community Coalitions.

Develop Policies and Plans That Support Individual and Community Health Efforts
    5.5.4   Share, create, and standardize culturally and linguistically appropriate tools to assess risk.
    5.5.5   Promote means restriction wherever possible.
    5.5.6   Promote suicide prevention in public policy, workplaces, schools, state agencies and other organizations.
    5.5.7   Promote innovative promising approaches to serve hard-to-reach populations.
    5.5.8   Promote trauma-informed model policies and practices for screening and universal education in varied health and public health settings for suicidality and all forms of violence.

Enforce Laws and Regulations That Protect Health and Ensure Safety
    5.5.9   Amend existing hospital regulations to require universal education and suicidality and violence screening.

Link People to Needed Personal Health Services and Health Care
- 5.5.10 Provide culturally and linguistically appropriate postvention services to systems after a suicide.
- 5.5.11 Assure smooth continuum of care (track referrals to and from hospitals).

Assure a Competent Public and Personal Healthcare Workforce
- 5.5.12 Provide suicide risk assessment and management training to enhance the skills of clinical staff who work in health, mental health and substance abuse settings.

Research for New Insights and Innovative Solutions to Health Problems
- 5.5.13 Promote evidence based and best practice strategies for suicide prevention that are culturally and linguistically appropriate.
- 5.5.14 Assess gatekeeper training effectiveness through evaluation of trainings.

Engagement with Governing Entities
- 5.5.15 Promote suicide prevention activities by other state agencies.
- 5.5.16 Provide resources to Department of Veterans Services and Executive Office of Elder Affairs for suicide prevention activities specific to veterans and elders.

Standard 5C: Reduce work-related injury and violence.

Measure 5.6: Reduce rates of work-related injuries among public and private sector employees, particularly those at greatest risk, to meet multiple specified targets.

Outcome Indicator	Baseline	2020 Target	Data Source
Non-fatal work-related injuries resulting in medical treatment or restricted time, private sector workers	3.0 injuries/100 FTEs	2.7/100 FTEs	*BLS Annual Survey of Occupational Injuries and Illnesses*
Work-related injuries resulting in paid workers compensation claims among employees of Executive Office Agencies	3.2 per 100 FTEs	3.0 per100 FTEs	*MA Human Resource Division, 2013*
Emergency department visits for work-related injuries by workers ages < 24	3.0 per 100 FTEs	2.9 per 100 FTE	*MA Emergency Department Database, Center for Health Information and Analysis*
Disparity in rates of hospitalization for work-related injuries for Hispanics and Non-Hispanic Whites	1.50x (ratio)	1.40x (ratio)	*MA Inpatient Hospital Discharge Database, Center for Health Information and Analysis*

Numerator:	Estimated annual number of injuries resulting in medical treatment and/or lost or restricted time among private sector workers, as reported by employers
Denominator:	Estimated number of full time equivalent employees (FTEs) in private sector industries as reported by employers, for the same calendar year. (An FTE is computed based on a 40 hour work week for 50 weeks per year, or 2,000 hours per year.)
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Annual Occupational Health Indicator report that includes assessment of trends of last five years

Numerator:	Annual number of workers' compensation (WC) claims incurring costs to the Commonwealth among employees of Executive Office Agencies
Denominator:	Number of full time equivalent employees (FTEs) in state Executive Office agencies (An FTE in the Commonwealth is computed based on a 37.5 hour work week for 50 weeks per year, or 1,875 hours per year.)
Exclusions:	None
Timeframe:	Annual(fiscal year basis)
How will this be measured?	Annual report prepared by HRD that includes rates for all Executive Branch agencies

Numerator:	Annual number of emergency department (ED) visits for injuries among persons under age 25 paid for by workers' compensation (WC) insurance – statewide
Denominator:	Statewide number of full time equivalent employees (FTEs) age 15-24 years of age for the same calendar year
Exclusions:	ED injury visits paid for by WC among persons under age 15 (as no employment denominator data available for the youngest workers)
Timeframe:	Annual
How will this be measured?	Annual Occupational Health Indicator report that includes assessment of trends over last five years

Numerator:	Disparity measure numerator: Rate of hospitalization for work-related injuries for Hispanics
	Definition of rate numerator: Number of hospitalizations with a primary diagnosis of injury paid for by Workers' Compensation during 2 calendar years, Hispanics and Non-Hispanic Whites
Denominator:	Disparity measure denominator: Rate of hospitalization for work-related injuries for Non-Hispanic Whites
	Definition of rate denominator: Number of full time employee equivalents (FTEs) during 2 calendar years, Hispanic and Non-Hispanic Whites
Exclusions:	Hospitalizations paid for by WC among persons under age 15 (as no employment denominator data available for the youngest workers)
Timeframe:	Biannual
How will this be measured?	Periodic occupational health disparity measures generated by the Occupational Health Surveillance Program

Monitor Health to Identify and Solve Community Health Problems

5.6.1   Maintain and enhance existing systems for surveillance of work-related injuries placing special emphasis on populations at high risk (e g., younger workers, immigrant and minority workers, temporary workers); generate local area data to inform community initiatives.

5.6.2   Collaborate with public health, health care, or other partners to develop a model Community Health Needs Assessment that incorporates consideration of workplace safety as well as other factors influencing the health of the community.

Diagnose and Investigate Health Problems and Hazards in the Community

5.6.3   Conduct in-depth research oriented investigations of select fatal occupational injuries, including Hispanic and immigrant worker deaths, to identify contributing factors.

Inform, Educate, and Empower People About Health Issues

5.6.4   Provide technical assistance to employers and workers to promote development of effective workplace injury and illness prevention programs, placing special emphasis on reaching workplaces that employ younger and other workers at disproportionate risk for injury.

5.6.5   Incorporate workplace health and safety training in workforce development programs.

5.6.6   Use ethnic media and social media tools to provide prevention information to immigrant/minority workers.

Mobilize Community Partnerships to Identify and Solve Health Problems

5.6.7   Pilot innovative community based interventions to improve safety of hard to reach workers such as those in residential construction and homecare.

5.6.8   Foster collaborations between local academic institutions and industry to promote development of innovative engineering and systems approaches to reducing workplace risks.

5.6.9   Engage leaders of communities most impacted to become spokespeople for workplace safety and violence prevention (e.g., teen peer leaders and others).

Develop Policies and Plans That Support Individual and Community Health Efforts

5.6.10   Create a sustainable infrastructure to improve health and safety conditions for Commonwealth employees and extend technical assistance to municipalities to improve health and safety conditions of municipal workers.

5.6.11   Promote development and implementation of workplace violence prevention and crisis response plans in health and social services agencies that provide direct services to clients.

5.6.12   Promote development of model safe patient handling programs in healthcare facilities to protect both workers and patients.

Enforce Laws and Regulations That Protect Health and Ensure Safety
    5.6.13   Enforce health and safety and child labor laws.

Engagement with Governing Entities
    5.6.14   Sustain and enhance interagency collaborations to coordinate efforts to improve worker safety and health (e.g., the Massachusetts Coalition for Occupational Safety and Health and the MA Youth Employment and Safety Team).

Standard 5D:	Reduce gender based and youth violence.

Measure 5.7:	Reduce sexual and domestic violence, with particular focus on disparate populations, to meet multiple specified targets.

Outcome Indicator	Baseline	2020 Target	Data Source
Prevalence of past year sexual violence victimization experiences among MA women	5.1%	4.6%	*Massachusetts Behavioral Risk Factor Surveillance System*
Prevalence of lifetime dating violence victimization experiences among female MA high school students	15.1%	13.6%	*Massachusetts High School Youth Health Survey*
Prevalence of lifetime dating violence victimization experiences among male MA high school students	7.1%	6.4%	*Massachusetts High School Youth Health Survey*
Prevalence of lifetime sexual violence victimization among LGB MA high school students	32.7%	29.4%	*Youth Risk Behavior Survey and Youth Health Survey*
Prevalence of lifetime sexual violence victimization among MA high school students with disabilities	15.5%	14.0%	*Youth Health Survey*

Numerator:	MA women, ages 18 and older who have experienced sexual violence in the past year
Denominator:	MA women, ages 18 and older
Exclusions:	MA men, MA females under the age of 18, MA residents who do not own a telephone, MA residents who live in institutional settings, MA residents with cognitive or communication disabilities that preclude participation in a telephone survey
Timeframe:	Biannual (SV module in the 2015, 2017, and 2019)
How will this be measured?	Reduction in the prevalence across years

Numerator:	Number of female high school students who report having experienced dating violence and number of male high school students who report having experienced dating violence, respectively
Denominator:	Number of female high school students who have ever been on a date and number of male high school students who have ever been on a date, respectively
Exclusions:	MA youth not in high school, MA adults who are not students in high school, MA high school students who have never been on a date
Timeframe:	Biannual (odd years)
How will this be measured?	Reduction in the prevalence estimates over the five measurement periods available through this survey

Numerator:	Number of MA LGB high school students who have experienced sexual violence
Denominator:	Number of MA LGB high school students
Exclusions:	MA youth not in high school, adults who are not students in high school, MA high school students who do not self-identify as lesbian, gay, or bisexual
Timeframe:	Biannual (odd years)
How will this be measured?	Reduction in prevalence

Numerator:	Number of MA high school students with disabilities who have experienced sexual violence
Denominator:	Number of MA high school students with disabilities
Exclusions:	MA youth not in high school, adults who are not students in high school, MA high school students who do not self-identify a form of disability captured by the MA YHS disability questions
Timeframe:	Biannual (odd years)
How will this be measured?	Reduction in prevalence

Inform, Educate, and Empower People About Health Issues

5.7.1   Advocate for the adoption of healthy relationship content in all middle school and high school health curricula used in MA.

5.7.2   Promote effective outreach/social marketing strategies among vendors to ensure a broader knowledge of sexual, dating, and adult intimate violence intervention resources in MA.

Mobilize Community Partnerships to Identify and Solve Health Problems
    5.7.3   Promote and partner with positive youth development-based violence prevention, sexual health promotion, community mobilization, and related programs to prevent intimate partner and sexual violence.
    5.7.4   Assure formal relationships (via MOUs and contracts) between clinical providers and community-based victim services programs to support cross trainings and needed referrals to ensure trauma-informed care.

Develop Policies and Plans That Support Individual and Community Health Efforts
    5.7.5   Advocate for adoption of effective environmental, policy, and culturally appropriate program strategies for reducing sexual abuse and promoting healthy relationships in early childhood centers, schools, colleges, and youth serving organizations.
    5.7.6   Promote trauma-informed model policies and practices for screening and universal education in varied health and public health settings for suicidality and all forms of violence.

Link People to Needed Personal Health Services and Health Care
    5.7.7   Assure quality service provision for survivors of sexual and domestic violence in health care and community-based settings.
    5.7.8   Promote the development of age-appropriate, positive youth-development-informed dating violence perpetrator intervention programs in consultation with existing survivor services and MA Certified Batterer Intervention Programs.

Assure a Competent Public and Personal Healthcare Workforce
    5.7.9   Enhance training opportunities for sexual and domestic violence prevention educators, peer leaders, and advocates to build local and state system capacity.
    5.7.10   Promote effective, best practice strategies for preventing, responding to, and intervening in sexual and dating/domestic violence across the lifespan, with specific attention to disparately impacted populations, such as the LGBT community and persons with disabilities.
    5.7.11   Promote best practices that support victim empowerment and safety along with abuser accountability, behavior change and reduced recidivism, in services for people who perpetrate domestic and sexual violence.
    5.7.12   Promote systems of care that are informed about the impact of trauma on physical and behavioral health and support provider training on prevalence and health impact of violent victimization as well as trauma-informed environments, care, screening, and referral practices.

Research for New Insights and Innovative Solutions to Health Problems
    5.7.13   Develop additional efforts to evaluate the effectiveness of dangerousness assessment and intervention, including the development of tools for assessing risks to populations most impacted.

Maintain Administrative Management Capacity
    5.7.14   Assess hospital management expertise related to trauma-informed care.

Measure 5.8: **Reduce fatal violence among youth age 15-24 with particular focus on disparate populations, to meet multiple specified targets.**

Outcome Indicator	Baseline	2020 Target	Data Source
Homicide rate per 100,000 among MA male youth, ages 15 to 24	14.9 homicides per 100,000	13.7 homicides per 100,000	*Registry of Vital Records and census data* **Age and sex specific rates per 100,000; postcensal annual estimates of MA population by race/ethnicity, sex, and age group*
Homicide rate per 100,000 among MA Black, Non-Hispanic male youth, ages 15 to 24	82.7 homicides per 100,000	74.8 homicides per 100,000	*Registry of Vital Records and census* **Age and sex specific rates per 100,000; postcensal annual estimates of MA population by race/ethnicity, sex, and age group*
Two-year homicide rate per 100,000 among MA Hispanic male youth, ages 15 to 24	40.7 homicides per 100,000	38.7 homicides per 100,000	*Registry of Vital Records and census* **Age and sex specific rates per 100,000; postcensal annual estimates of MA population by race/ethnicity, sex, and age group*
Prevalence of carrying a weapon in the past 30 days among MA high school boys	19.9%	17.9%	*Youth Health Survey*
Prevalence of carrying a weapon in the past 30 days among MA high school girls	4.4%	4.4% (or lower)	*Youth Health Survey*

Numerator:	Number of MA males, ages 15-24 who die by homicide
Denominator:	Number of MA males, ages 15-24
Exclusions:	MA female residents, MA adult male residents ages 25 and older, MA male youth, ages 14 and younger
Timeframe:	Annual
How will this be measured?	Reduction in rate per 100,000

Numerator:	Number of MA Black, Non-Hispanic males, ages 15-24 who die by homicide
Denominator:	Number of MA Black, Non-Hispanic male residents, ages 15-24
Exclusions:	MA female residents, MA adult male residents ages 25 and older, MA male youth, ages 14 and younger, MA male youth, ages 15-24, race other than Black, Non-Hispanic
Timeframe:	Annual
How will this be measured?	Reduction in rate per 100,000

Numerator:	Number of MA Hispanic males, ages 15-24 who die by homicide
Denominator:	Number of MA Hispanic male residents, ages 15-24
Exclusions:	MA female residents, MA adult male residents ages 25 and older, MA male youth, ages 14 and younger, MA male youth, ages 15-24, who are not Hispanic
Timeframe:	Annual
How will this be measured?	Reduction in two-year combined rate per 100,000, combination years = 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019

Numerator:	Number of MA male high school students who report carrying a weapon in the past 30 days, and number of MA female high school students who report carrying a weapon in the past 30 days, respectively
Denominator:	Number of MA male high school students and number of MA female high school students, respectively
Exclusions:	MA youth not in high school, MA adults who are not students in high school
Timeframe:	Biannual (odd years)
How will this be measured?	Reduction in prevalence among boys; maintenance or reduction in the prevalence for girls

Inform, Educate, and Empower People About Health Issues
5.8.1 Promote peer education models to develop skills for preventing violence at home, at work and in the community.

Mobilize Community Partnerships to Identify and Solve Health Problems
5.8.2 Support community based youth employment and development programs.
5.8.3 Collaborate across sectors and state agencies to promote evidence-based strategies that promote resilience and reduce risk for young people.
5.8.4 Support positive youth development programming in schools and the community to reduce violence and promote healthy relationships for middle and high school-aged youth.
5.8.5 Assure formal relationships (via MOUs and contracts) between clinical providers and community-based victim services programs to support cross trainings and needed referrals to ensure trauma-informed care.

Develop Policies and Plans That Support Individual and Community Health Efforts
5.8.6 Promote violence prevention strategies that address disparities based on race, economic status, sexual orientation, gender or gender identity.
5.8.7 Increase programs that support employment opportunities for all youth.

Enforce Laws and Regulations That Protect Health and Ensure Safety
5.8.8 Amend existing hospital regulations to require universal education and suicidality and violence screening.

Link People to Needed Personal Health Services and Health Care

5.8.9   Support and promote programming that addresses the highest risk/"proven risk" youth.

5.8.10   Partner with EOHHS Safe and Successful Youth Initiative to provide wrap-around services for high impact youth who are at proven risk for firearm or edge/sharp weapon violence.

5.8.11   Assure smooth continuum of care (track referrals to and from hospitals).

Assure a Competent Public and Personal Healthcare Workforce

5.8.12   Promote trauma-informed service provision among providers working in the youth violence prevention field in MA.

5.8.13   Promote systems of care that are informed about the impact of trauma on physical and behavioral health and support provider training on prevalence and health impact of violent victimization as well as trauma-informed environments, care, screening, and referral practices.

Maintain Administrative Management Capacity

5.8.14   Assess hospital management expertise related to trauma-informed care.

Standard 5E: Reduce health care facility serious reportable events.

Measure 5.9   Reduce the hospital-acquired pressure ulcer prevalence in acute and non-acute care hospitals by 10%.

Outcome Indicator	Baseline	2020 Target	Data Source
Stage +2 hospital acquired pressure ulcers	88	79	*SRE Annual Report: In the general hospitalized population the rate of Stage 2 or greater pressure ulcer is between 2-3%*

Numerator:	Number of reported hospital-acquired Stage III, IV or Unstageable Pressure Ulcers
Denominator:	Number of patient discharges at acute & non-acute hospitals
Exclusions:	None
Timeframe:	Yearly
How will this be measured?	Annual SRE report (Calculation: 20% reduction of 2%; the lower bound of Stage 2+ hospital-acquired pressure ulcers)

Monitor Health to Identify and Solve Community Health Problems

5.9.1   Collect SRE data from all hospital facilities (acute and non-acute).

5.9.2   Track trends of SRE data to determine common themes.

Inform, Educate, and Empower People About Health Issues

5.9.3   Support efforts for education about SRE prevalence, sharing lessons learned, the importance of transparency and collaboration.

Mobilize Community Partnerships to Identify and Solve Health Problems

5.9.4   Sustain and enhance collaborations among MDPH partners (injury prevention, health care facilities licensure and certification, policy and quality, as well as health professions licensure) and non-governmental partners/stakeholders to reduce the prevalence of serious reportable events.

5.9.5   Support coalitions and partnerships to enhance and increase reporting of SREs and building joint efforts to minimize the impact of SREs.

Measure 5.10   **Reduce the prevalence of falls with serious injury or death in acute and non-acute care hospitals by 10%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Falls with serious injury or death	404	361	*Annual SRE Report*

Numerator:	Number of reported falls with serious injury or death while a patient is being cared for in a hospital facility
Denominator:	Number of patient days at acute & non-acute hospitals
Exclusions:	None
Timeframe:	Yearly
How will this be measured?	Annual SRE report Calculation: 30% of 4.15 (mean value of reported prevalence in literature) is 1.4 falls with injury per 1000 patient days)

Monitor Health to Identify and Solve Community Health Problems
5.10.1   Collect SRE data from all hospital facilities (acute and non-acute).
5.10.2   Track trends of SRE data to determine common themes.

Inform, Educate, and Empower People About Health Issues
5.10.3   Support efforts for education about SRE prevalence, sharing lessons learned, the importance of transparency and collaboration.
5.10.4   Educate Quality Improvement Staff at hospitals to identify units where falls are more prevalent and target areas for improvement.

Mobilize Community Partnerships to Identify and Solve Health Problems
5.10.5   Sustain and enhance collaborations among MDPH partners (injury prevention, health care facilities licensure and certification, policy and quality, as well as health professions licensure) and non-governmental partners/stakeholders to reduce the prevalence serious reportable events.

Measure 5.11   **Reduce the prevalence of wrong site or side procedures and surgeries in acute and non-acute care hospitals and ambulatory surgical centers by 10%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Wrong site or side procedures and surgeries	34	31	*2013 Annual SRE report*

Numerator:	Number of reported wrong site and side procedures or surgeries in a hospital or ambulatory surgical center facility
Denominator:	Number of surgeries or procedures at acute & non-acute hospitals, & ambulatory surgical centers
Exclusions:	None
Timeframe:	Yearly
How will this be measured?	Hospital reported occurrences in Health Care Facility Reporting System and CHIA Discharge Casemix Database

Monitor Health to Identify and Solve Community Health Problems
    5.11.1   Work with hospital facilities (acute and non-acute) to encourage reporting of these SREs and awareness that reporting will help provide an understanding of how to target process issues.
    5.11.2   Statewide, review the data to see if some procedures are more often repeated.

Inform, Educate, and Empower People About Health Issues
    5.11.3   Support efforts for education about wrong site and side procedures or surgery prevalence, sharing lessons learned, the importance of transparency and collaboration.
    5.11.4   Work with national organizations that provide education and support to hospitals to decrease wrong site or wrong side procedures or surgeries.

Mobilize Community Partnerships And Action
    5.11.5   Sustain and enhance collaborations among MDPH partners (injury prevention, health care facilities licensure and certification, policy and quality, as well as health professions licensure) and non-governmental partners/stakeholders to reduce the prevalence serious reportable events.
    5.11.6   Support coalitions and partnerships to enhance and increase reporting of wrong site or wrong side procedures or surgeries.
    5.11.7   Build joint efforts to minimize the impact of SREs.

Partners/Resources for Injury, Suicide, and Violence Prevention

- Academic researchers
- After school programs
- American Association of Retired Persons (AARP)
- American Society of Safety Engineers
- Businesses
- Brain Injury Association of Massachusetts (BIA-MA)
- CBOs serving newcomer groups
- Child care centers
- Coaches/sports program directors
- Children's Trust
- Commonwealth Corporation
- Community-based organizations
- Community Health Centers
- Community residents
- Courts
- Dental providers
- Domestic Violence (DV) victim service programs
- Elder service organizations
- Ethnic media outlets
- Faith-based organizations
- First responders
- Healthcare based S/DV programs
- Healthcare facilities
- Healthcare Providers
- Highway safety
- Law enforcement
- MA Adolescent Sex Offender Coalition
- Massachusetts Association for the Treatment of Sexual Abusers
- MA Attorney General
- MA Betsy Lehman Center for Patient Safety and Medical Error Reduction
- MA Certified Batterer Intervention Programs
- MA Disabled Persons Protection Commission
- MA Department of Developmental Services
- MA Department of Early Education and Care
- MA Department of Elementary and Secondary Education
- MA Executive Office of Elder Affairs
- MA Executive Office of Public Safety and Security
- MA Department of Higher Education
- MA Department of Labor Standards
- MA Department of Mental Health
- MA Coalition for Occupational Safety and Health
- MA Hospital Association
- Nursing homes
- OSHA
- Pharmacies
- Policy makers
- Rape crisis centers
- Red Cross
- Samaritans
- Schools
- State sexual and domestic violence coalition (Jane Doe Inc.)
- Trade Associations
- Unions
- Universities
- US Department of Labor

- Worker Centers
- Workers' compensation insurers
- Workforce Investment Boards, workforce development programs
- YMCAs and YWCAs
- Youth centers/service agencies

Other Plans That are Incorporated Directly or by Reference in Injury, Suicide, and Violence Prevention

- MA Teen Dating Violence Prevention/Healthy Relationship Promotion Plan
- MA Sexual Violence Prevention Plan
- MA Suicide Prevention Strategic Plan
- MA Injury Prevention Strategic Plan
- Disparities in Prevalence, Access to Services and Outcomes for Sexual and Domestic Violence Survivors From Five Underserved Populations (Gay, Lesbian, Bi-Sexual, Transgender (GLBT), Immigrant, People Living with Disabilities, Rural, Elder): Report of the Services Accessibility Working Group to the MA Governor's Council to Address Sexual and Domestic Violence

Domain 6: Maternal, Child, and Family Health Promotion

Ensure the health and well-being of women, children and families.

Why This Domain Is Important for Massachusetts:

Burden (Where We Are): The Massachusetts teen birth rate has decreased by 52% since 1990, reaching 14.0 births per 1,000 females aged 15-19 years in 2012, the lowest rate ever recorded in Massachusetts. Although the overall teen birth rate is declining and has been consistently below the national rate, significant racial and ethnic disparities persist. In 2012, Hispanic and Black women had the highest teen birth rates.

Based on the Centers for Disease Control and Prevention's 2013 Breastfeeding Report Card, Massachusetts surpassed the nation in all breastfeeding measures and exceeded Healthy People 2020 goals for ever breastfeeding, breastfeeding at six months, and exclusive breastfeeding at three months.

According to data from the 2009/2010 National Survey of Children with Special Health Care Needs, approximately 18% of Massachusetts children (ages 0-17) have special health care needs. Of these, 47.1% met all medical home criteria, compared to 43% for the nation as a whole.

Result (How This Affects Us): Teen birth is an important public health issue, associated with long-term negative outcomes for both mother and child. Teens and young women with developmental and other disabilities can be especially vulnerable to exploitation, and proper supports are needed for this population.

Infants who survive a preterm birth are at increased risk of lifetime health challenges, such as breathing problems, developmental delay,, and other issues. Low Birth Weight (LBW) infants are at increased risk of medical problems and death compared with infants of normal weight and are at higher risk of delayed development and poor school achievement later in life.

Breastfeeding has health benefits for both mother and infant. Improved breastfeeding initiation and duration rates are critical health outcomes.

Low family income and living in poverty are associated with developmental delays, lower academic performance, and poor health outcomes in infants and young children. Children who experienced adverse events during early childhood may struggle academically indicating the impact of early childhood toxic stress on the skills children need to succeed in school.

Action (What We Can Do): Comprehensive sexual health education for both males and females is critical for understanding reproductive health and making appropriate family planning decisions. Providing education and strategies to encourage women to receive preconception and oral health care; to seek prenatal care as early in pregnancy as possible; to avoid smoking, alcohol and illicit drug use; and to control diseases such as high blood pressure and diabetes can mitigate the risk of adverse birth outcomes, including low birth weight and premature births.

Supporting maternity facilities to adopt practices that promote and support breastfeeding can increase the likelihood that mothers and infants planning to breastfeed get a solid foundation in the critical early days of life. While MDPH and other state agencies provide a range of services for families and for children, very few services focus on two-generational approaches to ensure that families or other caring adults can help buffer the impact of family and community stress on the developing child. MDPH and its partners are working to build state and community capacity to identify and serve children from birth to age five years who are at risk for toxic stress, support two-generational approaches across service sectors, promote the medical home approach to care, and enhance the skills and competencies of the workforce. The medical home model is an approach to care that promotes prevention and wellness and provides management of acute and chronic health conditions.

Standard 6A: Reduce teen births in communities with the highest rates.

Measure 6.1:   Reduce the teen birth rate in the highest need communities by 10%.

Outcome Indicator	Baseline	2020 Target	Data Source
MA Women 15-19	14.0 births per 1,000 women 15-19	12.6 births per 1,000 women 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
Holyoke, MA Women 15-19	57.1 births per 1,000 women 15-19	51.4 births per 1,000 women 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
Springfield, MA Women 15-19	46.7 births per 1,000 women 15-19	42.0 births per 1,000 women 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
Lawrence, MA Women 15-19	51.3 births per 1,000 women 15-19	46.2 births per 1,000 women 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
New Bedford, MA Women 15-19	42.5 births per 1,000 women 15-19	38.3 births per 1,000 women 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
Worcester, MA Women 15-19	24.1 births per 1,000 women 15-19	21.7 births per 1,000 women 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*

Numerator:	Number of births to females ages 15-19
Denominator:	Number of females ages 15-19 in the population
Exclusions:	Births without the mother's age recorded
Timeframe:	Annual
How will this be measured?	Registry of Vital Records and Statistics (RVRS)

Numerator:	Number of births to females ages 15-19 Holyoke
Denominator:	Number of females ages 15-19 in the population
Exclusions:	Births without the mother's age recorded
Timeframe:	Annual
How will this be measured?	RVRS

Numerator:	Number of births to females ages 15-19 in Springfield
Denominator:	Number of females ages 15-19 in the population
Exclusions:	Births without the mother's age recorded
Timeframe:	Annual
How will this be measured?	RVRS

Numerator:	Number of births to females ages 15-19 in Lawrence
Denominator:	Number of females ages 15-19 in the population
Exclusions:	Births without the mother's age recorded
Timeframe:	Annual
How will this be measured?	RVRS

Numerator:	Number of births to females ages 15-19 in New Bedford
Denominator:	Number of females ages 15-19 in the population
Exclusions:	Births without the mother's age recorded
Timeframe:	Annual
How will this be measured?	RVRS

Numerator:	Number of births to females ages 15-19 in Worcester
Denominator:	Number of females ages 15-19 in the population
Exclusions:	Births without the mother's age recorded
Timeframe:	Annual
How will this be measured?	RVRS

Monitor Health to Identify and Solve Community Health Problems
6.1.1   Prepare and disseminate Teen Birth Packets to communities with highest rates to promote community awareness and action.

Inform, Educate, and Empower People About Health Issues
6.1.2   Provide comprehensive, culturally appropriate family planning services and education for adolescents and young adults.
6.1.3   Develop tools for proactive life planning and risk management.
6.1.4   Provide education in schools to encourage wellness, healthy relationships and optimal reproductive health that is responsive to all genders and sexual orientations.
6.1.5   Develop educational/outreach programming that addresses the issues of consent and coercion.
6.1.6   Ensure that strategies for youth with disabilities are included in all educational efforts.

Mobilize Community Partnerships to Identify and Solve Health Problems
6.1.7   Prepare and disseminate Teen Birth Packets to communities with highest rates to promote community awareness and action.

Develop Policies and Plans That Support Individual and Community Health Efforts
6.1.8   Promote sustainability for evidence-based teen pregnancy prevention programs in targeted communities.
6.1.9   Focus program efforts on high-risk population groups and communities.

Link People to Needed Personal Health Services and Health Care
6.1.10   Support and expand school based health clinics.

Research for New Insights and Innovative Solutions to Health Problems
6.1.11   Promote sustainability for evidence-based teen pregnancy prevention programs in targeted communities.

Standard 6B: Improve maternal health and infant outcomes.

Measure 6.2: **Reduce the relative percentage of infants with low birth weight births by 5% and premature births by 5%.**

Outcome Indicator	Baseline	2020 Target	Data Source
Percentage of infants born weighing less than 2,500 grams	7.6% of births are LBW	7.2%	*MDPH Vital Statistics. Data for 2012*
Percentage of infants born prematurely	8.6% of births	8.2%	*MDPH Vital Statistics. Data for 2012*
Percentage of infants born to Black, non-Hispanic women that are less than 2,500 grams	10.2 % of births are LBW	9.7%	*MDPH Vital Statistics. Data for 2012*

Numerator:	Number of all live births that are less than 2,500 grams (LBW) in a calendar year
Denominator:	Number of all live births in that year
Exclusions:	Births without a birthweight recorded
Timeframe:	Annual
How will this be measured?	RVRS

Numerator:	Number of all live births that occur at less than 37 weeks gestation in a calendar year
Denominator:	Number of all live births in that year
Exclusions:	Births without gestational age recorded
Timeframe:	Annual
How will this be measured?	RVRS

Numerator:	Number of all live births to Black non-Hispanic women that are less than 2,500 grams (LBW) in a calendar year
Denominator:	Number of all live births to Black non-Hispanic women in that year
Exclusions:	Births without a birthweight or mother's race recorded
Timeframe:	Annual
How will this be measured?	RVRS

Monitor Health to Identify and Solve Community Health Problems
   6.2.1   Prepare and disseminate Birth Data Packets and other reports.

Diagnose and Investigate Health Problems and Hazards in the Community
   6.2.2   Participate in National Infant Mortality Collaborative for Improvement and Innovation Network (CoIIN) and take a lead in Massachusetts to assess infant mortality and to inform the development of effective infant mortality reduction strategies.

Inform, Educate, and Empower People About Health Issues
6.2.3   Support social media and other efforts to increase awareness of preterm birth outcomes, including *text4baby.*

6.2.4   Provide education on primary and secondary strategies for preconception and interconception health including: folic acid supplements; minimize elective inductions or deliveries prior to 39 weeks in singletons; progesterone for those with a previous preterm birth (PTB); no smoking, alcohol or illicit drug use during pregnancy; and disease prevention and treatment.

Mobilize Community Partnerships to Identify and Solve Health Problems
6.2.5   Strengthen and expand public/private collaborative through leading the Massachusetts CoIIN, and supporting evidence-based intervention initiatives (e.g., Massachusetts Perinatal Quality Collaborative (MPQC), Neonatal Quality Improvement Collaboration (neoQIC).

Develop Policies and Plans That Support Individual and Community Health Efforts
6.2.6   Establish health care systems and clinical protocols to reduce pre-term and low birth weight births.

6.2.7   Support efforts to reduce non-medically indicated deliveries prior to 39 weeks gestation.

6.2.8   Through CoIIN establish quality improvement, innovation and collaborative learning to address infant mortality.

Enforce Laws and Regulations That Protect Health and Ensure Safety
6.2.9   Convene Perinatal Advisory Committee as part of the perinatal regulations to review standards of care in Massachusetts birth hospitals and survey birth hospitals to ensure compliance with regulations.

Link People to Needed Personal Health Services and Health Care
6.2.10   Promote behavioral and community interventions, including the use of community health workers and doulas, to reduce smoking and other substance use during pregnancy, prevent violence against pregnant women, and address other social stressors linked to increased risk of preterm delivery.

Assure a Competent Public and Personal Healthcare Workforce
6.2.11   Increase the use of Community Health Workers and paraprofessional home visitors in prenatal care.

Evaluate Effectiveness, Accessibility, and Quality of Health Services
6.2.12   Strengthen and expand public/private collaborative, evidence-based intervention initiatives (e.g., Massachusetts Perinatal Quality Collaborative (MPQC), Neonatal Quality Improvement Collaboration (neoQIC).

Research for New Insights and Innovative Solutions to Health Problems
6.2.13   Through CoIIN collaborate with multiple states to identify effective infant mortality reduction strategies.

Engagement with Governing Entities
6.2.14   Through CoIIN engage with state and community stakeholders to develop and implement strategic plan to reduce infant mortality and identify opportunities to leverage existing state and federal resources.

Measure 6.3: **Increase the proportion of infants who are breastfed to meet multiple specified targets.**

Outcome Indicator	Baseline	2020 Target	Data Source
Breastfed at 8 weeks	63.7%	>63.7%	*MA PRAMS Surveillance Report 2013. Data for 2009/2010*
Exclusive breastfeeding at hospital discharge	60.3%	66.3%	*MDPH Vital Statistics. Data for 2012*
Number of Baby-Friendly Hospitals	6 (of 47)	13 (of 47)	*Baby-Friendly USA data*

Numerator:	Number of women with a recent live birth who were breastfeeding their infant at 8 weeks of age
Denominator:	Total number of women with a recent live birth
Exclusions:	Multiple births greater than 3, births to non-resident mothers, births to MA resident outside of MA
Timeframe:	Biannual
How will this be measured?	Women who responded: (1) "yes" to initiating breastfeeding and (2) "yes" to currently breastfeeding or "no" to currently breastfeeding, but breastfed at least 8 weeks will be included in the numerator

Numerator:	Number of births among women who responded feeding their baby with breast milk only at the time of discharge
Denominator:	Total number of live births in that year
Exclusions:	Births with missing information on exclusive breastfeeding
Timeframe:	Annual
How will this be measured?	RVRS.

Numerator:	Number of birth hospitals with Baby-Friendly designation
Denominator:	Number of birth hospitals in Massachusetts
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Review of Baby-Friendly data

Monitor Health to Identify and Solve Community Health Problems
6.3.1   Establish data sources and baseline data to measure exclusive breastfeeding at discharge and other metrics.

Inform, Educate, and Empower People About Health Issues
6.3.2   Educate employers and new mothers about federal (ACA) requirements, including new coverage options for breastfeeding support after delivery, and availability of providers to support breastfeeding mothers in the workplace.
6.3.3   Develop a marketing campaign on the benefits of breastfeeding and available supports. Connect to celebrity endorsement, social media and other efforts to increase awareness of the importance of breastfeeding, including *text4baby.*
6.3.4   Provide education and support to pregnant women and new mothers on the benefits of breastfeeding, breastfeeding management, and obtaining support to continue breastfeeding, in school health classes, and family support service settings.

Mobilize Community Partnerships to Identify and Solve Health Problems
- 6.3.5   Collaborate with Massachusetts Breastfeeding Coalition (MBC) to enhance collaboration with Massachusetts birth hospitals to support hospital policies that promote breastfeeding.

Develop Policies and Plans That Support Individual and Community Health Efforts
- 6.3.6   Promote CDC Guide to Strategies to Support Breastfeeding Mothers and Babies (2013).
- 6.3.7   Encourage expansion of workplace provisions to all employees regarding support for breastfeeding mothers in the workplace.
- 6.3.8   Promote and support breastfeeding-friendly practices, such as on-site breastfeeding, in child care settings and in the workplace.
- 6.3.9   Increase the number of Baby-Friendly Hospitals by supporting hospitals in adopting Baby Friendly Hospital Initiative practices/achieving BFHI designation.
- 6.3.10   Define and provide incentives to new mothers who breastfeed.
- 6.3.11   Explore ways to incentivize providers to promote higher breastfeeding duration/exclusivity for new mothers.
- 6.3.12   Support parents of infants with complex health needs to breastfeed.

Link People to Needed Personal Health Services and Health Care
- 6.3.13   Improve community and pediatric provider post-discharge support for breastfeeding women and infants.

Assure a Competent Public and Personal Healthcare Workforce
- 6.3.14   Provide breastfeeding promotion and support education and training to all WIC staff and home visitors.
- 6.3.15   Offer 3-hour free CMEs related to breastfeeding management.

Measure 6.4:   Increase the proportion of pregnant women who receive teeth cleaning before and during pregnancy by 5%.

Outcome Indicator	Baseline	2020 Target	Data Source
Women who received teeth cleaning in the 12 months prior to pregnancy	68.7%	72.1%	*MA PRAMS Surveillance Report 2013 (Data for 2009/2010)*
Women who received teeth cleaning during pregnancy	50.6%	53.1%	*MA PRAMS Surveillance Report 2013 (Data for 2009/2010)*

Numerator:	Number of women with a recent live birth who responded "yes" to receiving teeth cleaning in the 12 months prior to pregnancy
Denominator:	Total number of women with a recent live birth
Exclusions:	Multiple births greater than 3, births to non-resident mothers, births to MA resident outside of MA
Timeframe:	New data every two years
How will this be measured?	Review of PRAMS survey data

Numerator:	Number of women with a recent live birth who responded "yes" to receiving teeth cleaning during pregnancy
Denominator:	Total number of women with a recent live birth
Exclusions:	Multiple births greater than 3, births to non-resident mothers, births to MA resident outside of MA
Timeframe:	New data every two years
How will this be measured?	Review of PRAMS survey data

Monitor Health to Identify and Solve Community Health Problems
6.4.1 Use PRAMS data to monitor the proportion of postpartum women who received teeth cleanings before and/or during pregnancy.

Diagnose and Investigate Health Problems and Hazards in the Community
6.4.2 Review claims data for evidence of non-utilizers of oral health prevention services.

Inform, Educate, and Empower People About Health Issues
6.4.3 Provide SEAL programs in schools and meet with nurse leaders to promote program regarding dental caries and prevention.

Mobilize Community Partnerships to Identify and Solve Health Problems
6.4.4 Work with community health centers to promote referral to oral health and linkage of medical and dental treatment.

Develop Policies and Plans That Support Individual and Community Health Efforts
6.4.5 Develop evidence-based oral health guidelines for prenatal, pediatric, and dental providers.
6.4.6 Implement Perinatal Care Recommendations issued by the Massachusetts Health Quality Partners (MHQP) which include oral health assessment and or referral in the first 6-12 weeks of pregnancy.
6.4.7 Integrate oral health into primary care practice.
6.4.8 Establish provider performance incentives for adequate oral health screenings and referrals.

Link People to Needed Personal Health Services and Health Care
6.4.9 Support access to and coverage for dental services among the Medicaid population.

Assure a Competent Public and Personal Healthcare Workforce
6.4.10 Promote and integrate oral health curriculums into medical schools and OB residency programs.
6.4.11 Use loan repayment and training incentives to improve access to oral health providers.

Standard 6C: **Ensure positive early childhood health and development.**

Measure 6.5: **Increase the relative percentage of children and adolescents who have a medical home by 10%, especially children and youth with special health care needs.**

Outcome Indicator	Baseline	2020 Target	Data Source
Children & youth aged 0 – 17	62.7%	69.0%	*National Survey of Children's Health (NSCH) / 2011/2012*
Children & youth with special health care needs	49.2%	54.1%	*National Survey of Children's Health (NSCH).(2011/12)*

Numerator:	Children whose health care meets medical home criteria.
Denominator:	Children aged 0-17 years
Exclusions:	Unknown values (responses coded as 'refused', 'don't know', or system missing)
Timeframe:	Likely bi-annual - Dependent on federal decisions about survey administration
How will this be measured?	The American Academy of Pediatrics' (AAP) description of a "medical home" lists seven defining components: accessible, continuous, comprehensive, family-centered, coordinated, compassionate and culturally effective. Ideally, these seven components are delivered by a doctor or other health professional who knows the child well. Presence of a medical home is measured in NSCH by a composite based on five component variables constructed from a total of 19 survey items. These component indicators are: personal doctor or nurse; usual source for sick and well care; family-centered care; problems getting needed referrals; effective Care Coordination when needed. To qualify as having a medical home children must meet the criteria for adequate care on the first three components: personal doctor or nurse, usual source for care, and family-centered care. Any children who needed referrals or care coordination must also meet criteria for those components in order to qualify as having a medical home.

Numerator:	CYSHN whose health care meets medical home criteria
Denominator:	Children and youth with special health needs aged 0-17 years
Exclusions:	Unknown values (responses coded as 'refused', 'don't know', or system missing)
Timeframe:	Likely bi-annual - Dependent on federal decisions about survey administration
How will this be measured?	The American Academy of Pediatrics' (AAP) description of a "medical home" lists seven defining components: accessible, continuous, comprehensive, family-centered, coordinated, compassionate and culturally effective. Ideally, these seven components are delivered by a doctor or other health professional who knows the child well. Presence of a medical home is measured in NSCH by a composite based on five component variables constructed from a total of 19 survey items. These component indicators are: personal doctor or nurse; usual source for sick and well care; family-centered care; problems getting needed referrals; effective Care Coordination when needed. To qualify as having a medical home children must meet the criteria for adequate care on the first three components: personal doctor or nurse, usual source for care, and family-centered care. Any children who needed referrals or care coordination must also meet criteria for those components in order to qualify as having a medical home. To obtain estimate for CYSHN, results were stratified by 'special health care needs status.'

Monitor Health to Identify and Solve Community Health Problems
6.5.1   Assess linkage to medical homes among participants in family support programs (Massachusetts Home Visiting Initiative (MHVI), EIPP, etc.) and facilitate connections to medical homes as needed.

Inform, Educate, and Empower People About Health Issues
6.5.2   Utilize existing relationships with CBOs to raise awareness and share information about the value of the medical home approach to care.

Develop Policies and Plans That Support Individual and Community Health Efforts
6.5.3   Develop comprehensive data sources and protocols to measure linkage to medical homes.
6.5.4   Promote the medical home as the best setting in which to provide continuous, high quality preventive health care, including for children and youth with special health care needs.

Link People to Needed Personal Health Services and Health Care
6.5.5   Support community health centers in their efforts to build medical homes.
6.5.6   Assess linkage to medical homes among participants in family support programs (Massachusetts Home Visiting Initiative (MHVI), EIPP, etc.) and facilitate connections to medical homes as needed.

Assure a Competent Public and Personal Healthcare Workforce
6.5.7   Increase access and retention rates in identified target areas for primary health care providers (including medical, dental, and mental health) using the Health Professions Data Series (HPDS) (including health workforce distribution, roles, settings, language ability, and future plans) to identify communities with barriers.
6.5.8   Work in collaboration with the Massachusetts Chapter of the AAP to develop training and support for providers to enhance understanding and delivery of medical home approach to care.

Measure 6.6: **Develop consensus definitions and comprehensive data sources to identify and measure positive early childhood health and development.**

Outcome Indicator	Baseline	2020 Target	Data Source
Robust measure or measures	NO	YES	*To be Identified and / or developed*

Numerator:	NA
Denominator:	NA
Exclusions:	NA
Timeframe:	NA
How will this be measured?	Documentation of consensus definitions, data sources, baseline values, and 2020 targets

Monitor Health to Identify and Solve Community Health Problems
6.6.1 Develop consensus definitions and comprehensive data sources to identify and measure early childhood development.
6.6.2 Continue to support MassHealth and eventually private insurers in assuring behavioral health screening in all well child visits using valid tools.

Inform, Educate, and Empower People About Health Issues
6.6.3 Incorporate essentials for childhood and sexual assault prevention and survivor services (SAPSS) into work with child care and fatherhood programs.

Mobilize Community Partnerships to Identify and Solve Health Problems
6.6.4 Strengthen programs and collaborations that provide structure and enhance communication between pediatric primary care providers, families and early childhood educators.
6.6.5 Partner with key stakeholders to enhance and sustain the role of "Child Care Health Consultant" as a way to provide early child care educators with health and safety education, connection to vital pediatric health resources and advocacy to continue providing a safe and healthy environment for children with special health needs in particular and all children in general.

Develop Policies and Plans That Support Individual and Community Health Efforts
6.6.6 Develop strategic plans that address home visiting, child care, assessment, referral, adverse childhood experiences, toxic environmental factors, parent education, role of fathers, and resiliency.
6.6.7 Support programs with targeted interventions for at risk families experiencing challenges to providing safe, stable, nurturing relationships such as families with an infant with high and/or complex needs, impacted by Substance Use Disorders (SUDs), cognitively challenged or mentally ill, and/or experiencing domestic violence.
6.6.8 Support programs that encourage positive father engagement with parenting.
6.6.9 Determine funding strategies to sustain key activities funded by the Race To The Top Early Learning Challenge Grant Interagency Service Agreement between MDPH and the Department of Early Education and Care (EEC) (including technical assistance on health, mental health and safety policy and quality improvement; support on medication administration and nutrition and physical activity in early education and care).

Enforce Laws and Regulations That Protect Health and Ensure Safety
6.6.10 Continue to provide technical assistance to the Department of Early Education and Care in its licensing regulations development and enforcement.

Link People to Needed Personal Health Services and Health Care
6.6.11 Continue to work with EEC and others to replicate the Help Me Grow model of referral linkages between primary care pediatrics, Mass211 and families.

6.6.12   Continue to support MassHealth and eventually private insurers in assuring behavioral health screening in all well child visits using valid tools.

Assure a Competent Public and Personal Healthcare Workforce
6.6.13   Identify and address early childhood work force standards, training needs and capacity.

Research for New Insights and Innovative Solutions to Health Problems
6.6.14   Promote and support research that evaluates and establishes the effectiveness of various approaches and interventions for comprehensive positive early development.

Engagement with Governing Entities
6.6.15   Continue to work with partner state agencies on developing an intersecretariat Early Childhood System of Care.

Partners/Resources for Maternal, Child, and Family Health Promotion
- Academic institutions
- The Association of Women's Health, Obstetric and Neonatal Nurses
- Better Oral Health for MA Coalition (BOHMAC)
- Boston Association for Childbirth Education
- Boston Public Health Commission
- Community based organizations and cultural organizations
- Child care and early education providers
- Community Health Centers
- Early Intervention programs
- Family Planning Providers and Clinics
- Foundations Head Start & early childhood education
- Health and early childhood workforce educational programs
- Healthcare Providers
- Healthy Start Coalition
- Local Home-visiting programs
- Local WIC programs
- Massachusetts Alliance on Teen Pregnancy Prevention
- MA Family Planning Association
- MA Perinatal Quality Collaborative
- March of Dimes
- MA Behavioral Health Partnership
- MA Chapter of the AAP
- MA Child Psychiatric Access Project
- MA Children's Behavioral Health Initiative
- MA Children's Trust Fund
- MA Dental Schools
- MA Department of Children and Families
- MA Department of Early Education and Care
- MA Department of Elementary and Secondary Education
- MA Department of Housing and Community Development
- MA Department of Mental Health
- MA Department of Transitional Assistance
- MA Hospital Association / Hospitals
- MassHealth
- Mass Medical Society
- MA Breastfeeding Coalition
- MA Dental Society
- MassHealth
- Neonatal Quality Improvement Collaborative
- Northeastern University – BBUSOM program
- Northeastern University – Gabby System
- Nurse Midwives
- Pharmacies
- Post-Partum Depression Commission
- Private Health Insurers
- School Health Services/School Nurses
- School-Based Health Centers
- Schools
- Strategies for Children
- Teen Pregnancy Prevention Community based providers
- United Way
- Women's & Men's Service Organizations and support groups
- Youth Serving Organizations

Domain 7: Environmental Risk Factors and Health

Prevent and reduce environmental risk factors (or hazards) in home, school, work and community environments to achieve optimal health and wellbeing.

Why This Domain Is Important for Massachusetts:

Burden (Where We Are): Massachusetts residents have long been concerned about potential health effects from multi-media environmental exposures. Today, the MDPH's Bureau of Environmental Health has jurisdiction for about 40 percent of the Department's statutory and regulatory responsibilities, including food safety, enforcement of the Massachusetts Lead Law, minimum standards for housing, the control of radioactive materials, and a range of recreational activities associated with pools, camps, beaches, and more. The Department's Bureau of Community Health and Prevention also tracks some occupational health outcomes. Massachusetts ranks second nationwide for old housing stock, a major source of childhood lead poisoning. In calendar year 2013, nearly 7,000 Massachusetts children had blood lead levels above the Centers for Disease Control and Prevention's reference value of 5 µg/dL. Adults are also at risk of lead exposure, predominantly at work. In addition, asthma among Massachusetts residents is among the highest in the country, with about 1 in 10 Massachusetts children having a diagnosis of asthma. Certain cancer types are higher in Massachusetts than nationally (e.g., breast cancer among women; bladder cancer among men). Climate change effects, such as increasing air and water temperatures, are resulting in greater numbers of foodborne illness outbreaks, including due to the *Vibrio parahaemolyticus* bacteria. Climate effects are also resulting in more extreme weather events, causing mold/moisture issues in residences and buildings due to flooding, and increased ambient air quality issues, affecting respiratory and cardiovascular outcomes.

Result (How This Affects Us): Elevated blood lead levels among children can result in permanent neurodevelopmental effects. Lead can also impact the health of adults occupationally exposed. Poor indoor or outdoor air quality can result in exacerbation of respiratory outcomes, such as asthma, and other effects. Changing climate conditions will most strongly be felt on the local level, where more training and planning for adaptation strategies will be required, particularly in addressing issues related to populations and communities most at risk. Foodborne illness outbreaks can result in hospitalizations or even death, as well as have a severe effect on the local food establishment industry. Tracking of diseases potentially related to environmental exposures becomes even more critical to identify potential causes to eliminate or mitigate them.

Action (What We Can Do): Whether it is enforcing regulations, evaluating contamination in our environment, or conducting community health assessments, preventing or mitigating environmental exposures is an important component of maintaining and improving the public's health. Increasing the capacity of local health departments to enforce local health regulations pertaining to food safety and housing, and increasing their awareness and resources to address climate change are critical strategies. Local community partners can play an important role in reducing child lead exposure, and improving indoor air quality, housing conditions, food safety, and vector-borne illness due to climate change.

Standard 7A:	Reduce exposure to lead in children and adults to prevent deleterious health impacts.

Measure 7.1:	Increase blood level screening rates in high-risk communities (as defined by low socioeconomic status, percent of old housing stock, and other factors) by 10% (relative).

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Outcome Indicator	Baseline	2020 Target	Data Source
Children 9-48 months	80%	88%	*Childhood Lead Poisoning Prevention database (2013)*

Numerator:	Number of children 9-48 months of age screened for lead in Massachusetts high-risk communities
Denominator:	Population of children 9-48 months of age in Massachusetts high-risk communities
Exclusions:	Children under 9 months and over 48 months of age
Timeframe:	Annual
How will this be measured?	Track 5-year average annual screening rate (2015-2020)

Inform, Educate, and Empower People About Health Issues
7.1.1   Use existing coalitions and collaborations to develop programs to target all children under six years of age.
- Use blood lead poisoning surveillance data to identify the highest risk populations in urban areas, such as minority populations in larger cities, in schools, and in out-of-school time programs to promote environmental justice.

Mobilize Community Partnerships to Identify and Solve Health Problems
7.1.2   Reach out to Head Start program and others using new CDC guidance on reference values to convey renewed interest in education and screening.
7.1.3   Explore partnerships (e.g., Healthy Homes, Fair Housing, Get the Lead Out) to expand the number of properties inspected and revise the protocols to include integration of lead and asthma.

Develop Policies and Plans That Support Individual and Community Health Efforts
7.1.4   Revise MDPH regulations to address blood lead poisoning reference values in alignment with CDC recommendations.

Link People to Needed Personal Health Services and Health Care
7.1.5   Work with clinicians or other health care providers to improve screening and provide culturally appropriate education about lead hazards to children, notably in high risk communities.

Assure a Competent Public and Personal Healthcare Workforce
7.1.6   Work with clinicians or other health care providers to improve screening and education about lead hazards to children, notably in high risk communities.

Engagement with Governing Entities
7.1.7   Work with the Department of Labor Standards to ensure renovation work on all older building stock is conducted in a lead-safe fashion consistent with the Renovation, Repair and Painting (RRP) Rule through education of contractors, property owners, and tenants and through regulatory enforcement/permit process.

Measure: 7.2: **Reduce the prevalence rate of blood lead levels of > 25 μg/dL in persons 16 years or older by 5% (relative). (Consistent with HP 2020 objective OSH-7)**

Outcome Indicator	Baseline	2020 Target	Data Source
Persons 16 + with blood lead levels of > 25 ug/dL	6.1/100,000 employed persons	5.8/100,000 employed persons	*Numerator Source: Massachusetts Occupational Lead Poisoning Registry Denominator Source: BLS Current Population Survey*

Numerator:	Number of state residents age 16 years or older with a reported blood lead level of > 25 μg/dL
Denominator:	Employed MA population age 16 years of older for the same calendar year
Exclusions:	None
Timeframe:	Annual
How will this be measured?	Massachusetts Occupational Health Indicator report produced including annual count and prevalence rate of elevated blood lead levels in adults, including 5 year time trend.

Monitor Health to Identify and Solve Community Health Problems
  7.2.1   Determine the feasibility of implementing secure standardized electronic reporting of elevated blood lead levels in adults by laboratories.

Inform, Educate, and Empower People About Health Issues
  7.2.2   Provide technical assistance to employers to reduce lead exposures in high risk industries including bridge painting and house painting.

Mobilize Community Partnerships to Identify and Solve Health Problems
  7.2.3   Work with community advocates to conduct outreach to targeted minority worker groups, such as Hispanic and Brazilian house painters, who are at high risk of occupational lead poisoning.

Develop Policies and Plans That Support Individual and Community Health Efforts
  7.2.4   Expand mandatory reporting of blood lead levels in adults to include all blood lead test results.

Enforce Laws and Regulations That Protect Health and Ensure Safety
  7.2.5   Continue interagency collaboration to promote compliance with the lead poisoning prevention laws and regulations.

Assure a Competent Public and Personal Healthcare Workforce
  7.2.6   Conduct outreach to healthcare providers to promote lead screening for house painters.

Standard 7B: Improve indoor environmental quality in homes and public buildings to reduce respiratory symptoms and diseases.

Measure 7.3:   Implement steps to improve indoor environmental quality by providing Division of Capital Asset Management and Maintenance (DCAMM) pre-occupancy assessments within an average of two weeks of inspection.

Outcome Indicator	Baseline	2020 Target	Data Source
Average time between assessment and inspection	27 days (CY 2013)	5-year average time of 14 days	*BEH IAQ database*

Numerator:	Number of days between pre-occupancy assessment and inspection
Denominator:	Number of inspections
Exclusions:	N/A
Timeframe:	Annual measurement of average time
How will this be measured?	Show 5-year average annual time between assessment and inspections is 14 days or less.

Inform, Educate, and Empower People About Health Issues
7.3.1   Increase education about the benefits of implementing Integrated Pest Management (IPM) practices and appropriate use of IPM in buildings that the public may enter.
7.3.2   Educate staff in buildings that the public may enter on MDPH guidance for optimal indoor air quality.
7.3.3   Provide training and certification for public maintenance workers and building maintenance managers on indoor environmental conditions that can adversely impact health.

Develop Policies and Plans That Support Individual and Community Health Efforts
7.3.4   Reduce use of products in the indoor environment that may release volatile organic compounds into the indoor air.

Maintain Administrative Management Capacity
7.3.5   Collaborate with others to address indoor environmental conditions that can adversely impact health.

Engagement with Governing Entities
7.3.6   Increase education and training on the importance of basic maintenance of all components of building heating, ventilation, and air conditioning (HVAC) systems.
7.3.7   Collaborate with others to address indoor environmental conditions that can adversely impact health.
7.3.8   Collaborate with other agencies to promote use of less toxic cleaning products.

Measure 7.4: **Reduce the number of avoidable complaints of poor housing conditions by increasing the number of local inspectors trained by 10% per year.**

Outcome Indicator	Baseline	2020 Target	Data Source
Trained inspectors	30	45	*Local Public Health Institute of Massachusetts (average number trained 2011-2013)*

Numerator:	Number of local inspectors trained at Local Public Health Institute who received Public Health Inspector Training Housing Certificate Program (PHIT HCP) certificate
Denominator:	Total number of local health inspectors trained
Exclusions:	N/A
Timeframe:	Annual
How will this be measured?	Track the average number of local inspectors trained annually over 2015-2020

Inform, Educate, and Empower People About Health Issues

7.4.1 Develop informational materials for the public on indoor environmental health risks.

7.4.2 Expand training opportunities to increase the number of local health officials who can conduct inspections.

7.4.3 Establish a collaborative learning/mentoring model of best practices within the rest home industry in order to try to improve performance.

Mobilize Community Partnerships to Identify and Solve Health Problems

7.4.4 Convene stakeholders to address rest home housing conditions.

Develop Policies and Plans That Support Individual and Community Health Efforts

7.4.5 Revise housing regulations to provide clear and uniform direction to local housing inspectors.

7.4.6 Conduct annual rest home licensure surveys, noting and trending the nature of deficiencies routinely documented by the Bureau of Health Care Safety and Quality, to develop continuous quality improvement among the industry.

Enforce Laws and Regulations That Protect Health and Ensure Safety

7.4.7 Revise housing regulations to provide clear and uniform direction to local housing inspectors.

Assure a Competent Public and Personal Healthcare Workforce

7.4.8 Strengthen the capacity of local health through trainings and outreach, to encourage local adoption of pre-occupancy housing inspections to establish baseline conditions.

Maintain Administrative Management Capacity

7.4.9 Enhance capacity of facility managers in schools, day care centers, and other public buildings to conduct indoor environmental assessments.

7.4.10 Work with multiple state agencies to identify long-term funding sources for rest home facilities and work with stakeholders to identify solutions to limited bed availability.

Standard 7C: Reduce foodborne illness.

Measure 7.5: **Reduce the number of foodborne illness outbreaks by increasing the number of mandatory local health inspections of retail food establishments.**

Outcome Indicator	Baseline	2020 Target	Data Source
Local health authorities completing two inspections per food establishment annually according to federal performance standard	41.0%	45.1%	*Annual report to the legislator on status of local health inspections of food establishments(2012)*

Numerator:	Number of local health authorities reporting at least 2 inspections per permit per year
Denominator:	Number of local health authorities statewide
Exclusions:	N/A
Timeframe:	Annual
How will this be measured?	2020 Annual report to the legislature documents statewide percentage that meets or exceeds target

Inform, Educate, and Empower People About Health Issues
   7.5.1   Provide culturally appropriate education to consumers on food safety practices for home and work environments and how to report suspected foodborne illnesses.
   7.5.2   Provide education on importance of evaluating and reporting suspected foodborne illness by consumers and health care providers to enhance surveillance and effective abatement of real and potential outbreak situations.
   7.5.3   Work with local health officials and industry to ensure appropriate training of food service employees.
   7.5.4   Promote engagement of food service establishments (FSE), food service workers and managers in food safety education programs and application of food safety principles in practice.
   7.5.5   Provide culturally and linguistically appropriate education on food safety for ethnic consumer groups and ethnic food service establishments.

Mobilize Community Partnerships to Identify and Solve Health Problems
   7.5.6   Cultivate relationships between business owners and regulators to enhance reporting of suspected foodborne illness.

Develop Policies and Plans That Support Individual and Community Health Efforts
   7.5.7   Promote use of standard risk-based protocols for FSE inspections and code enforcement across local jurisdictions.
   7.5.8   Enhance integration and standardization of local and state protocols for food protection (e.g., via table top exercises) and responses to foodborne illness outbreaks.
   7.5.9   Cultivate relationships between business owners and regulators to enhance reporting of suspected foodborne illness.

Enforce Laws and Regulations That Protect Health and Ensure Safety
   7.5.10   Update food code/regulations and assure regulatory compliance within the food industry.

Assure Competent Public and Personal Healthcare Workforce

    7.5.11   Enhance inspector/sanitarian and industry training, to include continuing education for regulatory staff, and focus on risk-based inspections through training and field monitoring.

    7.5.12   Train local health officials in proper conduct of retail food establishment inspections.

    7.5.13   Explore additional resources to assist local boards of health with evaluation and review of Hazard Analysis and Critical Control Points (HACCP) plans for potentially high-risk food operations required to have them.

    7.5.14   Ensure that appropriate laboratory infrastructure and systems are in place for more rapid and timely identification and characterization of pathogens.

    7.5.15   Continue state public health laboratory participation in the FDA ISO 17025 Laboratory Accreditation Cooperative Agreement Program to adapt standardized laboratory testing methods for food pathogens, and provide increased food testing capacity.

    7.5.16   Enhance efforts of the working group on Foodborne Illness Control composed of environmental health inspectors, epidemiologists and laboratorians to investigate foodborne illness.

Engagement with Governing Entities

    7.5.17   Work with local health officials statewide to enhance training opportunities for food inspectors.

    7.5.18   Explore additional resources to assist local boards of health with evaluation and review of Hazard Analysis and Critical Control Points(HACCP) plans for potentially high-risk food operations required to have them.

    7.5.19   Work with local health officials and industry to ensure appropriate training of food service employees.

    7.5.20   Enhance inspector/sanitarian and industry training, to include continuing education for regulatory staff, and focus on risk-based inspections through training and field monitoring.

Standard 7D:	Increase the capacity of local and state health officials to address environmental health issues through enhanced training.

Measure 7.6:	Enhance local and state capacity for climate change/adaptation by increasing the number of local health officials trained by 10% annually.

Outcome Indicator	Baseline	2020 Target	Data Source
Local health/municipal officials trained	90	127	*Attendance list of training sessions (April 30, 2013 Climate Variability and Health Impact Assessment Symposium)*

Numerator:	Number of attendees at climate change/adaptation training sessions
Denominator:	351 (number of municipalities in Massachusetts)
Exclusions:	N/A
Timeframe:	Annual Symposium
How will this be measured?	Report number of participants who attend annual training between 2015 and 2020

Monitor Health to Identify and Solve Community Health Problems
7.6.1   Promote use of health surveillance data (e.g., through Environmental Public Health Tracking portal) to identify smaller geographic areas within communities especially vulnerable to climate effects.

Diagnose and Investigate Health Problems and Hazards in the Community
7.6.2   Enhance surveillance efforts for Vibrio illness.

Mobilize Community Partnerships to Identify and Solve Health Problems
7.6.3   Strengthen state and regional collaborations to address potential increases in vector-borne diseases due to climate change.

Develop Policies and Plans That Support Individual and Community Health Efforts
7.6.4   Disseminate and enhance guidance and protocols for food protection during extreme events and/or natural and other disasters.
7.6.5   Promote workplace policies to reduce the risk of occupational heat stress.

Assure a Competent Public and Personal Healthcare Workforce
7.6.6   Develop tools for use by local officials in adaptation planning (e.g., population vulnerability maps specific to communities), to promote environmental justice.

Engagement with Governing Entities
7.6.7   Work with other state agencies and local health officials to integrate climate change adaptations into existing and/or new policies and regulations.
7.6.8   Enhance collaboration with federal, state, and local officials along with industry representatives to reduce the risk of Vibrio Parahaemolyticus (VP) resulting from increasing water and air temperatures due to climate change.
7.6.9   Provide training of local health officials and other municipal officials on adaptation strategies for their community.

Measure 7.7:	**Enhance local capacity to respond to environmental health inquiries by use of the Environmental Public Health Tracking (EPHT) network by 10%.**

Outcome Indicator	Baseline	2020 Target	Data Source
MHOA conference registrants	336	370	*MHOA Annual Conference Registration database (number registered at 2013 annual MHOA conference)*

Numerator:	Number of individuals registered for MHOA annual meeting
Denominator:	N/A
Exclusions:	N/A
Timeframe:	Annual
How will this be measured?	Show 5 year (2015-2020) average annual registration has increased by 10% since baseline

Monitor Health to Identify and Solve Community Health Problems
7.7.1   Develop community-specific maps to identify populations at greatest risk.
7.7.2   Develop community-specific data profiles to highlight key health and environmental indicators.
7.7.3   Determine relevant occupational health indicators to include on the Environmental Public Health Tracking portal.
7.7.4   Develop a protocol to readily identify at risk populations to promote health equity.

Inform, Educate, and Empower People About Health Issues
7.7.5   Develop community-specific maps to identify populations at greatest risk.
7.7.6   Develop community-specific data profiles to highlight key health and environmental indicators.
7.7.7   Determine relevant occupational health indicators to include on the Environmental Public Health Tracking portal.
7.7.8   Create training for local health officials on diverse use of EPHT information.
7.7.9   Expand hands-on training of local health officials in the Environmental Public Health Tracking (EPHT) portal to help inform local decisions.

Mobilize Community Partnerships to Identify and Solve Health Problems
7.7.10   Expand hands-on training of local health officials in the Environmental Public Health Tracking (EPHT) portal to help inform local decisions.
7.7.11   Develop community-specific data profiles to highlight key health and environmental indicators.
7.7.12   Determine relevant occupational health indicators to include on the Environmental Public Health Tracking portal.

Link People to Needed Personal Health Services and Health Care
7.7.13   Develop community-specific maps to identify populations at greatest risk.
7.7.14   Develop community-specific data profiles to highlight key health and environmental indicators.
7.7.15   Determine relevant occupational health indicators to include on the Environmental Public Health Tracking portal.

Engagement with Governing Entities
7.7.16   Expand hands-on training of local health officials in the Environmental Public Health Tracking (EPHT) portal to help inform local decisions.
7.7.17   Create training for local health officials on diverse use of EPHT information.

Partners/Resources for Environmental Risk Factors and Health

- Asthma Coalitions (Boston, Brockton, Springfield, etc.)
- Motor vehicle repair shops
- Businesses, trade associations
- Coalition for Local Public Health
- Community based transportation related partners (e.g., Somerville Transportation Equity Partnership)
- Early education and childcare centers
- Health care providers
- Health Care without Harm
- Healthy Schools Network
- Local boards of health and health departments
- Local Housing Authorities
- MA Association of Health Boards
- MA Bay Transportation Authority (MBTA) and regional transit authorities
- MA Coalition for Occupational Safety and Health
- MA Department of Early Education and Care
- MA Department of Elementary and Secondary Education
- MA Department of Environmental Protection
- MA Environmental Health Association
- MA Health Officers' Association
- MA Public Health Association
- MA Restaurant Association
- MAAP – Asthma Action Partnership
- Manufacturers
- Nail Salon licensing
- National Centers for Healthy Housing
- Pest Control Operators
- Schools/Universities/Schools of Public Health
- Sustainable Hospital Project at U Mass Lowell
- Toxic Use Reduction Institute (TURI) at UMass Lowell
- Unions
- US Environmental Protection Agency

Other Plans That are Incorporated Directly or by Reference in Environmental Risk Factors and Health

- Massachusetts 2014 Vibrio Parahaemolyticus (VP) Control Plan
- Environmental Health Assessment Protocol: Protocol for Community-Specific Environmental Health Assessments. Prepared by MDPH Bureau of Environmental Health (October 2012 Revision).
- MDPH Foodborne Illness Investigations and Control Reference Manual

Appendices

Appendix A: Process

Partner Engagement

Accountable and effective public health practice depends upon comprehensive and strategic health improvement planning that engages a wide range of partners. The Massachusetts SHIP development was led by the Massachusetts Department of Public Health (MDPH) in collaboration with many partners from across the Commonwealth, as detailed below. Health Resources in Action (HRiA), a non-profit public health organization based out of Boston, MA, provided technical assistance, strategic guidance, and facilitation throughout all aspects of the process, from assessment to planning.

Massachusetts SHIP Advisory Group

The Massachusetts SHIP Advisory Group, made up of 27 Massachusetts leaders across all sectors— government, non-profits, business and industry, health care, education, community services, and complementary services -- met 6 times over the months of May-August, 2013 and April-June, 2014. This group was responsible for guiding MDPH in the development of the SHIP, advising on key stakeholders, framing the assessment and plan, designing the planning process, making recommendations about SHIP structure, and reviewing and approving work group output.

SHIP Advisory Group Members

Heidi Behforouz, Global Health Equity Institute/Brigham and Women's Hospital

Vic DiGravio, Association for Behavioral Healthcare

Deborah Dickerson, Children's Hospital

Patricia Edraos, MA League of Community Health Centers

Ralph Fuccillo, Dentaquest Foundation

Marcy Goldstein-Gelb, MA Coalition for Occupational Safety and Health

Judith Kurland, UMass Boston

Monica Lowell, UMass Memorial Health Care

Monika Mitra, UMass Medical School, Center for Health Policy and Research

Sean Palfrey, Boston Medical Center, MA Chapter, American Academy of Pediatrics

Frank Robinson, Partners for a Healthier Community/Springfield

Cheryl Sbarra, MA Association of Health Boards

Nancy Turnbull, Harvard School of Public Health

Karen Voci, Harvard Pilgrim Healthcare Foundation

Clara Savage, Common Pathways

Tarah Somers, Environmental Protection Agency, Region 1

Alan Woodward, MA Medical Society

MDPH Staff Designees

Elizabeth Barry	Martha Steele
Robert Carr	Lydie Ultimo
Michael Coughlin	Georgia Simpson May
Letitia Davis	Geoff Wilkinson
Kerin Milesky	

Massachusetts State Health Improvement Planning Coalition

The Massachusetts State Health Improvement Planning Coalition, a large body of 65 representatives from diverse local, regional, and statewide entities whose policies and activities can affect and influence health, was responsible for reviewing the assessment data; participating in three facilitated planning sessions and working groups; making recommendations for the plan; serving as community ambassadors for planning initiatives; and fostering connections with key networks and groups for action.

The Coalition participated in three intensive, facilitated planning sessions over the months of September-November, 2013. At the first meeting on September 29, the Coalition reviewed data on priority health topics and issues determined via survey, provided feedback on a rating/ranking tool for prioritizing health topics and health systems issues for the plan, and conducted a test run of the rating/ranking tool. On October 9, Coalition members reviewed the results of a rating/ranking exercise, which was completed electronically by coalition members between sessions 1 and 2; established domains for the SHIP; defined and refined the Essential Service Clusters; and developed draft goal statements for each of the identified domains. Lastly, on November 12, Coalition members worked in small groups to develop objectives and strategies for each of the domains through structured, interactive exercises designed to engage feedback from other groups and provide opportunity for refining output based on this feedback.

SHIP Planning Session Participants

Abbie Averbach, UMass Medical School

Cheryl Bartlett, MDPH

Madeleine Biondollilo, MDPH

Derek Brindisi, City of Worcester

Lisa Brukilacchio, Cambridge Health Alliance

Stephanie Buckler, MHA

Tom Carbone, Town of Andover

Beth Chandler, YWCA

Ashley Clement, MDPH

Martin Cohen, Metrowest Foundation

James Corbett, Steward Health Care

Patrick Cronin, MOAR

Steve Curry, City of Fitchburg

Tom Delaney, MOAR

Michael Devlin, Harvard Pilgrim Foundation

Sherry Dong, Tufts Medical Center

Louis Fazen, MA Medical Society

Marcia Fowler, Department of Mental Health

Elmer Freeman, Northeastern University

Tami Gouveia, Tobacco Free MA

Rebecca Haag, AIDS Action

Jeff Harness, Cooley Dickinson Hospital

Paul Hattis, Tufts University School of Medicine

Terry Hayes, MHOA, Town of Dennis

Sharmila Hazra, Asian Women for Health

Marc Hymowitz, American Cancer Society

Claude Jacob, City of Cambridge

Catherine Jason, NHP

David Kreibel, UMass Lowell

Stewart Landers, JSI

Wendy Landman, Walk Boston

Paul Lanzikos, North Shore Elder Services

Mary Lauby, Jane Doe

Mary McKenzie, MAPHN

Dorothy McCabe, MNA

David Naparstek, Public Health Consultant

Huy Nguyen, Boston Public Health Commission

Laura Noble, NHP

Tom O'Brien, AGO

Cathy O'Connor, MDPH

Jamie Pianka, MDPH

Tavinder Phull, Partners Health

Chris Pontus, MNA

Ann Marie Rakovic, JSI

Maddie Ribble, MPHA

Pamela Rivers, MSNO

Frank Robinson, Partners for a Healthier Community, Springfield

Peg Sallade, Public Health Consultant

Ronnie Sanders, Partners Healthcare

Malisa Schuyler, Tufts Medical Center

Susan Servais, MA Health Council

Audrey Shelto, BCBSMA Foundation

Pamela Siren, MAHP

Jeff Stone, MA Health Council

Sheri Sore, Executive Office of Elder Affairs

Donald Thieme, MCCH

Mitchell Thomas, MDPH

Kristin Thorn, MassHealth

Steve Ward, Town of Framingham

Susan Webb, MA Medical Society

David Wegman, UMass Lowell

Brenda Weis, City of New Bedford

Kaitlyn Kenney Walsh, BCBSMA Foundation

Steve Ward, Town of Framingham

Susan Webb, MA Medical Society

David Wegman, UMass Lowell

Sam Wong, Town of Hudson

Subject Matter Expert Review

A core team from MDPH and the HRiA consultants reviewed the initial draft output from the planning sessions and edited material for clarity, consistency, and evidence base.

Following this initial edit, the Commissioner of Public Health, MDPH Bureau Directors, and other subject matter experts participated in detailed review of plan components over the months of January to August, 2014, to ensure inclusion of the most promising and evidence-based strategies as well as alignment with other key national and state-wide initiatives, plans, and priorities, while maintaining the integrity of the original draft content provided by Coalition planning. This feedback was incorporated into the version of the SHIP contained in this report.

Domain	Subject Matter Expert
Health Equity	Georgia Simpson May, Director of the Office of Health Equity
Health Systems Infrastructure	Tom Land, Director of the Office of Data Management and Outcomes Assessment
	Jana Ferguson, Director of the Office of Local and Regional Health
	Cathy O'Connor, Director of Community Planning
	Mary Clark, Director of the Office of Emergency Management and Response
	Kerin Milesky, Office of Emergency Management and Response
	Madeleine Biondolillo, Associate Commissioner
	Michael Coughlin, Accreditation Manager
Active Living, Healthy Eating, and Tobacco-Free Living	Wendy Landman, Walk Boston
	Kendrin Sonneville, HSPH and Boston Children's Hospital
	Steve Miller, Usable Streets Alliance
	Ben Wood, Clair Santarelli, Jamie Corliss, MDPH
	Patti Henley, MDPH
	Mark Paskowsky, MDPH
Chronic Disease Prevention and Control	Jean Zotter, MDPH
	Anita Christie, MDPH
Infectious Disease Prevention and Control	Kevin Cranston, MDPH
	Alfred DeMaria, MDPH
	Glynnis LaRosa, MDPH
	Sandy Collins, Director of Health Care Services, Westford Health Dept.
	Cathy Korn, Infection Prevention, Boston Medical Center
	Ben Kruskal, Chief of Infectious Disease, Harvard Vanguard Medical Associates, an Affiliate of Atrius Health

Substance Abuse Prevention, Intervention, Treatment, and Recovery	Carol Girard, Coordinator, SBIRT Programs
	Steve Keel, Director of Prevention and Treatment of Problem Gambling
	Jose Morales, Director of Prevention
	Karen Pressman, Director of Planning and Development
	Sarah Ruiz, Assistant Director of Planning and Development
	Lydie Ultimo, Acting Director of Substance Abuse Services
Injury, Suicide, and Violence Prevention	Erin Miller, Coordinator for Domestic Violence and Sexual Assault Prevention, Newton-Wellesley Hospital
	Maureen Gallagher, Policy Director, Jane Doe Inc: The MA Coalition Against Sexual Assault and Domestic Violence
	Marcia Diamond, MDPH
	Alan Holmund, MDPH
	Lonnie McAdoo, MDPH
	Julie Kautz Mills, MDPH
	Larry Berkowitz, Director, Riverside Trauma Center
	Roberta Hurtig, Executive Director, Samaritans, Inc.
Maternal, Child, and Family Health Promotion	Kathy Messenger, MDPH
	Susan Manning, CDC MCH Epidemiologist
	Hafsatou Diop, MDPH
	Ron Benham, MDPH
	Rachel Colchamiro, MDPH
	Karin Downs, MDPH
Environmental Risk Factors and Health	Brenda Weis, New Bedford Health Department
	Tarah Somers, EPA
	Martha Steele, MDPH
	Jan Sullivan, MDPH

Community Engagement and Feedback

Community engagement at multiple levels is critical throughout all components of a health improvement planning process, from conducting the state health assessment, to developing and implementing the state health improvement plan. Involving a broad range of stakeholders and developing multi-sector partnerships led to the creation of this actionable and sustainable SHIP.

Massachusetts is a state with a rich history of surveillance and data analysis. The *Health of Massachusetts* report published in April 2010 served as the formal state health assessment report. The Health of Massachusetts report was prepared in consultation with a group of Subject Matter Experts (SMEs) from outside the Department of Public Health. The SMEs represented the public health academic, advocacy, and provider community. Each SME provided a policy perspective in response to the findings in each chapter of the report. The findings of the Health of Massachusetts report were then

presented by MDPH Commissioner John Auerbach at a series of Regional Health Dialogues held across Massachusetts in 2010 for hundreds of MDPH stakeholders.

The Health of Massachusetts Supplement (Update) 2014 was updated with current data by consultants from Health Resources in Action, Inc. The Department of Public Health updated the data sets from the 2010 report and used them extensively to inform the process of compiling the State Health Improvement Plan in 2013-2014. A comprehensive Data Matrix was compiled and presented to the SHIP Advisory Council and SHIP Retreat participants to inform their deliberations in shaping the final State Health Improvement Plan.

In addition, Tribal experts and MA SHIP Planning Coalition members were surveyed to identify their priority health topic and health systems issues based on overall findings (see Appendix C for data matrix).

Appendix B: Essential Services and Related Strategies

12 Essential Services

The essential service clusters outlined below represent categories of related strategies and interventions that provide a unifying framework for successful implementation of the SHIP and correspond to the 10 Essential Public Health Services and PHAB Standards 11 and 12. The Centers for Disease Control and Prevention have depicted the relationship among the Essential Public Health Services in the following graphic and have defined each service as noted in the definitions below:

Source: CDC
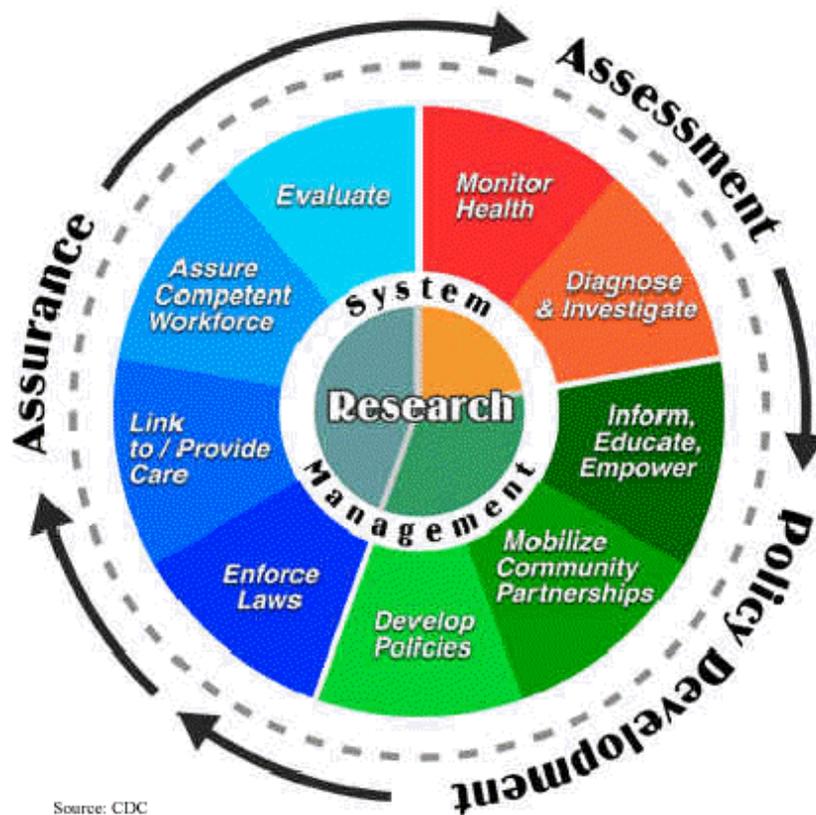
Strategies within each of these essential service clusters will use a social determinant of health lens, which considers the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels and determine the risk factors that contribute to vulnerability among certain populations. During the development of the SHIP, there was a specific focus on those contributing factors that make certain populations vulnerable in an effort to work towards eliminating health disparities and achieving health equity. Recognizing the impact that social determinants have on health outcomes of specific populations, the MA SHIP will track rates of illness, death, chronic conditions, behaviors, and other types of outcomes in relation to demographic factors and the social environment to the extent possible.

Vulnerable populations are defined as those populations who are disproportionately affected by, and/or have a disadvantaged or underserved relationship with, the diagnosis, prevention, and treatment of specific health topics. Vulnerable and underserved populations include: infants and children; adolescents and young adults; older adults; persons identifying as lesbian, gay, bisexual, or transgender; racially, ethnically and linguistically diverse; people with disabilities; veterans; low income, homeless, rural, or incarcerated persons; and immigrants and refugees.

Essential Service 1. Monitor Health to Identify and Solve Community Health Problems

How do we know how healthy we are? Public health surveillance is the collection, analysis, and use of data to target public health prevention efforts. Conducting accurate, periodic assessments of the community's health status helps to identify health risks**,** focus attention on vital statistics and disparities, and identify community assets and resources. Use of methods and technology (e.g., mapping technology) to interpret and communicate data, and maintaining population health registries, are key strategies of this service area.

Essential Service 2. Diagnose and Investigate Health Problems and Hazards in the Community

Are we ready to respond quickly and effectively to health problems or threats? This service area includes timely identification and investigation of health threats, availability of diagnostic services, including laboratory capacity, and response plans to address major health threats.

Essential Service 3. Inform, Educate, and Empower People About Health Issues

How well do we keep all segments of our state/community informed about health issues? Ensuring that all residents of the Commonwealth are able to access information in a form and through a mechanism that are appropriate and relevant to them is critical for ensuring state-wide awareness and knowledge of health information, resources and services, and best practices and approaches. Initiatives using health education and communication sciences build knowledge and shape attitudes, inform decision-making choices, and develop skills and behaviors for healthy living. Health education and health promotion partnerships within the community to support healthy living, and media advocacy and social marketing, are key strategies of this service area.

Essential Service 4. Mobilize Community Partnerships to Identify and Solve Health Problems

How well do we truly engage people in state/community health issues? Large-scale social change requires broad cross-sector coordination, yet the social sector remains focused on the isolated intervention of individual organizations.[25] In order to achieve the collective impact aims of this SHIP, partnerships will need to be nurtured, sustained, and/or developed across sectors, using the framework of the SHIP to help align, integrate, and reinforce partner activities. Constituency development strategies, such as identification of system partners and stakeholders, coalition development, and formal and informal partnerships, promote health improvement and benefit from soliciting community based knowledge, resources, and energy in identifying, addressing, and resolving complex health issues.

Essential Service 5. Develop Policies and Plans That Support Individual and Community Health Efforts

How well are we setting policies in both the government and private sector to promote health in our state/community? Laws and policies can affect population health and reduce long-term medical and other costs. This service area focuses on policy development to protect health and guide public health practice, and alignment of resources to assure successful implementation of key strategies. Activities include but are not limited to community and state improvement planning and emergency response planning, targeted laws such as child safety seat laws, and broad-based policies, such as smoking bans and laws.

Essential Service 6. Enforce Laws and Regulations That Protect Health and Ensure Safety

When we enforce health regulations are we technically competent, fair and effective? Ongoing review, evaluation, and revision of legal authority, laws, and regulations; education about and advocacy for laws and regulations to protect and promote health; and support of compliance efforts and enforcement are key components of this service area.

Essential Service 7. Link People to Needed Personal Health Services and Assure the Provision of Health Care When Otherwise Unavailable

Are people in my state/community receiving the health services they need? Clinical preventive services, such as routine disease screening and scheduled immunizations, are key to reducing death and disability and improving health. Yet, despite the fact that these services are covered by Medicare, Medicaid, and many private insurance plans under the Affordable Care Act, millions of children, adolescents, and adults go without services that could protect them from developing a number of serious diseases or help them treat and manage certain health conditions before they worsen. Access to care in both traditional clinical settings as well as community-based settings includes issues of affordability, proximity and availability of transportation options, hours of service, cultural competence, and the health literacy/awareness of those seeking care. Identification of populations with barriers to care, culturally appropriate and targeted health information for at risk population groups, and transportation and other enabling services ensure effective entry into a coordinated system of clinical care and ongoing care management, especially for those most at risk.

Essential Service 8. Assure a Competent Public and Personal Healthcare Workforce

How can we be sure that we have competent, current public health staff? One of the essential public health services is ensuring an adequate supply of highly skilled and credentialed health professionals is available to meet current and future public health needs. *Assessing the public health and personal health workforce* and maintaining public health workforce standards involves efficient processes for licensing /credentialing requirements, and the identification and use of public health competencies such as leadership development and cultural competence, to define continuing education and life-long learning objectives for public health workers. The development and deployment of Community Health Workers (CHW's) is a key strategy to address the shortage and diversity of the professional health workforce.

Essential Service 9. Evaluate Effectiveness, Accessibility, and Quality of Health Services

Are we doing the right things in the right way to meet the needs of the population we serve? Ongoing evaluation of personal health services, population based services, and the public health system as a whole are the foundational elements for systemic quality improvement and performance management strategies that ensure performance excellence in public health.

Essential Service 10. Research for New Insights and Innovative Solutions to Health Problems

Are we discovering and using new ways to get the job done? Public health research activities include initiating research, participating in research by others, reporting results, and implementing policy based on these results. Strategies include identification and monitoring of innovative solutions and cutting-edge research to advance public health, creating linkages between public health practice and academic/research settings, and conducting epidemiological studies, health policy analyses and public health systems research.

Essential Service 11. Governance (Maintain Administrative Management Capacity)

Organizational administration and management is the process of organizing, leading, and controlling the efforts of organizational, human and other resources to make decisions and achieve organizational goals. Health departments must have a well-managed human resources system, be competent in general financial management, have data management capacity and capability, and be knowledgeable about public health authorities and mandates. And, because of the nature of public health – the focus on the collective good, the employment of government action, and the objective of population-based outcomes – public health leaders need an infrastructure to ensure that decisions, policies, plans, and programs are ethical and address health equity. Health department leaders and staff must be knowledgeable about the structure, organization, and financing of their public health department and other agencies and organizations that provide public health services.[26]

Essential Service 12. Governance (Engagement with Governing Entities)

Public health governing entities exercise a wide range of responsibilities, including policy development, resource stewardship, legal authority, partner engagement, continuous improvement, and oversight. Specific areas of responsibilities may include strategic planning, adopting and ensuring enforcement of public health regulations, ensuring that the governing body and health department act ethically, serving as a strong link between the health department and the community and other community organizations, supporting a culture of quality improvement, hiring and evaluating the health department director, taxing authority, and budget adoption. These responsibilities demand that the governing entity is well-versed in public health and in the work of the health department and the health challenges of the community. The governing entity and the health department should communicate regularly on the health of the community, strategic plan implementation, program activities, health department policy issues, public health ethical issues, and quality improvement activities.[27]

Objectives	Essential Services and Related Strategies											
	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support I Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
Health Systems Infrastructure												
Systems Measure 1: By December 31, 2015, create a Public Health Data Warehouse to maintain and improve surveillance capacity; and increase the accessibility of data for state and local public health activities, for evaluation of key public health initiatives, and for the SHIP objectives	S.1.1 S.1.2 S.1.3 S.1.4 S.1.5		S.1.6 S.1.7 S.1.8 S.1.9 S.1.10 S.1.11	S.1.12	S.1.13 S.1.14 S.1.15 S.1.16 S.1.17 S.1.18 S.1.19 S.1.20 S.1.21			S.1.22	S.1.23 S.1.24			
Systems Measure 2: By December 31, 2015, enhance the capacity of local health departments to respond to public health needs.	S.2.1 S.2.2							S.2.3 S.2.4	S.2.5			
Systems Measure 3: By December 31, 2015, establish and maintain a system to support and provide technical assistance to a network of community based collaborative partnerships across Massachusetts to promote public health.	S.3.1 S.3.2			S.3.3	S.3.4 S.3.5			S.3.6				

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	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support I Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
Systems Measure 4: By June 30, 2017, establish six regional health and medical coordinating coalitions that will support and enhance the ability of the Commonwealth to prepare for, respond to, recover from, and mitigate the impact of public health and medical threats, emergencies and disasters, including acts of terrorism.				S.4.1 S.4.2	S.4.3 S.4.4							S.4.5 S.4.6
Systems Measure 5: Develop a Public Health Workforce Development Plan(e.g., PM/QI including regulatory oversight) to increase public health workforce capacity for Massachusetts, including quantity, quality, and diversity of workforce.				S.5.1 S.5.2				S.5.3 S.5.4 S.5.5 S.5.6 S.5.7				
Systems Measure 6: Increase Massachusetts' public health licensing and regulatory enforcement capacity (e.g., Health Planning, DON) by December 2015.					S.6.1 S.6.2 S.6.3							

Objectives	Essential Services and Related Strategies											
	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
Domain 1. **Active Living, Healthy Eating, and Tobacco-Free Living**												
1.1: Increase the percentage of adults, adolescents, and children that report consuming 5 servings of fruits and vegetables daily by 2%.	1.1.1	1.1.2 1.1.3		1.1.4 1.1.5 1.1.6	1.1.7 1.1.8	1.1.9		1.1.10 1.1.11			1.1.12 1.1.13	
1.2: Increase the relative percentage of adolescents and children who report consuming no more than one sugar-sweetened beverage daily by 2%.	1.2.1			1.2.2	1.2.3				1.2.4			
1.3: Increase the relative percentage of adults, adolescents, and children who engage in daily moderate to vigorous physical activity as per CDC recommendations by 3%.	1.3.1			1.3.2 1.3.3 1.3.4	1.3.5 1.3.6 1.3.7 1.3.8	1.3.9			1.3.10 1.3.11			
1.4: Reduce the relative percentage of adults who are current smokers by 10%.			1.4.1 1.4.2 1.4.3		1.4.4 1.4.5 1.4.6 1.4.7 1.4.8 1.4.9 1.4.10	1.4.11	1.4.12 1.4.13	1.4.14 1.4.15				
1.5: Reduce the relative percentage of tobacco use among high school students by 10%.			1.5.1 1.5.2	1.5.3	1.5.4 1.5.5 1.5.6 1.5.7							
1.6: Reduce the relative percentage of adults who report exposure to secondhand smoke of more than 1 hour per week by 10%.			1.6.1		1.6.2 1.6.3 1.6.4 1.6.5	1.6.6		1.6.7				
Domain 2. Chronic Disease Prevention and Control												

Objectives	Essential Services and Related Strategies											
	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support I Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
2.1: Increase the relative percentage of Massachusetts men 40 years and older who talked to their doctor, nurse, or other health professional about the advantages and disadvantages of the prostate-specific antigen (PSA) by 10%.			2.1.1 2.1.2				2.1.3	2.1.4 2.1.5				
2.2: Increase screening rates for colorectal cancer for Massachusetts adults age 50-75 years to 80%.			2.2.1 2.2.2 2.2.3					2.2.4 2.2.5 2.2.6				
2.3: Increase the percentage of adults with hypertension who have their hypertension under control by 2.5%	2.3.1 2.3.2		2.3.3 2.3.4 2.3.5 2.3.6 2.3.7	2.3.8 2.3.9 2.3.10 2.3.11 2.3.12			2.3.13	2.3.14 2.3.15	2.3.16			
2.4: Decrease the relative percentage of adults with diabetes that have an A1c value greater than 9.0% by 2.5%.	2.4.1 2.4.2 2.4.3		2.4.4 2.4.5		2.4.6		2.4.7 2.4.8	2.4.9 2.4.10	2.4.11			
2.5: Reduce the at-risk rate of pediatric asthma hospitalizations by 1.5% and the disparity among Black Non-Hispanics by an additional 1%.	2.5.1 2.5.2			2.5.3 2.5.4	2.5.5 2.5.6		2.5.7	2.5.8	2.5.9 2.5.10			
2.6: Decrease relative percentage of obesity among Massachusetts adults and youth by 5%.		2.6.1 2.6.2	2.6.3 2.6.4	2.6.5	2.6.6 2.6.7	2.6.8						
Domain 3. Infectious Disease Prevention and Control												
3.1: Reduce the incidence of selected vaccine preventable diseases/increase immunization rates for selected vaccine preventable diseases.	3.1.1		3.1.2 3.1.3		3.1.4 3.1.5 3.1.6 3.1.7							

Objectives	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support I Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
Essential Services and Related Strategies												
3.2: Decrease by 10% Lyme disease reported in children under the age of 19			3.2.1 3.2.2 3.2.3	3.2.4	3.2.5 3.2.6							
3.3: Decrease the incidence of sexually transmitted infections (chlamydia, gonorrhea, and syphilis) in adolescents and high risk adult populations.			3.3.1 3.3.2 3.3.3 3.3.4				3.3.5					
3.4: Decrease the incidence of newly diagnosed HIV infections overall and among men who have sex with men (MSM) to meet multiple specified targets, and reduce racial and ethnic HIV infection disparities by 20%.	3.4.1		3.4.2 3.4.3 3.4.4	3.4.5			3.4.6					
3.5: Increase the average time between diagnosis of hepatitis C virus (HCV) infection and death due to hepatitis C virus infection from 3 years to 4 years.	3.5.1 3.5.2		3.5.3		3.5.4		3.5.5	3.5.6				
3.6: Reduce standard infection ratios (SIR) to 1.00 or below for CLABSI's, SSI's and CAUTI's, in acute care hospitals through application of evidence-based interventions.	3.6.1		3.6.2	3.6.3					3.6.4			
3.7: Limit the yearly increase in campylobacter cases to less than 1%and maintain reported cases of salmonella at fewer than 1,200 per year.		3.7.1	3.7.2 3.7.3									
Domain 4. Substance Abuse Prevention, Intervention, Treatment and Recovery												

Objectives	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support I Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
4.1: Reduce the relative percentage of youth who report having tried alcohol for the first time before age 13 by 5%.	4.1.1		4.1.2 4.1.3 4.1.4	4.1.5 4.1.6	4.1.7							
4.2: Increase the annual number of healthcare providers trained by MDPH/BSAS to incorporate screening and intervention for unhealthy substance use by 5%.				4.2.1				4.2.2 4.2.3 4.2.4 4.2.5 4.2.6				
4.3: Reduce a specified multiple provider episode (MPE) rate in the state by 20% (i.e., the number of individuals who receive at least one Schedule II and/or III prescription opioid from 4 or more different prescribers and 4 or more different pharmacies during the calendar year divided by the state population).	4.3.1		4.3.2	4.3.3	4.3.4	4.3.5		4.3.6				
4.4: Reduce the number of individuals identified per year with combined opioid prescriptions for an average morphine milligram equivalent (MME) greater than 100 mg per day by 10%.	4.4.1		4.4.2	4.4.3	4.4.4	4.4.5		4.4.6				
4.5 Ensure that 100% of BSAS-funded prevention coalitions and the integrated communities and municipalities use the Strategic Prevention Framework (SPF).				4.5.1 4.5.2				4.5.3	4.5.4			
4.6 Increase the relative percentage of non-white opioid addicted individuals enrolled in MDPH/BSAS-funded medication assisted treatment programs by 5%.				4.6.1 4.6.2	4.6.3 4.6.4		4.6.5 4.6.6 4.6.7					

Essential Services and Related Strategies

Objectives	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
Domain 5: Injury, Suicide and Violence Prevention												
5.1: Stabilize the rate of fatal poisonings, with particular focus on opioid related poisonings.	5.1.1		5.1.2	5.1.3 5.1.4								
5.2: Prevent an increase in the rate of unintentional fall deaths among residents ages 65+ years.	5.2.1	5.2.2		5.2.3	5.2.4 5.2.5 5.2.6		5.2.7	5.2.8	5.2.9			5.2.10
5.3: Decrease the rate of unintentional motor vehicle traffic deaths among MA residents by 5%.	5.3.1 5.3.2		5.3.3 5.3.4 5.3.5 3.5.6	5.3.7	5.3.8 5.3.9 5.3.10	5.3.11						
5.4: Reduce the rate of unintentional injury deaths among residents ages 0-19 years by 10%.	5.4.1 5.4.2 5.4.3 5.4.4		5.4.5 5.4.6 5.4.7 5.4.8		5.4.9 5.4.10	5.4.11			5.4.12			
5.5: Prevent an increase in the age adjusted rate of suicide among MA residents, particularly those most at risk.	5.5.1		5.5.2	5.5.3	5.5.4 5.5.5 5.5.6 5.5.7 5.5.8	5.5.9	5.5.10 5.5.11	5.5.12		5.5.13 5.5.14		5.5.15 5.5.16
5.6: Reduce rates of work-related injuries among public and private sector employees, particularly those at greatest risk, to meet multiple specified targets.	5.6.1 5.6.2	5.6.3	5.6.4 5.6.5 5.6.6	5.6.7 5.6.8 5.6.9	5.6.10 5.6.11 5.6.12	5.6.13						5.6.14
5.7: Reduce sexual and domestic violence, with particular focus on disparate populations, to meet multiple specified targets.			5.7.1 5.7.2	5.7.3 5.7.4	5.7.5 5.7.6		5.7.7 5.7.8	5.7.9 5.7.10 5.7.11 5.7.12		5.7.13	5.7.14	
5.8: Reduce fatal violence among youth age 15-24 with particular focus on disparate populations, to meet multiple specified targets.			5.8.1	5.8.2 5.8.3 5.8.4 5.8.5	5.8.6 5.8.7	5.8.8	5.8.9 5.8.10 5.8.11	5.8.12 5.8.13			5.8.14	

Objectives	Essential Services and Related Strategies											
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5.9: Reduce the hospital-acquired pressure ulcer prevalence in acute and non-acute care hospitals by 10%.	5.9.1 5.9.2		5.9.3	5.9.4 5.9.5								
5.10: Reduce the prevalence of falls with serious injury or death in acute and non-acute care hospitals by 10%.	5.10.1 5.10.2		5.10.3 5.10.4	5.10.5								
5.11: Reduce the prevalence of wrong site or side procedures and surgeries in acute and non-acute care hospitals and ambulatory surgical centers by 10%.	5.11.1 5.11.2		5.11.3 5.11.4	5.11.5 5.11.6 5.11.7								

Essential Services and Related Strategies

Objectives	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support I Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
Domain 6. Maternal, Child and Family Health Promotion												
6.1: Reduce the teen birth rate in the highest need communities by 10%.	6.1.1		6.1.2 6.1.3 6.1.4 6.1.5 6.1.6	6.1.7	6.1.8 6.1.9		6.1.10			6.1.11		
6.2: Reduce the relative percentage of infants with low birth weight births by 5% and premature births by 5%.	6.2.1	6.2.2	6.2.3 6.2.4	6.2.5	6.2.6 6.2.7 6.2.8	6.2.9	6.2.10	6.2.11	6.2.12	6.2.13		6.2.14
6.3: Increase the proportion of infants who are breastfed to meet multiple specified targets.	6.3.1		6.3.2 6.3.3 6.3.4	6.3.5	6.3.6 6.3.7 6.3.8 6.3.9 6.3.10 6.3.11 6.3.12		6.3.13	6.3.14 6.3.15				
6.4: Increase the proportion of pregnant women who receive teeth cleaning before and during pregnancy by 5%.	6.4.1	6.4.2	6.4.3	6.4.4	6.4.5 6.4.6 6.4.7 6.4.8		6.4.9	6.4.10 6.4.11				
6.5: Increase the relative percentage of children and adolescents who have a medical home by 10%, especially children and youth with special health care needs.	6.5.1		6.5.2		6.5.3 6.5.4		6.5.5 6.5.6	6.5.7 6.5.8				
6.6: Develop consensus definitions and comprehensive data sources to identify and measure positive early childhood health and development.	6.6.1 6.6.2		6.6.3	6.6.4 6.6.5	6.6.6 6.6.7 6.6.8 6.6.9	6.6.10	6.6.11 6.6.12	6.6.13		6.6.14		6.6.15

Objectives	Essential Services and Related Strategies											
	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support Individual Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
Domain 7. Environmental Risk Factors and Health												
7.1: Increase blood level screening rates in high-risk communities (as defined by low socioeconomic status, percent old housing stock, and other factors) by 10% (relative).			7.1.1	7.1.2 7.1.3	7.1.4		7.1.5	7.1.6				7.1.7
7.2: Reduce the prevalence rate of blood lead levels of > 25 µg/dL in persons 16 years or older by 5% (relative). (Consistent with HP 2020 objective OSH-7)	7.2.1		7.2.2	7.2.3	7.2.4	7.2.5		7.2.6				
7.3: Implement steps to improve indoor environmental quality by providing Division of Capital Asset Management and Maintenance (DCAMM) pre-occupancy assessments within an average of two weeks of inspection.			7.3.1 7.3.2 7.3.3		7.3.4						7.3.5	7.3.6 7.3.7 7.3.8
7.4: Reduce the number of avoidable complaints of poor housing conditions by increasing the number of local inspectors trained by 10%.			7.4.1 7.4.2 7.4.3	7.4.4	7.4.5 7.4.6	7.4.7		7.4.8			7.4.9 7.4.10	
7.5: Reduce the number of foodborne illness outbreaks by increasing the number of mandatory local health inspections of retail food establishments.			7.5.1 7.5.2 7.5.3 7.5.4 7.5.5	7.5.6	7.5.7 7.5.8 7.5.9	7.5.10		7.5.11 7.5.12 7.5.13 7.5.14 7.5.15 7.5.16				7.5.17 7.5.18 7.5.19 7.5.20
7.6: Enhance local and state capacity for climate change/adaptation by increasing the number of local health officials trained by 10% annually.	7.6.1	7.6.2		7.6.3	7.6.4 7.6.5			7.6.6				7.6.7 7.6.8 7.6.9

Objectives	Essential Services and Related Strategies											
	1. Monitor Health to Identify and Solve Community Health Problems	2. Diagnose and Investigate Health Problems and Hazards in the Community	3. Inform, Educate, and Empower People About Health Issues	4. Mobilize Community Partnerships to Identify and Solve Health Problems	5. Develop Policies and Plans That Support I Health Efforts	6. Enforce Laws and Regulations That Protect Health and Ensure Safety	7. Link People to Needed Personal Health Services and Health Care	8. Assure a Competent Public and Personal Healthcare Workforce	9. Evaluate Effectiveness, Accessibility, and Quality of Health Services	10. Research for New Insights and Innovative Solutions to Health Problems	11. Governance (Maintain Administrative Management Capacity)	12. Governance (Engagement with Governing Entities)
7.7: Enhance local capacity to respond to environmental health inquiries by use of the Environmental Public Health Tracking (EPHT) network by 10%.	7.7.1 7.7.2 7.7.3 7.7.4		7.7.5 7.7.6 7.7.7 7.7.8 7.7.9	7.7.10 7.7.11 7.7.12			7.7.13 7.7.14 7.7.15					7.7.16 7.7.17

Appendix C: Overview Data Matrix on Health Behaviors and Outcomes

Overview Data Matrix on Heath Behaviors and Outcomes
Massachusetts State Health Assessment and Improvement Plan – For September 26, 2013 Planning Session

	Mortality Rate or Years of Potential Life Lost (YPLL)	*Incidence, Prevalence, or Hospitalization*	*Related Costs*	*Disparities and At-Risk Populations*	*Key Trends*	**Alignment with State or Nat'l Frameworks***
Maternal, Child, and Family Health Promotion						
Teen pregnancy		14.0 births per 1,000 females aged 15-19[28]	Teen childbirth in MA cost taxpayers $178 million[29]	Highest rate among Hispanics (47.2 births per 1,000 females aged 15-19) followed by Black teens (rate of 24.5)[30]	↓ over last 10 years among all racial/ethnic groups by 40-50%	WB HP2020
Infant mortality	4.3 deaths per 1,000 live births[31]			Death rates per 1,000 live births: 8.2 Black, non-Hispanic; 5.4 Hispanic; 2.6 Asian; 3.5 White, non-Hispanic[32]	↓among Blacks in last 20 years. Very slight ↓ among Whites and Asians; rates vary (both ↓and ↑) among Hispanics	HP2020
Negative birth outcomes (preterm and low birth weight)		8.6% preterm births (<37 weeks) r[33] 7.6% low birthweight [34]	Preterm birth costs the US $26 billion annually[35]	Blacks have highest rates by far for both. For preterm birth, Black experience 10.1% preterm births per 1 followed by Hispanics (9.2%).[36]	↑ in preterm and LBW births in last decade, even when adjusting for plurality	HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Chronic Disease Prevention and Control						
Tobacco use	Over 7,700 deaths annually in MA attributed to smoking[37]	16.4% of adults smoke[38] 32% of high school students have ever smoked and 11% currently smoke[39]	$4.3 billion in MA healthcare costs due to smoking ($1.5 billion in ambulatory costs; $972 million in hospital costs)[40]	Groups with highest smoking rates include: LGBT (21.8%), less than high school education (25.0%), people with disabilities (23%), those with poor mental health (36.3%) and those on MassHealth (32.3%)[41]	Overall ↓ in last 10 years among MA adult and youth smoking; ↑ in youth e-cigarette use from 2011 to 2013	MDPH SP PrevTrust WB NPS HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Physical activity and healthy eating		56.3% of adults met aerobic guidelines[42] 18.8% of adults eat 5 or more servings of fruits or vegetables/day[43] 22.5% of high school students eat 3+ servings of fruit per day/14.6% eat 3+ servings of vegetables[44] 28.7% of middle school students eat 3+ servings of fruit per day/20% eat 3+ servings of vegetables[45] 66.4% of high school students and 64.6% of middle school students report consuming 0-1 servings of sugar-sweetened beverages per day[46] 47.4% of high school students and 51.9% of middle school students report getting 60 minutes of physical activity 5 or more days per week[47]	(see obesity data)	Those least likely to meet physical activity guidelines: Hispanics (44%) and Asians (50.4%) and those with less than HS education (42.4%)[48] Gender gap for f/v consumption, with 14.7% of males meeting guideline (vs. 22.5% of females)[49]	↓ in fruit consumption over the last 10 years among adults	MDPH SP PrevTrust WB NPS HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Obesity		22.9% of adults are obese (58.8% considered overweight or obese)[50] 15.7% of MA students in 1st, 4th, 7th, and 10th grades are obese[51]	$3.5 billion in obesity-related MA healthcare expenditures[52] 7.6% of all MA healthcare costs due to obesity[53]	Groups with highest adult obesity rates: American Indians (34%),[54] Black (31.6%), Hispanic (30.9%), less than HS education (31.1%), people with disabilities (33.7%) and Western (26.1%) and South East (25.8%) regions of MA[55]	Overall ↑ in rates in past 15 years	MDPH SP PrevTrust WB NPS HP2020
Hypertension/ High Blood Pressure		29.2% of MA adults report high blood pressure[56] 54 hospitalizations per 100,000 for hypertension[57]	$82.7 million in MA hospital costs when hypertension is main diagnosis[58]	Rates highest among Blacks (34.6%), Whites (30.1%), people with disabilities (42.9%), and those with less than HS education (37.1%) as well as those living in Western, North East, and the South East regions of MA[59]	Overall ↑ in rates in past 10 years	MDPH SP PrevTrust HP2020
High Cholesterol		34.3% of adults report high cholesterol[60]	$37.2 billion spent in U.S. on cholesterol-related services / medications[61]	Groups most likely with high cholesterol: people with disabilities (46.6%), those with less than HS education (41.9%), and those living in North East (36.2%) and South East (35.7%) regions[62]	Overall ↑ in past 15 years	MDPH SP PrevTrust HP2020
Cardiovascular Disease (CVD) and Stroke	149.4 deaths per 100,000 residents from CVD[63] and 47,753 years of potential life lost (YPLL)[64] 31.2 deaths per 100,000 residents from stroke[65] and 7,276 YPLL[66]	5.2% of adults ever diagnosed with angina or heart disease[67] 3.1% of adults report having a stroke[68] 261 stroke hospitalizations per 100,000[69]	$3.4 billion in inpatient hospital charges in MA for cardiovascular disease[70] $1.2 billion in direct and indirect costs in MA for stroke[71]	Groups most likely diagnosed with heart disease or stroke: people with disabilities, those with less than $25,000 income, and residents in Western, Central, and South East regions[72]	Overall ↓ in past 15 years in heart disease and stroke age-adjusted death rates	MDPH SP HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Diabetes	13.3 diabetes deaths per 100,000 residents[73] and 6,122 YPLL[74]	8.3% of adults have diabetes[75] 108 hospitalizations per 100,000 population (Type 2 only) 130 ED visits per 100,000 (Type 2 only) [76]	Nearly $150 million in MA inpatient hospitalizations with diabetes as admitting diagnosis[77]	Rates highest among Blacks (10.9%), Hispanics (10.4%), the people with disabilities (17.1%), those with less than a HS education (13.1%), and residents in the South East, Western, and North East regions[78]	Very slight ↑in percentage of adults with diabetes in past several years	MDPH SP PrevTrust HP2020
Cancer	166.0 cancer (all site) deaths per 100,000 residents[79] and 90,696 YPLL[80]	11.0% of adults ever diagnosed with cancer[81]	Colorectal cancer alone accrues $133 million in MA for inpatient hospital charges[82]	Both cancer incidence and mortality are higher in Black males than in White males. Among females, overall cancer incidence is highest among Whites and overall mortality is also highest among Whites[83].	Slight ↓ in both cancer incidence and deaths (all site) in past 10 years	MDPH SP HP2020
Asthma and COPD	Asthma deaths per 100,000 residents: 0.63 per 100,000 for 35-64 years old and 2.99 for 65+ years old[84] 84.4 COPD deaths per 100,000 residents[85]	10.7% of adults currently have asthma[86] 24% of high school students report having asthma[87] 18.4 in-patient admissions for asthma per 10,000 population hospitalized due to asthma (inpatient)[88] and 57.8 ED visits for asthma per 10,000 population[89]	$88.9 million in hospitalization charges in MA due to asthma[90] $34 million in ED charges in MA due to asthma[91]	Asthma hospitalization rate highest among 0-4 yrs old & 65+ yrs old, Hispanic and Black residents, and Southeast and Boston residents	Slight ↑ in preventable hospitalizations for asthma, while recent slight ↓in asthma related ED visits, specifically for those with 2 or more visits	MDPH SP PrevTrust HP2020
Pediatric Asthma		Statewide prevalence of pediatric asthma in 5-14 year old age group was 12% in the 2012-2013 school year.[92]	The estimated cost of treating asthma in those under the age of 18 in the US is $3.2 billion per year.[93]	Among Massachusetts children, the prevalence of asthma is higher among Black non-Hispanic and Hispanic children than among White non-Hispanic children (although not statistically significantly higher).[94]	The prevalence of asthma has been increasing in children and adults since 1980.[95]	HP 2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Oral Health		17% of MA 3rd graders had untreated dental decay 13.0% of adults have 6+ teeth missing[96]	Dental expenditures in U.S. estimated at $105 billion[97] MassHealth emergency dental services were $2.6 million[98]	Adults with 6+ teeth missing are highest among Blacks (17.3%) and people with disabilities (26.9%) as well as South East (15.5%) and Western (15.3%) parts of the state	↓ in 10 years of adults who have had any permanent teeth extracted	HP2020
Disability		23.0% of adults have a disability[99] *(see endnote for disability definition)*		Higher rates among females (24.7%), those with less than a high school education (34.7%), those 75+ years old (41.1%), and residents in Western (26.5%) and South East (26.7%) region of MA	Slight ↑ in past 10 years	HP2020
Infectious Disease Prevention and Control						
Sexually Transmitted Infections		348 cases of Chlamydia per 100,000 residents[100] 39 cases of Gonorrhea per 100,000 residents[101] 8 cases of Syphilis per 100,000 residents[102]	Medical costs in U.S. estimated for STIs: $516.7 for Chlamydia, $162.1 million for Gonorrhea and $39.3 million for syphilis[103]	Incidence of Chlamydia highest among teens and young adults (15-24) (68% of reported cases) and women (69% of cases) Gonorrhea cases highest among Blacks (157 per 100,000)[104] Syphilis cases highest among Blacks (22 per 100,000) and men who have sex with men (MSM) (75% of new cases)	Between 2—2 to 2012 there is a 100% ↑ in number cases of Chlamydia. In 2012 MA experienced a 10% increase in gonorrhea from 2011. In 2012 the total number of reported infectious syphilis cases was 512; of the 512, 384 or 75% were reported as MSM.	NPS HP2020
HIV	3.4 deaths per 100,000 residents[105] and 2,899 YPLL[106]	10.5 new cases of HIV per 100,000 residents[107]	$12.6 billion in estimated medical costs in U.S. due to HIV[108]	Provincetown had the highest incidence rate of HIV diagnosis (301 per 100,000)[109] The death rate is highest among Blacks (41.17 per 100,000)[110] From 2010 -2012 73% of new cases were in men and 43% of new HIV cases are among MSM[111]	↓ in new cases of HIV and deaths from HIV over past ten years, but ↑ in the number of residents living with HIV.	WB NPS HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Tuberculosis		3.0 confirmed cases of active TB per 100,000[112]	Treating TB $17,000 per patient with non-MDR TB; $134,000 per case of MDR-TB [113]	Cases among non-US born individuals make up approximately 80% of TB in Massachusetts. Rates of TB are higher among Asian (19.1 per 100,000) and Black (13.6 per 100,000) residents.	Rates have been stable while the U.S. case rate has continued to decline. ↑ in number of MDR-TB cases in 2013	HP2020
Hepatitis (B and C)		8.46 confirmed cases of Hepatitis B (chronic and acute) per 100,000 population[114] 79 cases per Hepatitis C per 100,000 population[115]	50.7 million in estimated medical costs in U.S. due to Hepatitis B[116] Up to $1.6 billion in estimated medical costs due to HCV in the US[117]	Most newly diagnosed cases of chronic Hepatitis B are in people living in urban areas such as Boston, Worcester, Lowell and Springfield Striking increases of HCV infection among people who use drugs under 30 years of age. Over 2,100 cases reported in this population in 2012 alone.	↑ cases of chronic Hepatitis B since 2005 ↓ in overall hepatitis C cases, but still a high number of cases (7,000-10,000 annually). Highest numbers of cases among people born between 1945-1965 and in people under the age of 30 years. The increase in younger people is largely due to the injection of opioids including heroin.	HP2020
Influenza and pneumonia	16.9 deaths per 100,000 residents (influenza and pneumonia)[118]	22,317 cases of laboratory confirmed influenza in 7 month period. [119]	Estimated to cost the U.S. $34.2 billion in health care costs[120]	Higher death rates from influenza and pneumonia among those 75+ years old	↓ since 2000 in age-adjusted death rate	HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Vector borne diseases (Lyme disease, Anaplasmosis (HGA), babesiosis, West Nile virus, eastern equine encephalitis)		3,342 confirmed cases of Lyme disease (77 confirmed and probable cases per 100,000 population) in 2012[121] Babesia and HGA cases have increased by a factor of 5 in the last 5 years 0-33 confirmed cases of WNV annually,[122] 7% mortality 0-7 confirmed cases of EEE annually in last 15 years; 46% mortality	For Lyme Disease estimated $281 median total cost per patient, $1,965 mean cost per patient[123]	Incidence rates for Lyme disease continue to be highest in southeastern Massachusetts; rates of increase are greater in other parts of the state. Cape Cod and the Islands experience the greatest rate of both HGA and babesia with southern Berkshire county and Metrowest also experiencing a significant burden of disease. Both diseases threaten the safety of the blood supply. WNV cases concentrate in the urban and heavily suburban parts of the state; individuals over the age of 50 are more likely to experience severe disease Both Lyme disease and EEE disproportionately affect children.	Overall ↑ in number of cases of Lyme disease over last 10 years. Rapid increase in the number of HGA and babesia cases in the last 5 years. Fluctuation of number of WNV and EEE cases but expansion of EEE into more counties in the state. Climate change may play a role in changes in distribution and frequency of all of these diseases Both Lyme disease and EEE disproportionately affect children.	
Foodborne illness	3,000 deaths annually in the US from foodborne illness[124]	1 in 6 or 48 million Americans get sick from foodborne illness annually, with 128,000 hospitalizations[125] 4,302 confirmed cases of foodborne illness in Massachusetts in 2013[126]	$77 billion economic burden in the US annually from foodborne illness[127]	While disparities exist among racial and ethnic populations, the very young, elderly, and immune-compromised persons experience the most serious foodborne illnesses.[128]	Between 2013 and 2010-2012 in the US, the incidence of laboratory-confirmed infections increased for 6 of 8 bacteria and decreased for 2 of 8 bacteria.[129]	HP2020
Healthcare Associated Infections (HAIs)		4.5 HAIs per 100 hospital admissions[130]	Economic burden in MA from HAIs estimated at $200-$400 million[131]		Slight ↓ since FY2009, specifically related to central line associated bloodstream infection (CLABSI)	WB HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Substance Abuse Prevention, Intervention, Treatment and Recovery						
Alcohol Use		In 2011, 68% of high school students reported lifetime alcohol use, 40% reported past 30 day use (current use) and 22% reported current binge drinking. 15% reported alcohol use before age 13 [132]	$98 million in MA in ED visit costs for alcohol/ substance use[133]	In 2011, percentages of high school students of different race/ethnicity groups who reported lifetime alcohol use were: 68% of Non-Hispanic White, 67% of Non-Hispanic Black, 73% of Hispanic, 53% of other Non-Hispanic students and 69% of Non-Hispanic Multiracial students. 69% of female high school students reported lifetime alcohol use vs 67% of males. [134]	↓in lifetime alcohol use among high school students. ↓First alcohol use before age 13. Current alcohol use is stable. [135]	SPF
Illicit and Prescription Drugs		In 2011, 43% of high school students reported lifetime marijuana use, 28% reported current marijuana use and 7% reported marijuana use before age 13. In 2011, % of high school students reported use of: Cocaine 5%, Ecstasy 6%, Methamphetamines 3%, Heroin 2%, Steroids 3%. [136]	MA state spending for substance abuse estimated at $5.87 billion[137]	In 2011 among high school students, 52% of Non-Hispanic White reported use of illicit drugs**, vs. 49% of Non-Hispanic Black, 56% of Hispanics, 38% of Other Non-Hispanics and 60% of Non-Hispanic Multi-racial students. [138] ** Illicit drugs include marijuana, inhalants, over-the-counter medicines, prescription drugs that were not their own and other illicit drugs.	No overall change in lifetime, current and first time marijuana use before age 13 by high school students.	SPF
Injury, Suicide, and Violence Prevention						
Unintentional Fall Injuries in Older Adults	55.6 deaths by unintentional falls per 100,000 residents ages 65+[139]	2227.2 hospital stays and 5116.2 ED visits per 100,000 residents 65+ for unintentional fall injury.[140]	$497.5 million in inpatient hospital charges associated with unintentional fall-related injuries (all dispositions) among MA residents 65+ years[141]	Death and hospital stay rates related to unintentional fall injury are highest among residents ages 85+ years(203.8and 6309.7 per 100,000 persons)[142]	↑ in death rate by falls for adults 65+ over the last 10 years.	NPS HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Poisoning	14.5 deaths per 100,000 residents[143] Accidental poisoning - 12.1 deaths per 100,000 residents[144]	115 hospitalizations and 260 ED visits per 100,000 residents. (Source: ISP, Nonfatal Case Mix data; HDD & EDD)		Death rate for poisoning highest among males (17.3 per 100,000)[145] Death rate for accidental poisoning highest among males (15.0 per 100,000)[146]	Poisoning death rates have ↑ since 1990	HP2020
Motor Vehicle Crashes	5.3 MV-traffic deaths per 100,000 residents[147] 8,748 YPLL before age 65 due to MV-traffic deaths (WISQARS, 2011 data)	59.2 hospital stays for non-fatal MV traffic Injuries per 100,000 residents[148]	$426 million estimated in medical and work loss costs due to MV-traffic deaths of MA residents[149]	Death rates for MV-traffic crashes were highest among males (7.8 per 100,000), those 15-24 years old (8.0 per 100,000), 75-84 (12.8 per 100,000) and 85+ years old (15.0 per 100,000) [150]	Death rate fairly level since 2008	WB NPS HP2020
Suicide	9.3 deaths per 100,000 residents[151] 16,407 YPLL[152]	7% of high school students reported attempting suicide in the past year[153]	Lifetime costs for fatal and nonfatal self-inflicted injury are estimated at $878 million (WISQARS)	Death rate highest among: Whites (10.5 per 100,000); males (14.5 per 100,000); ages 45-54 (15.3 per 100,000)[154]	↓ in percent of high school students attempting suicide over last ten years.	NPS HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Child/Youth Injuries (ages 0-19 years)	4.3 unintentional injury deaths per 100,000 children/youth aged 0-19 years (Source: Massachusetts Deaths, 2012, Registry of Vital Records and Statistics, MDPH. Data prepared by the Injury Prevention and Control Program, MDPH. **2012 Crude Rate.**)	274.5 hospital stays and 10,774.4 ED visits per 100,000 children/youth associated with unintentional injury (Sources: MA Inpatient Hospital, Observation Stay and Emergency Department Discharge Databases, Center for Health Information and Analysis. Data prepared by the Injury Prevention and Control Program, MDPH. **FY2012 Crude Rates**.)	$279 million in acute care hospital charges in FY12. (Sources: MA Inpatient Hospital, Observation Stay and Emergency Department Discharge Databases, Center for Health Information and Analysis. Data prepared by the Injury Prevention and Control Program, MDPH. **FY2012 Crude Rates**.)	Hospital stays and ED visit rates are highest among black non-Hispanic children/youth (278.6 and 11,062 per 100,000 persons). (Sources: MA Inpatient Hospital, Observation Stay and Emergency Department Discharge Databases, Center for Health Information and Analysis. Data prepared by the Injury Prevention and Control Program, MDPH. **FY2012 Crude Rates**.)	No statistically significant trends in unintentional injury deaths, hospital stays or ED visits among children 0-19 years during the past five years.	

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Violence/ Homicide	3.0 homicide deaths per 100,000 residents[155] and 8,515 YPLL[156]	24.7 sexual assaults per 100,000 population[157] 298.1 aggravated assaults per 100,000 population[158] 18% of high school students reported being bullied at school in the last year[159]	Estimated $174 billion in medical care costs in U.S. due to firearm injuries and deaths[160] Estimates of the cost to the U.S. economy of Intimate Partner Violence (IPV) range from a low of $5.8 billion to a high of $67 billion (all in 2003 or earlier dollars)[161]	Death rate for homicides is highest among Black, non-Hispanic males (28.2 per 100,000), Hispanic males (10.1 per 100,000), and 15-24 year old males (14.2 per 100,000)[162] Similar pattern exists for non-fatal weapons-related injuries among youth ages 15-24: Rates were 674.1, 400.7, and 138.7 firearms and cut/pierce injuries per 100,000, respectively.[163] 31.7% of MA women, ages 18 and older and. 19.1% of MA men, ages 18 and older report ever having experienced IPV.[164] 20.1% of female MA residents, ages 18 and older vs. 4.6% of male MA residents, ages 18 and older report having experienced sexual violence at some time in their lives.[165] 15.1% MA high school girls and 7.1% of MA high school boys report having experienced dating violence at some time in their lives.[166] 13.4% MA high school girls and4.8% MA high school boys report having experienced sexual violence at some time in their lives.[167] IPV and SV are disproportionately experienced by those who identify as gay, lesbian, or bisexual, and by those with a disability. For example, in 2011: 32.7% of MA high school students who self-identified as gay, lesbian, or bisexual also reported having experienced sexual violence at some time in their lives,[168] as did 15.5% of MA high school students with disabilities.[169]	The homicide rates among Hispanic males, ages 15-24 has increased an average of 4.6% per year since 2002, while the homicide rate for non-Hispanic, Black males, ages 15-24 has declined by a non-statistically significant average of 0.71% per year and the overall homicide rate for males in this age-group has declined by a non-statistically significant average of 0.97% per year since 2002.[170] Slight decline in % of high school students who indicated being bullied since 2003[171]	MDPH SP NPS HP2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Occupational injuries	1.7 deaths per 100,000 over 16 for work related injuries[172]	3,200 injury/illness cases per 100,000 fulltime workers[173] 1.6 cases of injury per 100 fulltime workers that resulted in lost workdays[174]	Estimated $67 billion in U.S. in direct medical costs due to occupational injury /illness and $183 billion in indirect costs[175]	Work related injuries resulting in death highest among Hispanics (3.9 deaths per 100,000 fulltime workers)[176] Workplace injuries among teens resulting in ED visits are highest among Hispanics (2.9 per 100 fulltime workers) [177]	↓ in nonfatal work related injuries to teens and adults from 2000-2007 ↓ in cases of injury that resulted in lost workdays from 2000-2007	HP2020
Environmental Risk Factors and Health						
Ozone/ Outdoor air quality		Ozone air quality standard was exceeded 49 times in one year[178]		Highest rates are in Worcester and Hampshire Counties	Overall↑ in number of days standard was exceeded with very high rates specifically in 2001 and 2002	HP2020
Environmental tobacco smoke		37.9% of adults exposed to environmental tobacco smoke[179]		Exposure to ETS highest among Blacks (46.5%)[180]	Exposure to secondhand smoke among nonsmokers dramatically ↓ from 2002-2008	HP2020
Childhood lead poisoning		In 2013, 6,826 Massachusetts children had blood lead levels above the CDC reference value of 5 µg/dL.	$972 million in lost future earnings in MA due to lead-induced damage for a given cohort of five year olds[181]	Twenty-five communities in MA meet the definition of high-risk based on age of housing stock, income, and number of children with elevated blood lead levels.	Over the 2008-2013 period, the number of children 9-48 months in Massachusetts with elevated blood lead levels has been decreasing.	HP 2020
Screening for childhood blood lead levels		The average screening rate in the 25 Massachusetts high-risk communities for elevated blood lead levels was 80% in 2013.[182]		Twenty-five communities in MA meet the definition of high-risk based on age of housing stock, income, and number of children with elevated blood lead levels.	Over the 2003-2008 period, the screening rate in Massachusetts high-risk communities has remained unchanged at 80%.	HP 2020

	Mortality Rate or Years of Potential Life Lost (YPLL)	Incidence, Prevalence, or Hospitalization	Related Costs	Disparities and At-Risk Populations	Key Trends	Alignment with State or Nat'l Frameworks*
Health Care Access						
Health care access		• 1.9% of residents uninsured[183] • 4.4% of residents report not having health insurance[184] • 88.3% of adults report having a personal health care provider[185]		• Percent of residents who report not having health insurance highest among Hispanics (10.6%)[186] • Adults with a personal health care provider are lowest among Hispanics (75.7%) and those in the Boston regions (81.5%)[187]	• ↓ in percent of residents without health insurance • ↓ in percent of adults without a PHCP	MDPH SP HP2020

*State and National Focus Abbreviations: **PrevTrust** = Prevention and Wellness Trust, **MDPH SP=** Massachusetts Department of Public Health, 2012 Strategic Plan,**WB** = CDC's Winnable Battles, **NPS** = National Prevention Strategy, **HP2020** = Healthy People 2020

Appendix D: Routine Disease Surveillance

Routine infectious disease surveillance consists of the collection of multiple reports of disease events (including clinical laboratory results, clinical case reports, epidemiologic interviews, electronic health records, and vital records) to determine the incidence and prevalence of reportable infections and their related disease states. These reports come to MDPH directly through electronic laboratory reporting, submitted clinical case reports, from direct queries of electronic health records via MDPHnet, and from local health departments which investigate most reportable infections. Certain high-priority reports may initially be reported to MDPH by phone. Case data regarding Massachusetts residents may also come from other states and/or the US Centers for Disease Control and Prevention.

Based on these reports, state infectious disease epidemiologists engage in follow-up investigations and conduct structured interviews with affected individuals, their family members, health care providers, and with close contacts of cases to determine the nature of exposure, vaccination/treatment history, clinical status, and other details relevant to confirming a given case and determining risk to the public health. Nearly all infectious disease epidemiologic data from these sources is held and managed by the Massachusetts Virtual Epidemiologic Network (MAVEN), which sorts these data into prioritized workflows for follow-up by state and local public health. MAVEN is a secure, web-based disease surveillance and case management system that enables MDPH and local health departments to capture and transfer appropriate public health, laboratory, and clinical data. The system interfaces with the state Electronic Laboratory Reporting (ELR) system and MDPHnet, performs automatic notification of state and local health officials of any event requiring their attention, and replaces most paper-based methods of data exchange among MDPH and local health departments.

Appendix E: Sources

Measure	Topic	Indicator	Data Source, Year
Domain1: Active Living, Healthy Eating, and Tobacco-Free Living			
1.1	Consumption of fruits and vegetables	Adults 5+ servings	*MDPH BRFSS 2011*
		Adolescents (High School) 3+ servings	*MDPH YHS2013.*
		Adolescents (High School) 3+ servings	*MDPH YHS2013.*
		Children (Middle School) 3+ servings	*MDPH YHS2013.*
		Children (Middle School) 3+ servings	*MDPH YHS2013.*
1.2	Consumption of sugar-sweetened beverages	Adolescents (High School) 0-1 servings	*MDPH YHS 2013.*
		Children (Middle School) 0-1 servings	*MDPH YHS2013.*
1.3	Engaging in moderate physical activity	Adults (min/week)	*MDPH BRFSS 2011.*
		Adolescents (High School) (min/week)	*MDPH YHS2013.*
		Children (Middle School) (min/week)	*MDPH YHS2013.*
1.4	Leading tobacco-free lives	Adult smokers	*Behavioral Risk Factor Surveillance System (BRFSS), 2012*
		Adults with MassHealth Insurance	*Behavioral Risk Factor Surveillance System (BRFSS) 2012*
1.5		High School Tobacco Use	*Youth Risk Behavior Surveillance System (2013)*
1.6		Exposure to secondhand smoke	*Behavioral Risk Factor Surveillance System (BRFSS) (2012)*
Domain 2: Chronic Disease Prevention and Control			
2.1	Prostate-specific antigen (PSA) test	Men aged 40 years or older who talked to their health professional about the advantages	*BRFSS, 2011*
		Men aged 40 years or older who talked to their health professional about the disadvantages	*BRFSS, 2011*
2.2	Colorectal Cancer	Adults age 50-75 years who have had screening for colorectal cancer	*Massachusetts Health Quality Partners (MHQP)*
2.3	Hypertension	Adults with self-reported high blood pressure	*BRFSS, 2011*
		Adults with disabilities with self-reported high blood pressure	*BRFSS, 2011*
		African American adults with self-reported high blood pressure	*BRFSS, 2011*
		Adults with hypertension who have their hypertension in control	*Massachusetts Health Quality Partners (MHQP)*
2.4	Diabetes	Adult patients with diabetes who had an A1c value greater than 9.0%.	*Massachusetts Health Quality Partners (MHQP), PWTF data sources?*
2.5	Pediatric Asthma	At-Risk Rate of Pediatric Asthma Hospitalization Overall	*BRFSS, Hospital Discharge 2011*
		At-Risk Rate of Pediatric Asthma Hospitalization, White Non-Hispanic	*BRFSS, Hospital Discharge 2011*
		Ratio At-Risk Rate of Pediatric Asthma Hospitalization, Black Non-Hispanic	*BRFSS, Hospital Discharge 2011*

Measure	Topic	Indicator	Data Source, Year
		Ratio At-Risk Rate of Pediatric Asthma Hospitalization, Hispanic to At-risk rate for White Non-Hispanic	*BRFSS, Hospital Discharge 2011*
2.6	Obesity	Adults with a self-reported BMI ≥ 30	*BRFSS*
		Massachusetts public school students in grades 1, 4, 7 or 10 who were screened for BMI and had a BMI ≥ 30	*Body Mass Index Screening in Massachusetts Public School Districts*
Domain 3: Infectious Disease Prevention and Control			
3.1	Vaccine preventable disease and immunization rates	Annual pertussis cases	*MDPH BID Immunization Program 2012*
		Annual invasive pneumococcal disease in children <5 years	*MDPH BID Immunization Program 2012*
		Percentage of 19-35 month olds who receive recommended doses of DTaP, polio, MMR, Hib, hepatitis B, varicella, and pneumococcal vaccine (4:3:1:4:3:1:4 series)	*CDC National Immunization Survey 2012*
		MA residents > 6 months of age who receive an annual influenza vaccine	*CDC National Immunization Survey 2012 and MDPH BRFSS 2011`-2012*
		MA adults 18-49 years old with underlying conditions who receive annual influenza vaccine	*MDPH BRFSS 2011*
		MA adults 65 and older who receive annual influenza vaccine	*MDPH BRFSS 2011*
		Rate of complete HPV vaccination among MA females 13-17 years old	*CDC National Immunization Survey 2012*
		Flu vaccine rates among healthcare workers	*National Healthcare Safety Network (NHSN)*
3.2	Lyme disease	Lyme disease reported among children under the age of 19	*MDPH BID Epidemiology Program 2012*
3.3	Sexually transmitted infections	Chlamydia incidence among adults and adolescents	*MDPH BID STD Surveillance Program 2011.*
		Gonorrhea incidence	*MDPH BID STD Surveillance Program 2011.*
		Gonorrhea incidence among Blacks -	*MDPH BID STD Surveillance Program 2011.*
		Gonorrhea incidence among Hispanics/Latinos	*MDPH BID STD Surveillance Program 2011.*
		Syphilis incidence among men who have sex with men (MSM)	*MDPH BID STD Surveillance Program 2011.*
3.4	HIV Infections	Overall	*MDPH HIV/AIDS Surveillance Program 2012.*
		New HIV cases among men who have sex with men	*MDPH HIV/AIDS Surveillance Program 2012*
		Relative rate of new HIV infections among Black, non-Hispanic vs. White, Non-Hispanic	*MDPH BID HIV/AIDS Surveillance Program 2012*
		Relative rate of new HIV infections among Hispanic vs. White, Non-Hispanic	*MDPH BID HIV/AIDS Surveillance Program 2012*

Measure	Topic	Indicator	Data Source, Year
3.5	Hepatitis C virus (HCV)	Average time from diagnosis with HCV infection to death:	*MDPH BID Epidemiology Program*
3.6	Standard infection ratios (SIR) for CLABSI's, CAUTI's, SSI's, Clostridium Difficile infections, and MRSA bacteremia	Central line associated bloodstream infections (CLABSI) SIR	*National Healthcare Safety Network (NHSN), 2012*
		Vaginal hysterectomy surgical site infection SIR	*National Healthcare Safety Network (NHSN), 2012*
		Catheter-associated urinary tract infections (CAUTI)	*National Healthcare Safety Network (NHSN), 2012*
3.7	Salmonella and Campylobacter	Incidence of campylobacteriosis	*MDPH BID Epidemiology Program 2012*
		Incidence of salmonellosis	*MDPH BID Epidemiology Program2012*
Domain 4: Substance Abuse Prevention, Intervention, Treatment and Recovery			
4.1	Alcohol	High school youth who have tried alcohol for the first time before age 13 years	*CDC MMWR YRBS 2012. Data for 2011*
4.2	DPH/BSAS training for healthcare providers to incorporate screening and intervention for unhealthy substance use	Number of Health Care Providers trained annually	*MDPH/BSAS Quarterly reports from contracted training vendor*
4.3	Specified multiple provider episode (MPE) rate	Rate per 100,000 individuals who received at least one Schedule II and/or III prescription opioid from 4 or more different prescribers and 4 or more different pharmacies during the year. 4 or more different prescribers and 4 or more different pharmacies during the year is the multiple provider episode (MPE) threshold.	*MA ambulatory pharmacies and out-of-state pharmacies delivering to MA residents report dispensing data on all Schedule II – V prescriptions.*
4.4	Morphine milligram equivalent (MME)	Number of individuals who received combined opioid prescriptions with an average MME greater than 100 mg per day over the specified one year time period.	*MA ambulatory pharmacies and out-of-state pharmacies delivering to MA residents report dispensing data on all Schedule II – V prescriptions.*
	Strategic Prevention Framework (SPF)	BSAS-funded substance abuse prevention coalitions using the Strategic Prevention Framework (SPF)	*MDPH/BSAS Required Reports from contracted coalitions and MDPH contract management reports*
	Opioid addiction	Number of non-whites enrolled in medication assisted treatment in MDPH/BSAS-funded programs	*DPH/BSAS enrollment data*
Domain 5: Injury, Suicide and Violence Prevention			
5.1	Poisonings	Age adjusted rate of unintentional and undetermined intent poisoning deaths	*Registry of Vital Records and Statistics, MDPH*
		Age adjusted rate of unintentional and undetermined intent opioid poisoning deaths	*Registry of Vital Records and Statistics, MDPH*
5.2	Fall deaths	Age-adjusted unintentional fall death rate ages 65+	*Registry of Vital Records and Statistics*

Measure	Topic	Indicator	Data Source, Year
5.3	Motor vehicle traffic deaths	Age-adjusted unintentional motor vehicle traffic death rate	*Registry of Vital Records and Statistics, MDPH*
5.4	Unintentional injury deaths	Unintentional injury death rate among residents 0-19 years	*Registry of Vital Records and Statistics, MDPH*
5.5	Suicide	Age adjusted rate of suicide	*Registry of Vital Records and Statistics*
		Ratio of suicides among MA males ages 60+ to all MA residents	*Registry of Vital Records and Statistics*
5.6	Work-related injuries	Non-fatal work-related injuries resulting in medical treatment or restricted time, private sector workers	*BLS Annual Survey of Occupational Injuries and Illnesses*
		Work-related injuries resulting in paid workers compensation claims among employees of Executive Office Agencies	*MA Human Resource Division, 2013*
		Emergency department visits for work-related injuries by workers ages < 24	*MA Emergency Department Database, Center for Health Information and Analysis*
		Disparity in rates of hospitalization for work-related injuries for Hispanics and Non-Hispanic Whites	*MA Inpatient Hospital Discharge Database, Center for Health Information and Analysis*
5.7	Sexual and Domestic Violence	Prevalence of past year sexual violence victimization experiences among MA women	*Massachusetts Behavioral Risk Factor Surveillance System*
		Prevalence of lifetime dating violence victimization experiences among female MA high school students	*Massachusetts High School Youth Health Survey*
		Prevalence of lifetime dating violence victimization experiences among male MA high school students	*Massachusetts High School Youth Health Survey –*
		Prevalence of lifetime sexual violence victimization among LGB MA high school students	*Youth Risk Behavior Survey and Youth Health Survey*
		Prevalence of lifetime sexual violence victimization among MA high school students with disabilities	*Youth Health Survey*
5.8	Fatal violence among youth	Homicide rate per 100,000 among MA male youth, ages 15 to 24	*Registry of Vital Records and census data* **Age and Sex specific rates per 100,000; postcensal annual estimates of MA population by race/ethnicity, sex, and age group*
		Homicide rate per 100,000 among MA Black, Non-Hispanic male youth, ages 15 to 24	*Registry of Vital Records and census* **Age and Sex specific rates per 100,000; postcensal annual estimates of MA population by race/ethnicity, sex, and age group*

Measure	Topic	Indicator	Data Source, Year
		Two-year homicide rate per 100,000 among MA Hispanic male youth, ages 15 to 24	*Registry of Vital Records and census* **Age and Sex specific rates per 100,000; postcensal annual estimates of MA population by race/ethnicity, sex, and age group*
		Prevalence of carrying a weapon in the past 30 days among MA high school boys	*Youth Health Survey*
		Prevalence of carrying a weapon in the past 30 days among MA high school girls	*Youth Health Survey*
5.9	Hospital-acquired pressure ulcers	Stage +2 hospital acquired pressure ulcers	*SRE Annual Report: In the general hospitalized population the rate of Stage 2 or greater pressure ulcer is between 2-3%)*
5.10	Falls in acute and non-acute care hospitals	Falls with serious injury or death	*Annual SRE Report*
5.11	Wrong site or side procedures and surgeries	Wrong site or side procedures and surgeries	*2013 Annual SRE report (Need to ascertain whether it is possible to obtain the number of surgeries and procedures from all three groups of facilities so could report as a rate.)*
Domain 6: Maternal, Child, and Family Health Promotion			
6.1	Teen birth rate	MA Women ages 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
		Holyoke, MA Women ages 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
		Springfield, MA Women ages 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
		Lawrence, MA Women ages 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
		New Bedford, MA Women ages 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
		Worcester, MA Women ages 15-19	*MDPH Vital Statistics. Data for 2012. Population estimates from DMOA*
6.2	Low birth weight	Percentage of infants born weighing less than 2,500 grams from RVRS data	*MDPH Vital Statistics. Data for 2012.*
		Percentage of infants born prematurely	*MDPH Vital Statistics. Data for 2012*
		Black, non-Hispanic Infants born weighing less than 2,500 grams.	*MDPH Vital Statistics. Data for 2012.*
6.3	Breast feeding	Breastfed at 8 weeks	*MA PRAMS Surveillance Report 2013. Data for 2009/2010.*
		Exclusive breastfeeding at hospital discharge	*MDPH Vital Statistics. Data for 2012.*
		Number of Baby-Friendly Hospitals	*Baby-Friendly USA data*

Measure	Topic	Indicator	Data Source, Year
6.4	Teeth cleaning before and during pregnancy	Women who received teeth cleaning in the 12 months prior to pregnancy	*MA PRAMS Surveillance Report 2013. Data for 2009/2010.*
		Women who received teeth cleaning during pregnancy	*MA PRAMS Surveillance Report 2013. Data for 2009/2010.*
6.5	Children with medical home	Children & youth aged 0 – 17	*National Survey of Children's Health (NSCH) / 2011/2012*
		Children & youth with special health care needs	*National Survey of Children's Health (NSCH).(2011/12)*
6.6	Measuring positive early childhood health and development	Development of robust measure or measures	*To be Identified and / or developed*
Domain 7: Environmental Risk Factors and Health			
7.1	Blood lead level screening	Children 9-48 months who received screening?	*Childhood Lead Poisoning Prevention database, (2013)*
7.2	Blood lead level	Persons 16 + with blood lead levels of > 25 ug/dL	*Numerator Source: Massachusetts Occupational Lead Poisoning Registry Denominator Source: BLS Current Population Survey*
7.3	Indoor environmental quality	Average time between Division of Capital Asset Management and Maintenance (DCAMM) assessment and inspection	*BEH IAQ database*
7.4	Poor housing condition complaints/increase number of trained local inspectors	Trained inspectors	*Local Public Health Institute of Massachusetts (average number trained 2011-2013)*
7.5	Foodborne illness	Local health authorities completing two inspections per food establishment annually according to federal performance standard	*Annual report to the legislator on status of local health inspections of food establishments(2012)*
7.6	Capacity for climate change/adaptation/ number of local health officials trained	Local health/municipal officials trained	*Attendance list of training sessions (April 30, 2013 Climate Variability and Health Impact Assessment Symposium)*
	Local capacity to respond to environmental health inquiries by use of the Environmental Public Health Tracking (EPHT) network	MHOA conference registrants	*MHOA Annual Conference Registration database (number registered at 2013 annual MHOA conference)*

Appendix F: List of Acronyms

Acronyms

Advisory Committee on Immunization Practices (ACIP)

Affordable Care Act (ACA)

American Academy of Pediatrics (AAP)

American Association of Retired Persons (AARP)

American Community Survey (ACS)

American Congress of Obstetricians and Gynecologists (ACOG)

American Dental Association (ADA)

American Diabetes Association (ADA)

American Society of Safety Engineers (ASSE)

Amyotrophic lateral sclerosis (ALS) – Lou Gehrig's disease

Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN)

Attorney General's Office (AGO)

Baby Friendly Hospital Initiative (BFHI)

Behavioral Risk Factor Surveillance System (BRFSS)

Better Oral Health for MA Coalition (BOHMAC)

Blood Pressure (BP)

Body Mass Index (BMI)

Brain Injury Association of Massachusetts (BIA-MA)

Bureau of Labor Statistics (BLS)

Bureau of Substance Abuse Services (BSAS)

Cardiovascular Disease (CVD)

Catheter-associated urinary tract infection (CAUTI)

Center for Health Information and Analysis (CHIA)

Centers for Disease Control and Prevention (CDC)

Central line-associated bloodstream Infection (CLABSI)

Children & Youth With Special Health Care Needs (CYSHCN)

Children's Behavioral Health Initiative (CBHI)

Chronic obstructive pulmonary disease (COPD)

Community Based Organization (CBO)

Community Health Worker (CHW)

Continuing Medical Education (CME)

Culturally and Linguistically Appropriate Services (CLAS) Standards

Department of Conservation and Recreation (DCR)

Department of Developmental Services (DDS)

Department of Early Education and Care (EEC)

Department of Elementary and Secondary Education (DESE)

Department of Higher Education (DHE)

Department of Public Health (DPH)

Department of Transportation (DOT)

Diabetes self-management education (DSME)

Disabled Persons Protection Commission (DPPC)

Division of Local Services (DLS)

Department of Mental Health (DMH)

Domestic Violence (DV)

Drug Recognition Expert (DRE)

Electronic Benefit Transfer (EBT)

Electronic Health Records (EHR)

Electronic Invoice Presentment & Payment (EIPP)

Emergency Department (ED)

Environmental Public Health Tracking (EPHT)

Executive Office of Environmental Affairs (EOEA)

Executive Office of Health and Human Services (EOHHS)

Executive Office of Public Safety and Security (EOPSS)

Food and Drug Administration (FDA)

Food service establishment (FSE)

Gay, Lesbian, Bi-Sexual, Transgender (GLBT)

Harvard School of Public Health (HSPH)

Hazard Analysis and Critical Control Points (HACCP)

Health and Homeland Alert Network (HHAN)

Health Information Technology (HIT)

Health Resources in Action (HRiA)

Healthcare Associated Infections (HAI's)

Heating, ventilation, and air conditioning (HVAC)

Hepatitis C virus (HCV)

Human immunodeficiency virus (HIV)

Human papillomavirus (HPV)

Individual Education Plan (IEP)

Information Technology (IT)

Institutional Review Board (IRB)

Integrated Pest Management (IPM)

Integrated Surveillance Intelligence System (ISIS)

Intimate Partner Violence (IPV)

Local Educational Agencies (LEA)

Low Birthweight Infants (LBW) (weighing less than 2,500 grams or 5.5 pounds)

Massachusetts Association of Health Plans (MAHP)

Massachusetts Bay Transit Authority (MBTA)

Massachusetts Child Psychiatry Access Project (MCPAP)

Massachusetts Department of Agricultural Resources (MDAR)

Massachusetts Department of Public Health (MDPH)

Massachusetts Health Quality Partners (MHQP)

Massachusetts Home Visiting Initiative (MHVI)

Massachusetts Hospital Association (MHA)

Massachusetts Immunization Information System (MIIS)

Massachusetts Perinatal Quality Collaborative (MPQC)

Massachusetts Virtual Epidemiologic Network (MAVEN)

Men who have sex with men (MSM)

Methicillin-resistant Staphylococcus aureus (MRSA)

Morbidity and Mortality Weekly Report (MMWR)

Massachusetts Adolescent Sex Offender Coalition (MASOC)

Massachusetts Association for the Treatment of Sexual Abusers (MATSA)

National Health and Nutrition Examination Survey (NHANES)

National Highway Traffic Safety Administration (NHTSA)

National Quality Forum (NQF)

Network of Employers for Traffic Safety (NETS)

Neonatal abstinence syndrome (NAS)

Occupational Safety and Health Administration (OSHA)

Operational Services Division (OSD)

Parent Teacher Associations (PTA)

Parent Teacher Organizations PTOs

Particulate matter (PM)

Post-Partum Depression (PPD)

Prenatal Care (PNC)

Preterm Birth (PTB)

Prevention and Wellness Trust Fund (PWTF)

Prostate-Specific Antigen (PSA)

Quality Improvement (QI)

Renovation, Repair and Painting (RRP) Program

Screening, Brief Intervention, and Referral to Treatment (SBIRT)

Seal, Educate, Advocate for Learning Program (SEAL)

Serious persistent mental illness (SPMI)

Sexual assault prevention and survivor services (SAPSS)

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

Standard infection ratios (SIR)

State Health Improvement Plan (SHIP)

Subject Matter Expert (SME)

Substance Abuse and Mental Health Services Administration (SAMSHA)

Sudden Infant Death Syndrome (SIDS)

Sudden Unexpected Infant Death (SUID)

Sugar sweetened beverages (SSBs)

Supplemental Nutrition Assistance Program (SNAP)

Support Safe Routes to School (SRTS)

Surgical Site Infection (SSI)

Toxic Use Reduction Institute (TURI)

Transit-Oriented Development (TOD)

Traumatic Brain Injury (TBI)

Tuberculosis (TB)

Vibrio Parahaemolyticus (VP)

Years of Potential Life Lost (YPLL)

Young Men's Christian Association (YMCA)

Young Women's Christian Association (YWCA)

Youth Health Survey (YHS)

Youth Risk Behavior Surveillance System (YRBSS)

Youth Risk Behavior Survey (YRBS)

Appendix G: Prioritization and Decision-Making Tools

SHIP Coalition Prioritization and Decision-Making

Step 1: Rate Key Health Topics using Criteria						Step 2: Rank Health Topics
Instructions: Rate each health topic based on how well it meets each of the criteria provided 1=low, 2=medium, 3=high, 4=very high. Add your four ratings for each health topic and enter the total in the Total Column.						

Step 1 table

Key Health Topics:	RELEVANCE — How Severe Is It? (- Burden (magnitude and severity; economic cost, urgency) of the problem - Community concern - Focus on equity and accessibility)	APPROPRIATENESS — Where do We Have Leverage? (- Avoiding duplication - Builds on or enhances current work - Describing unique role of public health - Ethical and moral issues - Human rights issues - Legal aspects - Political and social acceptability - Public attitudes and values)	IMPACT — What Will We Get Out of It? (- Effectiveness - Coverage - Can move the needle and demonstrate measureable outcomes - Proven strategies to address multiple wins (e.g., MRF's) - Can address disparities)	FEASIBILITY — Can We do It? (- Knowledge base in intervention and efficacy (MRF's) - Community capacity - Technical capacity - Economic capacity - Political capacity/will - Socio-cultural aspects - Ethical aspects - Can identify easy short-term wins)	Total Rating	Rank Order of Health Topics (use each number only once):
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						
i.						

Selection Criteria (header spanning RELEVANCE, APPROPRIATENESS, IMPACT, FEASIBILITY)

Step 2 instructions: Referring to your Total Rating numbers, rank order each of the Health Topics with "1" being the Health Topic with the highest total score, "2" being the Health Topic with the second highest total score, etc.

In the case of identical totals, use your best judgment to assign a unique rank number to each health issue to break the tie.

Step 1: Rate Key Health Systems using Criteria

Instructions: Rate each health systems based on how well it meets each of the criteria provided
1=low, **2**=medium, **3**=high, **4**=very high
Add your four ratings for each health systems and enter the total in the Total Column.

Step 2: Rank Health Systems

Key Health Systems:	Selection Criteria				Total Rating	Rank Order of Health Systems (use each number only once):
	RELEVANCE *How Severe Is It?* - Burden (magnitude and severity; economic cost, urgency) of the problem - Community concern - Focus on equity and accessibility	**APPROPRIATENESS** *Where do We Have Leverage?* - Avoiding duplication - Builds on or enhances current work - Describing unique role of public health - Ethical and moral issues - Human rights issues - Legal aspects - Political and social acceptability - Public attitudes and values	**IMPACT** *What Will We Get Out of It?* - Effectiveness - Coverage - Can move the needle and demonstrate measureable outcomes - Proven strategies to address multiple wins (e.g., MRF's) - Can address disparities	**FEASIBILITY** *Can We do It?* - Knowledge base in intervention and efficacy (MRF's) - Community capacity - Technical capacity - Economic capacity - Political capacity/will - Socio-cultural aspects - Ethical aspects - Can identify easy short-term wins		Referring to your Total Rating numbers, rank order each of the Heath Systems with "1" being the Health Systems with the highest total score, "2" being the Health System with the second highest total score, etc. In the case of identical totals, use your best judgment to assign a unique rank number to each health issue to break the tie.
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						
i.						

Appendix H: How You Can Use This Plan

Individuals and families

- Understand and promote priority health issues among family members and friends

- Create opportunities to educate others and take action at schools, churches, workplaces, etc., to support the recommendations in this plan

Community, Nonprofit, Faith-based Organizations:

- Understand and promote priority health issues among the community members and stakeholders you serve

- Talk with community members about the importance of wellness and connect them with resources

- Align activities and outreach efforts with health improvement needs and recommendations in this report

- Advocate for changes that improve health with policy makers and legislative officials

Government (local, state)

- Understand and promote priority health issues in the community

- Identify barriers to health in the community and make plans for action

- Invest in programs, services, and environmental, systems and policy changes that will support the health needs of the community

Business/employers

- Understand priority health issues and recommendations in this plan and how they apply to your workforce

- Adapt your work environment and enhance your benefits plans to protect and promote employee health

- Educate your management team and employees about the link between employee health and work productivity

- Negotiate with benefits providers to provide additional services that address improvement in the outcomes associated with the priority health areas (i.e., healthy housing evaluation services; fitness benefits; wellness programming; etc.)

Healthcare Systems

- Plan for Non-Profit Hospital Community Benefits initiatives

- Incorporate recommendations into organizational strategic planning

- Lead your organization and the health care industry in responding to the health needs of the community

Health Care Professionals

- Identify important health issues and barriers that exist for your clients and use recommended practices to make changes

- Share the information in this plan with your colleagues

- Lead your peers in advocating for actions that will improve the health of the community

Health Insurers

- Educate employers and other health insurance purchasers about the benefits of preventive health care and responding specifically to the health needs of the community

- Implement preventive health care programs and/or incentives into insurance policies

Education

- Understand and promote priority health issues and recommendations in this plan and incorporate them as educational lessons in health, science, social studies, and other subjects, or when designing research studies or community service projects within the community

- Create opportunities to take action at schools to support the recommendations in this plan that impact students, faculty, staff, and parents.

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