COMMUNITY HEALTH NEEDS ASSESSMENT

Beth Israel Lahey Health

Beth Israel Deaconess Medical Center

2019

Executive Summary
Background, Purpose, and Approach

Beth Israel Deaconess Medical Center (BIDMC) is one of the nation's preeminent academic medical centers and is nationally recognized for its world-class clinical expertise, education and research. BIDMC is part of the newly formed Beth Israel Lahey Health (BILH) - a system of academic medical centers, teaching hospitals, community hospitals, and specialty hospitals that employ more than 4,000 physicians and 35,000 staff members combined. BIDMC is one of BILH's premier institutions with 673 licensed beds and over 1,200 active physicians. BIDMC is also a Level 1 trauma center with a full range of medical/surgical, critical care, OB/GYN, and emergency services, and an extensive network of primary care and outpatient specialty care practices. BIDMC prides itself on its ability to combine exceptional and compassionate patient care with advanced medical knowledge, research, and technology in ways that allow it to achieve the best outcomes for its patients.

In addition to its commitment to clinical excellence, BIDMC is committed to being an active partner and collaborator with the communities it serves. This Community Health Needs Assessment (CHNA) and the associated Implementation Strategy (IS) were completed in close collaboration with BIDMC's staff, dozens of health and social service partners, and the community at-large. In their entirety, the assessment efforts engaged thousands of community residents, as well as a wide range of other stakeholders, including service providers, community advocates, Commonwealth and local public officials, faith leaders, and representatives from community-based organizations. The process that was applied to conduct the CHNA and develop the IS exemplifies the spirit of collaboration and community engagement that is such a vital part of BIDMC's mission.

This report is an integral part of BIDMC's population health and community engagement efforts. It provides information that is used to make sure that BIDMC's services and programs are appropriately focused, are delivered in ways that are responsive to those in its Community Benefits Service Area (CBSA), and are conducted to address unmet community needs. This assessment and the associated prioritization and planning processes also allow BIDMC to strengthen its community partnerships. Finally, the CHNA and the IS allow BIDMC to meet its Commonwealth and Federal Community Benefits requirements per the Massachusetts Attorney General's Office (MA AGO) and the Federal Internal Revenue Service (IRS) as part of the Affordable Care Act.

Community Benefits Service Area & Community Benefits Priorities

In addition to the Medical Center in the Longwood area of Boston, BIDMC operates licensed multi-specialty outpatient facilities in Chelsea, Lexington, and Chestnut Hill, as well as a cancer center in Needham and a pain center in Brookline. BIDMC also operates a licensed health center in Bowdoin/Geneva and has strong, long-standing partnerships with an additional four Boston Federally Qualified Health Centers (See Figure Below) within its Community Benefits Service Area (CBSA).

The communities in which these facilities operate define BIDMC's CBSA and all of the communities listed above were included in the assessment. In recognition of the considerable health disparities that exist in some communities, BIDMC focuses the bulk of its community benefits resources on improving the health status of low income and underserved populations living in the city of Chelsea and the Boston

Figure 1: BIDMC Community Benefits Service Area (CBSA)
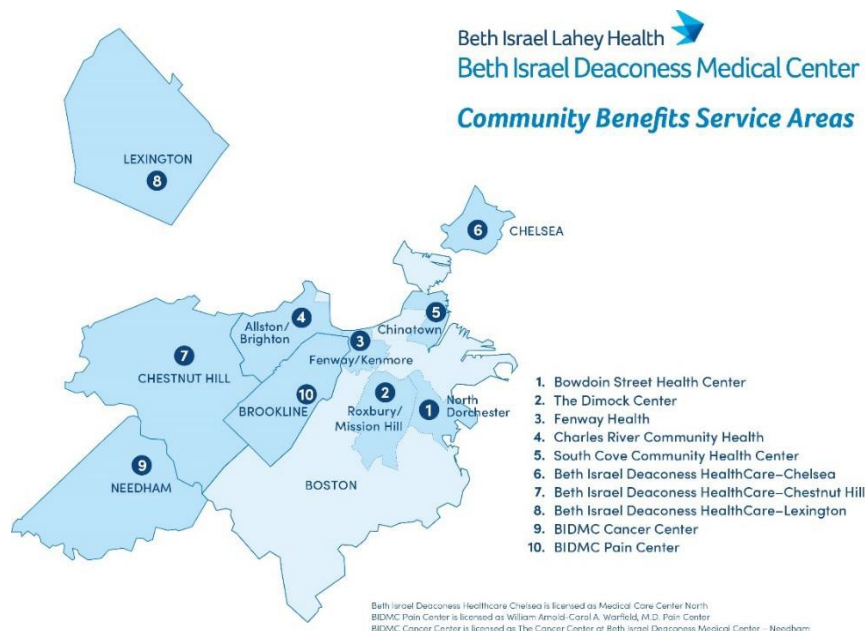
neighborhoods of Allston/Brighton, Bowdoin/Geneva, Chinatown, Fenway/Kenmore, and Roxbury/Mission Hill. While there are certainly segments of the populations in Brookline, Chestnut Hill, Lexington, and Needham that are vulnerable and underserved, the greatest disparities exist in Chelsea and Boston. In order to maximize the impact of its community benefits resources, BIDMC's Community Benefits Committee (CBC) voted to prioritize and focus BIDMC's attention on the more urban, high-need communities in BIDMC's CBSA.

The population segments and community health priorities that have been prioritized by the CHNA, as well as the core elements of BIDMC's community health improvement response are discussed in summary below, and in greater detail in the full CHNA report.

Approach and Methods

In conducting this assessment and planning process, it would be difficult to overstate BIDMC's commitment to community engagement and a robust, collaborative, transparent, and objective process. Rather than one-single assessment, BIDMC's Community Benefits staff dedicated countless hours of their time and other resources to participate in and gather information from a series of three concurrent and comprehensive assessments that were conducted by organizations or collectives of organizations throughout Boston and Chelsea. BIDMC also integrated the extensive community engagement and strategic planning work that BIDMC is conducting as part of its Massachusetts Determination of Need New Inpatient Building Community-based Health Initiative (CHI). Involvement in these four efforts allowed BIDMC to leverage resources and create a robust and inclusive CHNA and IS process.

In October of 2019, BIDMC hired John Snow, Inc. (JSI), a public health consulting firm based in Boston, to integrate the information gathered across these concurrent assessments and augment the information gathered where appropriate. BIDMC worked with JSI to ensure that the final BIDMC CHNA engaged the necessary community constituents, incorporated comprehensive quantitative and qualitative information across its entire CBSA, and fulfilled Commonwealth and Federal Community Benefits requirements. A more detailed summary of the approach and methods that were applied across all

segments of BIDMC's CHNA is included in the full body of this report. More extensive information is available in Appendix A.

Key Health-Related Findings

This section summarizes the key health-related findings that were identified after a comprehensive review of all the quantitative and qualitative information that was collected across all of BIDMC's assessment efforts.

<u>Social Determinants and Health</u>

- **Social Determinants of Health (e.g., economic stability, education, and community/social context) Continue to Have a Massive Impact on Many Segments of the Population.** The dominant theme from the assessment's key informant interviews, survey, focus groups and community forums was the continued impact that the underlying social determinants of health are having on the CBSA's low income, underserved, diverse population cohorts. More specifically, determinants such as poverty, employment opportunities, housing, violence, transportation, racial segregation, literacy, provider linguistic/cultural competency, social support, and community integration limit many people's ability to care for their own and/or their families' health.

- **Disparities in Health Outcomes Exist in BIDMC's CBSA by Race/Ethnicity, Foreign Born Status, Income, and Language:** There are major health disparities for residents living in BIDMC's CBSA. This is particularly true for racially/ethnically diverse, foreign born, low income, and non-English speaking residents living in Chelsea and the Boston neighborhoods of Allston/Brighton, Bowdoin/Geneva, Chinatown, Fenway/Kenmore, and Roxbury/Mission Hill. The impact of racism, barriers to care, and disparities in health outcomes that these populations face are widely documented in the literature and confirmed by the data captured across all of BIDMC CHNA components.

    It is crucial that these disparities be addressed and, to this end, BIDMC's Implementation Strategy (IS) continues to include a myriad of programs, strategic interventions, and services that are carefully targeted to address these disparities. However, it is critical to note that there is a multitude of individual, community and societal factors that work together to create these inequities. The underlying issue is not only race/ethnicity, racism, income, or language but rather a broad array of interrelated social issues including economic opportunity, education, crime, transportation, and community cohesion.

<u>Chronic / Complex Conditions and their Risk Factors</u>

- **High Rates of Chronic and Acute Physical Health Conditions (e.g., heart disease, hypertension, cancer, and asthma).** The assessment's quantitative data clearly shows that many communities in BIDMC's CBSA have high rates for many of the leading physical health conditions (e.g., heart disease, hypertension, cancer, and asthma). In many communities, these rates are statistically higher than Commonwealth rates, indicating a particularly significant problem. However, even for those communities where the rates are not statistically higher, these conditions are still the leading causes of premature death.

- **Limited Access to Cancer Screening for Racial/Ethnic Diversity and Other At-risk Populations.** Many of the communities that are part of BIDMC's CBSA have high cancer mortality rates. This is particularly true for certain cancers in specific communities in specific Boston neighborhoods, such as Roxbury, Dorchester, and Chinatown that have a high proportion of racial/ethnic diversity. At the root of addressing high mortality is screening, early detection and access to timely treatment.

- **High Rates of the Leading Health Risk Factors (e.g., Lack of Nutritional Food and Physical Activity, Alcohol/Illicit Drug Use, and Tobacco Use).** One of the leading findings from the assessment is that many communities and/or population segments in BIDMC's CBSA have high rates of chronic physical and behavioral health conditions. In some people, these conditions have underlying genetic roots that are hard to counter. However, for most people these conditions are widely considered preventable or manageable. Addressing the leading risk factors is at the root of a sound chronic disease prevention and management strategy.

Access to Care

- **Limited Access to Primary Care Medical, Medical Specialty, Behavioral Health, and Oral Health Care Services for Low Income, Foreign Born, those covered by Medicaid, Uninsured, and Other Vulnerable Populations Facing Health Care Disparities and Barriers to Care.** Despite the fact that 1) Massachusetts has one of highest rates of health insurance and 2) the communities that make up BIDMC's CBSA have strong, robust safety net systems, there are still substantial numbers of low income, Medicaid covered, uninsured, and otherwise vulnerable individuals who face health disparities and are not engaged in essential medical, behavioral, and oral health services. Efforts need to be made to expand access, reduce barriers to care, and improve the quality of primary care medical, medical specialty, behavioral health, and oral health services.

- **Barriers to Access and Disparities in Health Outcomes Continue to Challenge Three Special Populations (Infants/Mothers/Fathers, Frail Older Adults, and Lesbian, Gay, Bi-sexual, Transgender, and Queer (LGBTQ) Populations.** Based on information gathered primarily from the interviews and community forums, the assessment identified a number of special populations that face barriers to care and disparities in access. More specifically, infants/mothers/fathers, frail older adults, and the lesbian, gay, bi-sexual, transgender, and queer (LGBTQ) populations face disparities in access and outcome and are particularly at-risk. If these disparities are going to be addressed then care needs to be taken to tailor identification/screening and preventive services as well as acute and chronic disease management services for these special populations.

Mental Health and Substance Use

- **High Rates of Substance Use (e.g., Alcohol, Prescription Drug/Opioids, Marijuana) and Mental Health Issues (e.g., Depression, Anxiety, and Stress).** The impact of social determinants was the lead finding, but a close second was the profound impact of behavioral health issues (i.e., substance use and mental health) on individuals, families and communities in every geographic region and every population segment in BIDMC's CBSA. Depression/anxiety, suicide, alcohol use, opioid and prescription drug use, and marijuana use are major health issues and are having a significant impact

on the population as well as a burden on the service system. The fact that physical and behavioral health are so intertwined compounds the impact of these issues. Of particular concern are the increasing rates of opioid use and the impacts of trauma.

- **Limited Access to Behavioral Health Services, Particularly for Low Income, Medicaid Covered, Uninsured, Foreign Born, Non-English speakers, and those with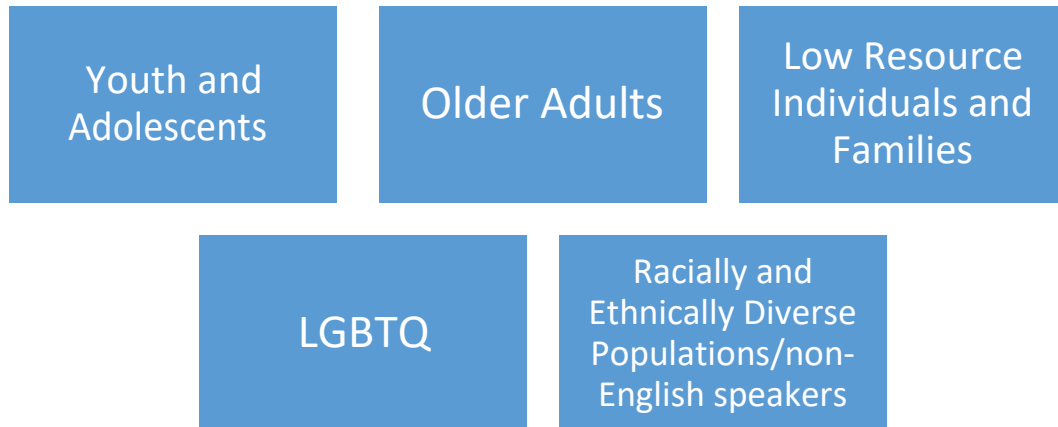 Complex/Multi-faceted Issues.** Despite the burden of mental health and substance use on all segments of the population, there is an extremely limited service system available to meet the needs that exist for those with mild to moderate episodic issues or those with more serious and complex, chronic conditions. Efforts need to be made to expand access, reduce barriers to care (including stigma), and improve the quality of primary care and specialized behavioral health services.

Priority Populations

BIDMC is committed to improving the health status and well-being of all residents living throughout its CBSA. However, in recognition of the considerable health disparities that exist in some communities, BIDMC focuses the bulk of its community benefits resources on improving the health status of low income and underserved populations living in the city of Chelsea and the Boston neighborhoods of Allston/Brighton, Bowdoin/Geneva, Chinatown, Fenway/Kenmore, and Roxbury/Mission Hill. While there are certainly segments of the populations in Brookline, Chestnut Hill, Lexington, and Needham that are vulnerable and underserved, the greatest disparities exist in Chelsea and Boston. In order to maximize the impact of its community benefits resources, BIDMC's CBC voted to prioritize and focus BIDMC's attention on the more urban, high-need communities in BIDMC's CBSA.

Based on the findings from the breadth of BIDMC's assessment activities, further efforts were made to prioritize certain population segments by race/ethnicity, socio-economic status, and other factors. More specifically, the CBC and the Community Benefits Senior Leadership Team (CBSLT) voted to prioritize youth and adolescents, older adults, low-resource individuals and families, LGBTQ populations, racially/ethnically diverse populations, and limited-English speakers.

Youth and Adolescents	Older Adults	Low Resource Individuals and Families

LGBTQ	Racially and Ethnically Diverse Populations/non-English speakers

Community Health Priorities

BIDMC's CHNA is a population-based assessment. The goal was to engage the community and compile quantitative and qualitative information to identify the leading health-related issues affecting individuals throughout the CBSA, including social determinants of health, service gaps, and barriers to care. The priorities that have been identified have been framed broadly to ensure that the full breadth of unmet needs and community health issues are recognized. These priorities were identified through an integrated and thorough review of all of the quantitative and qualitative information captured across all of the components of BIDMC's CHNA. The priorities have been identified to maximize impact, reduce disparities, and promote collaboration and cross-sector partnership.

During the later stages of the CHNA process, significant efforts were made to vet the priority issues with leadership and the community-at large, through meetings with the CBC and the CBSLT. Based on the findings from the breadth of BIDMC's CHNA activities, the CBC and the CBSLT voted to prioritize: 1) Social determinants of health, 2) Chronic/complex conditions and their risk factors, 3) Access to care, and 4) Mental health and substance use.

BIDMC Priority Areas 2020-2022

Social Determinants of Health	Chronic/Complex Conditions and Risk Factors	Access to Care	Mental Health and Substance Use

It is important to note that there are community health needs that were identified by BIDMC's assessment that, due to the limited burden that these issues present and/or the feasibility of having an impact in the short- or long-term on these issues, were not prioritized for investment. Namely, transportation and education were identified as community needs but these issues were deemed by the CBC and the CBSLT to be outside of BIDMC's primary sphere of influence and have opted to allow others

in its CBSA, the Greater Boston region, and the Commonwealth to focus on these issues. This is not to say that BIDMC will not support efforts in these areas. BIDMC remains open and willing to work with hospitals across Beth Israel Lahey Health's network, with COBTH, and other public and private partners to address these issues, particularly as part of a broad, strong collaborative.

The community health priorities that have been prioritized by the CHNA in the figure above are described in detail below. The goals, objectives and strategic intentions on which BIDMC will focus are included in BIDMC's Implementation Strategy in Appendix F.

Summary Implementation Strategy

The following outlines BIDMC's goals for addressing the priority populations and community health priorities identified above.

Priority Area 1: Social Determinants of Health
Goal 1: Increase Physical Activity and Healthy Eating
Goal 2: Promote Violence Prevention (Safe Neighborhoods and Community Cohesion)
Goal 3: Promote Affordable Housing
Goal 4: Promote Home Ownership
Goal 5: Support Workforce Development and Creation of Employment Opportunities
Goal 6: Promote Environmental Sustainability

Priority Area 2: Chronic/Complex Conditions and their Risk Factors
Goal 1: Improve Chronic Disease Management
Goal 2: Reduce Cancer Disparities (access to screening and treatment)
Goal 3: Support Older Adults to Age in Place

Priority Area 3: Access to Care
Goal 1: Increase Access to Quality Medical Services, Including Primary Care, OB/GYN, and Specialty Care, as well as Urgent, Emergent, and Trauma Care
Goal 2: Increase Access to Quality Oral Health Services
Goal 3: Promote Equitable Care and Support for those who face cultural and linguistic barriers
Goal 4: Promote Greater Health Equity and Reduce Disparities in Access for LGBTQ Populations

Priority Area 4: Behavioral Health (Mental Health and Substance Use)
Goal 1: Increase Access to Quality Mental Health Care and Substance Use Services
Goal 2: Reduce burden of opioid use

Acknowledgements

This report is the culmination of nearly a year of work, involving thousands of community residents, service providers, community advocates, Commonwealth and local public officials, and staff throughout BIDMC, its affiliates, and its community partners. While it was not possible for the assessment to involve all residents and community stakeholders, there were enormous efforts made to ensure that all segments of the community had the opportunity to participate, particularly those that are hard-to-reach and often left out of these types of assessments. BIDMC, including the BIDMC CBC who oversaw this entire process, would like to extend its sincere appreciation to everyone who invested their time, effort, and expertise to ensure the development of the Medical Center's Community Health Needs Assessment (CHNA) and its Community Health Implementation Strategy (IS).

BIDMC would like to extend its special thanks to the Steering Committee of the Boston Community Health Needs Assessment (CHNA)-Community Health Improvement Plan (CHIP) Collaborative (Boston CHNA-CHIP Collaborative). This collaborative of Boston Area teaching hospitals and medical centers, community health centers, the Boston Public Health Commission, community based organizations and residents hired Health Resources in Action (HRiA) to support this effort. HRiA spent countless hours working with Boston CHNA-CHIP Collaborative to create a robust, inclusive, collaborative assessment that involves all of the leading public health, community health, and health care organizations in the City of Boston. In particular, thanks are due to Monica Valdes Lupi, Executive Director of the Boston Public Health Commission, and her staff for providing data, time, and other resources. Per Commonwealth and Federal requirements, local health departments need to be involved in CHNA activities and the Boston Public Health Commission more than fulfilled this requirement. Special thanks are also due to the North Suffolk Integrated Community Health Needs Assessment (iCHNA) initiative for their support and their contributions to this assessment.

BIDMC's Community Advisory Committee (CAC) also supported this assessment. The CAC is made up of community members, service providers, and other key stakeholders that either live in or work in Chelsea and/or the neighborhoods in Boston that are part of the CBSA. The CAC was initially constituted to oversee BIDMC's New Inpatient Building Community-based Health Initiative, and because of their expertise and specific knowledge of Boston they assisted with community engagement and provided valuable insight related to community need. It should also be noted that the assessment was greatly informed and supported by staff and clinicians at the community health centers who are part of BIDMC's Community Care Alliance (CCA). These health centers are a major part of Boston's health care safety net and do excellent work on behalf of some of Boston's most underserved populations. The administrative and clinical staff from the health centers provided a great amount of information on community need and helped BIDMC to engage community residents.

Finally, BIDMC's Community Benefits Staff and Senior Leadership would like to acknowledge the great work, support, and commitment of the BIDMC CBC. The CBC oversaw every aspect of the needs assessment across all facets. BIDMC owes a tremendous debt of gratitude to every member of the CBC.

Over the years, the BIDMC CBC membership has provided their expertise and invested hundreds of hours of their time to engage the community, align BIDMC's efforts with community need, and ensure the strength and impact of the Medical Center's Community Benefits Program. The work of the CBC has ultimately strengthened the BIDMC's connections with the people and the communities it serves. It is also abundantly clear that the Community Health Needs Assessment Report provided below, along with the associated Implementation Strategy, would not be as strong were it not for the CBC's commitment and the contributions of all of its members.

Beth Israel Deaconess Medical Center Community Benefits Committee 2019

Phyllis Barajas, Committee Co-Chair
Pamela Scott, Committee Co-Chair
Carol F. Anderson, Chair, Board of Directors
Arese Carrington, MD,
Elizabeth Cheng
Helen Chin Schlichte
Jose de la Rosa
Stephen Denny
Thomas DeSimone
Matthew E. Epstein
Lee Ann Fatalo

Joan Feinberg Berns, PhD
Peter Healy, President, BIDMC
Paula Ivey Henry, PhD
Nancy Kasen, Community Benefits, BIDMC
Jamie Katz, Chief General Counsel, BIDMC
Edward Ladd
Vivien Li
Femi Obi
April Tang
Fred Wang
Tracey West

Beth Israel Deaconess Medical Center Community Advisory Committee 2019

Elizabeth Browne
Tina Chery
Lauren Gabovitch, Social Work, BIDMC
Richard Giordano
Sarah Hamilton
Nancy Kasen, Community Benefits, BIDMC
Barry Keppard
Phillomin Laptiste
Theresa Lee
Tish McMullin, Government Affairs, BIDMC

Holly Oh
Alex Oliver-Davila
Joanne Pokaski, Workforce & Community Relations, BIDMC
Jane Powers
Luis Prado
Edna Rivera-Carrasco
Richard Rouse
Jerry Rubin
LaShonda Walker-Robinson, Social Work, BIDMC
Fred Wang

Beth Israel Deaconess Medical Center Community Benefits Senior Leadership Team 2019

Joanne Devine, BIDMC Psychiatric Clinical Nurse Specialist, BIDMC Psychiatry and Addictions Team
Shari Gold-Gomez, Director, BIDMC Interpreter Services
Peter Healy, President, BIDMC
Nancy Kasen, Director, BIDMC Community Benefits
Lisa LaChance, Director, BIDMC Center for Violence Prevention and Recovery
Phillomin Laptiste, Executive Director, Bowdoin Street Health Center
Marsha Maurer, DNP, RN, Senior Vice President BIDMC Patient Care Services
Patricia B. McMullin, JD, Director, BIDMC Government Affairs and Special Counsel
Kelina Orlando, Executive Director, BIDMC Ambulatory Operations
Joanne Pokaski, Senior Director BIDMC Workforce Development & Community Relations
Barbara Sarnoff Lee, LICSW, BIDMC, Senior Director, Social Work and Patient/Family Engagement
Anthony Weiss, MD, BIDMC Chief Medical Officer
Richard E. Wolfe, MD, Chief, BIDMC Department of Emergency Medicine

Acronyms

ACA	Affordable Care Act
BBRFSS	Boston Behavioral Risk Factor Surveillance Survey
BIDMC	Beth Israel Deaconess Medical Center
BILH	Beth Israel Lahey Health
CAC	Community Advisory Committee
CBC	Community Benefits Committee
CBSA	Community Benefits Service Area
CBSLT	Community Benefits Senior Leadership Team
CHIA	Center for Health Information and Analysis
CHI	Community Health Initiative
CHNA	Community Health Needs Assessment
DoN	Determination of Need
FBI	Federal Bureau of Investigation
HRiA	Health Resources in Action
HMOs	Health Maintenance Organizations
iCHNA	North Suffolk Integrated Community Health Needs Assessment
IRS	Internal Revenue Service
IS	Implementation Strategy
JSI	John Snow, Inc.
LEP	Limited English Proficiency
LGBTQ	Lesbian, Gay, Bisexual, Transgender, Queer/Questioning
MassCHIP	Massachusetts Community Health Information Profile
MDPH	Massachusetts Department of Public Health
MHPC	Massachusetts Health Policy Commission
CHI	New Inpatient Building-Community-based Health Initiative
PHIT	Population Health Information Tool
SNAP	Supplemental Nutrition Assistance Program
YRBS	Youth Risk Behavioral Survey

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Introduction

Background

Beth Israel Deaconess Medical Center (BIDMC) is one of the nation's preeminent academic medical centers and is nationally recognized for its world-class clinical expertise, education and research. BIDMC is part of the newly formed Beth Israel Lahey Health (BILH) - a system of academic medical centers, teaching hospitals, community hospitals, and specialty hospitals that combined, employ more than 4,000 physicians and 35,000 staff members. BIDMC is one of BILH's premier institutions with 673 licensed beds and over 1,200 active physicians. The Medical Center is also a Level 1 trauma center with a full range of medical/surgical, critical care, OB/GYN, and emergency services, and an extensive network of primary care and outpatient specialty care practices. BIDMC prides itself on its ability to combine exceptional, compassionate patient care with advanced medical knowledge, research, and technology in ways that allow it to achieve the best outcomes for its patients.

In addition to its commitment to clinical excellence, BIDMC is committed to being an active partner and collaborator in the communities it serves. Community service is at the core of the traditions of both of BIDMC's founding hospitals, Beth Israel Hospital and the New England Deaconess Hospital, and remains an important part of its mission today. BIDMC has a covenant to care for the underserved and works to address disparities in health care access and outcomes across the communities and population segments it serves.

BIDMC also recognizes its role as a tertiary/academic resource in a larger health system, and knows that to be successful it needs to collaborate with community partners. This Community Health Needs Assessment (CHNA) and the associated Implementation Strategy (IS) were completed in close collaboration with BIDMC's staff, health and social service partners, and the community at-large. In total, the assessment efforts engaged thousands of community residents, as well as a wide range of other stakeholders, including service providers, community advocates, Commonwealth and local public officials, faith leaders, and representatives from community-based organizations. The process that was applied in the development of the approach, methods, and community engagement strategies for the assessments and Implementation Strategy exemplifies the spirit of collaboration and community engagement that is such a vital part of BIDMC's mission.

Purpose

This community health needs assessment report is an integral part of BIDMC's population health and community engagement efforts. It supplies vital information that is applied to make sure that the services and programs that BIDMC provides are appropriately focused, delivered in ways that are responsive to those in its CBSA, and address unmet community needs. This assessment and the associated prioritization and planning processes also provide a critical opportunity for BIDMC to engage the community and to strengthen the community partnerships that are essential to BIDMC's success now and in the future. This report also allows BIDMC to meet its Commonwealth and Federal

Community Benefits requirements per the Massachusetts Attorney General's Office (MA AGO) and the Federal Internal Revenue Service (IRS) as part of the Affordable Care Act.

The primary goals for the CHNA and this report are to:

- Assess community health need, defined broadly to include health status, social determinants, environmental factors, and service system strengths and weaknesses;
- Engage the community, including local health departments, service providers across sectors and community residents, as well as BIDMC leadership and staff; and
- Identify the leading health issues and the population segments most at-risk based on a review of the quantitative and qualitative information gathered by the assessment
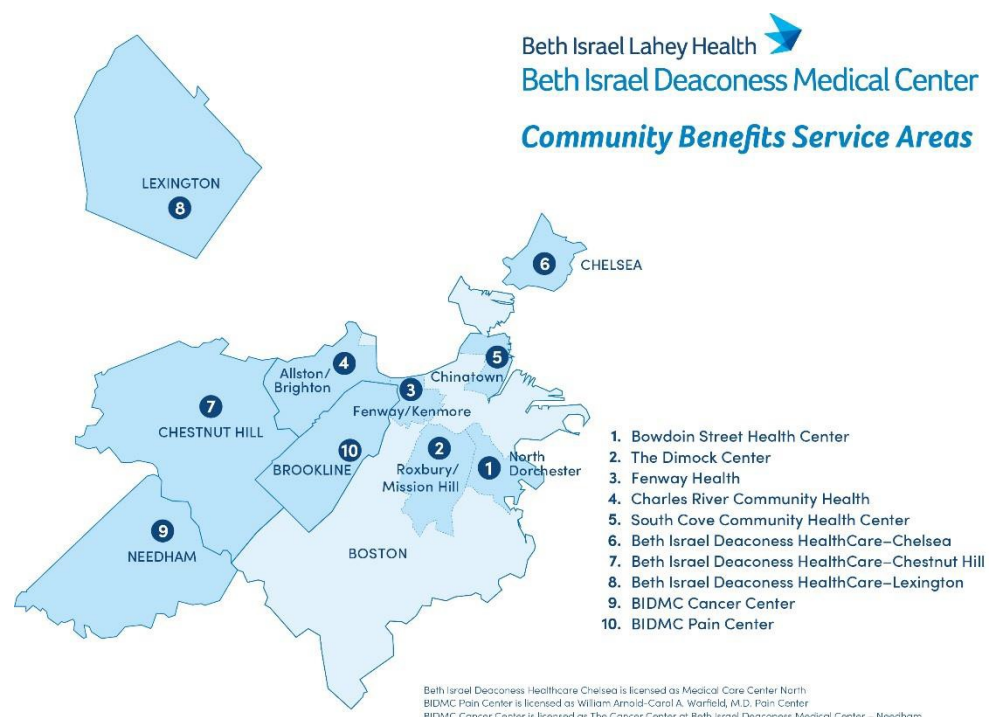
This CHNA is also a vital source of information and guidance to:

- Clarify issues related to community characteristics, barriers to care, existing service gaps, unmet community need and other health-related factors;
- Prioritize and promote community health investment;
- Inform and guide a comprehensive, collaborative community health improvement planning process; and
- Facilitate discussion within and across and sectors regarding community need, community health improvement, and health equity

Community Benefits Service Area & Community Benefits Priorities

In addition to the Medical Center in the Longwood area of Boston, BIDMC operates licensed multi-specialty outpatient facilities in Chelsea, Lexington, and Chestnut Hill, a cancer center in Needham, and a pain center in Brookline. BIDMC also operates a licensed health center in Bowdoin/Geneva and has strong, long-standing partnerships with an additional four Boston Federally Qualified Health Centers (Figure 1)

Figure 2: BIDMC Community Benefits Service Area (CBSA)

Beth Israel Lahey Health
Beth Israel Deaconess Medical Center
Community Benefits Service Areas

1. Bowdoin Street Health Center
2. The Dimock Center
3. Fenway Health
4. Charles River Community Health
5. South Cove Community Health Center
6. Beth Israel Deaconess HealthCare–Chelsea
7. Beth Israel Deaconess HealthCare–Chestnut Hill
8. Beth Israel Deaconess HealthCare–Lexington
9. BIDMC Cancer Center
10. BIDMC Pain Center

Beth Israel Deaconess Healthcare Chelsea is licensed as Medical Care Center North
BIDMC Pain Center is licensed as William Arnold-Carol A. Warfield, M.D. Pain Center
BIDMC Cancer Center is licensed as The Cancer Center at Beth Israel Deaconess Medical Center – Needham

within its Community Benefits Service Area (CBSA).

Through this health center network, BIDMC's Community Benefits Department supports community health improvement activities that meet the needs of all segments of the population with respect to age, race/ethnicity, income, language, country of origin, immigration status, language, sexual orientation and gender identity.

The communities in which these facilities operate define BIDMC's CBSA and all of the communities in Figure 1 were included in the assessment. In recognition of the considerable health disparities that exist in some communities, BIDMC focuses the bulk of its community benefits resources on improving the health status of low income and underserved populations living in the city of Chelsea and the Boston neighborhoods of Allston/Brighton, Bowdoin/Geneva, Chinatown, Fenway/Kenmore, and Roxbury/Mission Hill.

While there are certainly segments of the populations in Chestnut Hill, Lexington, and Needham that are vulnerable and underserved, the greatest disparities exist in Chelsea and Boston. In order to maximize the impact of its community benefits resources, BIDMC's CBC voted to prioritize and focus BIDMC's attention on the more urban, high-need communities in BIDMC's CBSA.

By the same token, there are community health needs that were identified by the assessment that, due to the limited burden that these issues present and/or the feasibility of having an impact in the short-term or long-term, were not prioritized for investment. The goals, objectives and strategic intentions on which BIDMC will focus are included in BIDMC's Implementation Strategy in Appendix F.

BIDMC currently supports and collaborates on dozens of educational, outreach, and community-strengthening initiatives aimed at reaching those who live in its CBSA. In the course of these efforts, BIDMC collaborates with many of Boston's leading healthcare, public health, and social service organizations. BIDMC has particularly strong relationships with the community health centers (CHCs) that operate in its CBSA, all of which are affiliated with BIDMC's Community Care Alliance (CCA). These health centers are key community benefits partners as they are rooted in their communities and are dedicated to treating those who are traditionally underserved. These CHC partners have been a vital part of BIDMC's community health strategy since 1968, when Beth Israel Hospital first joined forces with The Dimock Center to address maternal and child health issues.

Summary of Approach and Methods

In conducting this assessment and planning process, it would be difficult to overstate BIDMC's commitment to community engagement and a robust, collaborative, transparent, and objective process. Rather than conducting one-single assessment, BIDMC's Community Benefits staff dedicated countless hours of their time and other resources to participate in and gather information from a series of three concurrent and comprehensive assessments. These three assessments were conducted by organizations or collectives of organizations throughout Boston and Chelsea. BIDMC also integrated the extensive community engagement and planning work that BIDMC is conducting as part of its Massachusetts Determination of Need New Inpatient Building Community-based Health Initiative. Involvement in these four efforts allowed BIDMC to leverage resources, and create a robust and inclusive CHNA and IS process. Involvement in these concurrent assessments also facilitated important collaboration between BIDMC and health service organizations across Boston. These partners were very productive and will have a lasting positive impact when it comes to future assessments and community health improvement efforts.

In October of 2019, BIDMC hired John Snow, Inc. (JSI), a public health consulting firm based in Boston to integrate the information gathered across these concurrent assessments and augment the information gathered where appropriate. BIDMC worked with JSI to ensure that the final BIDMC CHNA, including elements across all of its separate parts, engaged the necessary community constituents, incorporated comprehensive quantitative and qualitative information for all of the communities in its CBSA, and fulfilled Commonwealth and Federal Community Benefits requirements.

BIDMC's CBC oversaw all aspects of the assessment and planning process and was integral to the development of the CHNA report and the implementation strategy. The assessment was also supported by BIDMC's Community Advisory Committee (CAC), which was initially constituted to oversee BIDMC's New Access Building Community-based Health Initiative. Both the CBC and CAC are made up of community members, service providers, and other key stakeholders that either live in and/or work with the neighborhoods in Boston that are part of BIDMC's CBSA. The expertise and knowledge that these groups brought to the process was invaluable.

The following are brief descriptions of each of the component parts of BIDMC's overall assessment. More detailed descriptions of the specific approaches and methods that were applied across these component parts are included in Appendix A. Collectively, the efforts described below exemplify BIDMC's commitment to a comprehensive, inclusive, engaged, collaborative assessment and planning process. The efforts also show BIDMC's commitment to understanding unmet need, the underlying social determinants of health, and community engagement. All of these processes put a particular emphasis on engaging hard to reach population segments that are often left out of these types of activities. BIDMC is extremely proud of its efforts over the past year.

Boston Community Health Needs Assessment-Community Health Improvement Plan Collaborative (Boston CHNA-CHIP Collaborative)

BIDMC's Community Benefits staff participated and took a leadership role in the development and implementation of a collaborative citywide community health needs assessment involving dozens of service providers and the Boston Public Health Commission. This assessment, called the Boston CHNA-CHIP Collaborative (Boston Community Health Needs Assessment – Community Health Improvement Plan Collaborative) was facilitated through the Conference of Boston Teaching Hospitals (COBTH) and was an enormous, unprecedented effort between twelve Boston area teaching hospitals and academic medical centers, numerous community health centers, the Boston Public Health Commission, other community based organizations and community residents. The assessment focused on the social determinants of health through the lens of health equity; it aimed to uncover and understand how and why individuals in certain Boston neighborhoods or population groups experience disparities in health outcomes and barriers to care based on socioeconomic status, race and ethnicity, language, health status, sexual orientation, gender identity, and other factors. The overall approach was participatory and collaborative, engaging community residents and stakeholders throughout the CHNA process. Nancy Kasen, BIDMC's Director of Community Benefits, co-chaired the Boston CHNA-CHIP Collaborative Steering Committee and served on many of the CHNA Workgroups (Community Engagement, Secondary Data, and Planning). The Boston CHNA-CHIP Collaborative collected and analyzed secondary data on a wide range of issues from a variety of sources to identify community characteristics, barriers to care, risk factors, and disparities in health outcomes. There was a particular focus on collecting data to characterize the social determinants of health (e.g., housing, transportation, and socioeconomic status) and to stratify data by Boston neighborhood, as well as by race/ethnicity, age, income, and other characteristics. The assessment also included a robust community engagement and qualitative information gathering effort, including a community health survey, focus groups, and key informant interviews.

- The **community health survey** collected information on leading social determinants, barriers to care, and health status issues. More than 2,404 residents of Boston completed these.
- 104 people participated in thirteen **focus groups** conducted with specific populations of interest, which delved deeply into unmet community needs, strengths, and opportunities for the future.
- 45 **key informant interviews** were completed that engaged institutional, organizational, and community leaders and front-line staff across sectors. Discussions explored interviewees' experiences of addressing community needs and opportunities for future alignment, coordination, and expansion of services, initiatives, and policies.

The Boston CHNA-CHIP Collaborative also conducted an extensive series of prioritization and planning meetings to facilitate the development of a citywide Community Health Improvement Plan (CHIP). Finally, the Boston CHNA-CHIP Collaborative developed a summary and full report of findings, which was drawn on extensively to develop this report. Additional information on the Boston CHNA-CHIP Collaborative is provided in Appendix A.

North Suffolk Integrated Community Health Needs Assessment (iCHNA)

BIDMC staff also participated in and leveraged the efforts of the North Suffolk Integrated Community Health Needs Assessment (iCHNA). The iCHNA was a comprehensive assessment and planning effort, which gathered information from a broad geographic area to the north of Boston, including Chelsea. The iCHNA was overseen by a Steering Committee comprised of municipal leaders, community organizations, and representatives from the five health systems that serve the North Suffolk region. Kelina Orlando, BIDMC Executive Director of Ambulatory Operations served on the iCHNA Steering Committee and participated in the primary data collection process. The Steering Committee was responsible for monitoring the completion of assessment tasks, coordinating communication efforts with key stakeholders and the public at-large, and making final decisions on priority areas and strategies. The assessment was comprehensive in nature, including quantitative data gathered from the U.S. Census, Massachusetts Department of Education, Massachusetts Department of Public Health (MDPH), local Youth Risk Behavior Survey (YRBS), Prevention Needs Assessment (PNA), local police departments and community-based organizations.

- Qualitative information was gathered through a **quality of life survey**, which collected information from more than 1,800 respondents.
- Information was also gathered through **focus groups and key informant interviews**. In total, the iCHNA effort organized 22 focus groups with service providers and conducted 28 in-depth interviews with key stakeholders.

The Steering Committee also engaged in a series of meetings that allowed them to understand key assessment findings, identify community health priorities and priority populations for investment, and develop the CHNA Report and Implementation Strategy. Additional information on the iCHNA is provided in Appendix A.

Beth Israel Lahey Health (BILH) and Other Hospital Community Health Needs Assessments

BIDMC leveraged information from numerous hospitals within the BILH system (i.e., New England Baptist Hospital, Beth Israel Deaconess Hospital – Needham, and Lahey Hospital Medical Center,) as well as other hospitals in Boston (i.e., Brigham and Women's Hospital, Dana-Farber Cancer Institute, Boston Children's Hospital). These hospitals operate in BIDMC CBSA and, as a result, efforts were made to share information and align community engagement and assessment activities.

- Qualitative information was gathered through **a community meeting in Mission Hill/Roxbury** that was jointly hosted by BIDMC and New England Baptist Hospital (NEBH), along with Brigham and Women's Hospital, Boston Children's Hospital and Dana-Farber Cancer Institute.

- Qualitative information from **key informant interviews and meetings** involving residents and key stakeholders in Lexington was shared by Lahey Hospital Medical Center in Burlington.

- Qualitative information was gathered through a **community health survey**, which collected information from more than 100 residents of Mission Hill.

- Information was also gathered through **focus groups and key informant interviews**. In total, the NEBH CHNA effort organized two focus groups involving more than 20 people and conducted 12 in-depth interviews with key stakeholders.

Additional information on these assessment activities is provided in Appendix A.

BIDMC Determination of Need: New Inpatient Building Community Health Initiative (CHI)

In addition to the Boston CHNA-CHIP Collaborative, the iCHNA, and numerous hospital CHNA efforts, BIDMC conducted community engagement, assessment, and prioritization activities through its Determination of Need, New Inpatient Building Community-based Health Initiative (CHI). BIDMC is in the process of constructing a new inpatient building – the first new building that BIDMC has built in over 20 years. Due to the size of this capital expenditure, the MDPH requires that BIDMC go through a Determination of Need (DoN) process; this process directs BIDMC to dedicate 5% of total project costs towards a Community-based Health Initiative (CHI) to improve the health of residents in communities that are part of the BIDMC's CBSA. Over the next five to eight years, BIDMC will invest approximately $30 million towards the CHI project. $7.5 Million (25%) of BIDMC's $30 Million will be given to the Commonwealth and be invested in Commonwealth-wide community health improvement initiatives. The remaining $22.5 Million will be allocated and directed by BIDMC's CAC in community health improvement initiatives in BIDMC's CBSA neighborhoods in Boston and Chelsea. Per Commonwealth DoN requirements, BIDMC is required to implement a robust community engagement effort and facilitate a prioritization process with BIDMC's CAC to identify the leading community health priorities as well as the communities and priority population segments that will be supported by BIDMC's CHI funds.

- A series of five (5) **community meetings** were held in the Boston neighborhoods that are part of BIDMC's CBSA, and approximately 185 community residents attended. The primary goal of these meetings was to ensure that residents of BIDMC's CBSA in Boston, as well as staff from community-based organizations that operate in those areas, were given the opportunity to learn about the CHI, share their ideas on how CHI funds should be spent, and vote on community health priorities and strategic ideas for funding. Special efforts were made to include non-English speaking residents and other hard-to-reach segments of the population who are often left out of community engagement activities in the community engagement meetings.

With respect to prioritization and planning, the BIDMC CAC met eight times between October 2019 and July 2019 to develop the CHI engagement and prioritization plans, as well as to more substantively discuss and agree on priority communities, priority populations, segments of the population that are hard-to-reach, and community health sub-priorities or categories for investment. In September and October 2019, the BIDMC CAC will continue to meet to decide on the specific details of its CHI allocation strategy. This will dictate what types of activities will be supported, what communities will be the focus of CHI investments, and how funds will be distributed. Information drawn for the community meetings and the CAC deliberations were integrated into BIDMC's CHNA and IS. Additional information on the CHI is provided in Appendix A.

BIDMC CBSA Assessment

As mentioned above, in October of 2018, BIDMC hired JSI to integrate the information gathered across the concurrent assessment and planning activities discussed above and augment the information gathered where necessary. BIDMC's additional efforts ensured that BIDMC's CHNA engaged the necessary community constituents, incorporated information from all of the communities in its CBSA, and fulfilled Commonwealth and Federal Community Benefits requirements.

Figure 3 below provides a summary of the quantitative and qualitative assessment activities conducted for each of the assessment efforts.

Figure 3: BIDMC Assessment Activities 2018-2019

Methods	Summary of Methods Applied Across all Assessment Components
Quantitative Data	
• Demographic/Socio-economic Data (e.g., Age, gender, race/ethnicity, language, income) • Social Determinants of Health Data (e.g., Housing Transportation, crime) • Epidemiologic Data (e.g., Disease prevalence, morbidity and mortality) • Hospital Discharge Data (e.g., Discharge Rates and Prevention Quality Indicators[1]	
Qualitative Data / Community Engagement	
Key Informant Interviews	~ 70 interviews with health and social service providers, public health officials, advocates, residents, and other community Stakeholders
Community Health Survey Responses	~ 4,500 survey responses from community residents
Focus Groups	~ 16 focus groups with key population segments (e.g., Black/African Americans, Hispanics/Latinos, LGBTQ, or service provider groups)
Community Meetings	~ 15 community meetings open to the public in neighborhoods across Boston and Chelsea

BIDMC's additional, independent assessment and planning activities were conducted in three phases. First, BIDMC collected, analyzed and integrated additional quantitative data from various sources to ensure that all of the communities that are part of BIDMC's CBSA were included in the assessment (Phase I). In this case, particular attention was made to gather information from the communities that are part of BIDMC's CBSA that are outside of Boston and Chelsea. Namely, BIDMC operates a pain center in Brookline, a Cancer Center in Needham, and an outpatient, multi-specialty clinic in Lexington. Second, BIDMC engaged additional community residents, key stakeholders, and service providers through key informant interviews (Phase II). Third, BIDMC integrated and prioritized the findings compiled and analyzed across all of the various concurrent assessment activities (Phase III). Once the findings were prioritized, BIDMC then worked with JSI to develop this report and the associated Implementation Strategy (Phase III).

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[1] PQIs are a set of measures that use hospital discharge data to identify quality of care for "ambulatory care sensitive conditions (ACS)." These are conditions that can potentially be prevented or avoided given early intervention and appropriate levels of outpatient primary or specialty care. https://www.qualityindicators.ahrq.gov/modules/pqi_overview.aspx

It should be noted that this report relies heavily on information gathered from the Boston CHNA-CHIP Collaborative, the iCHNA, NEBH, Beth Israel Deaconess Hospital – Needham, and the other hospital partners referenced above as part of their community health assessment efforts. In order to reduce duplication of effort and fully leverage resources, information was drawn directly from the CHNA reports developed by these organizations. BIDMC wants to recognize the efforts of all who shared information but feels particularly obliged to recognize the efforts of the iCHNA and the Boston CHNA-CHIP Collaborative due to the magnitude of information that was shared from these efforts and reported in this document. Special thanks to Health Resources in Action (HRiA) who was hired by the Boston CHNA-CHIP Collaborative to support their assessment and reporting efforts. In some cases, information has been drawn from the Boston CHNA-CHIP Collaborative and iCHNA reports and included verbatim in this document.

Following is more detailed descriptions of the leadership and oversight of BIDMC's CHNA, additional data collection efforts, and the prioritization process, as well as the Resource Inventory and the Community Benefits Evaluation.

Leadership and Oversight. As mentioned above, BIDMC's CBSA CHNA, including the collective efforts with the Boston CHNA-CHIP Collaborative, the iCHNA, and numerous other hospitals within and outside of BILH, were overseen by the CBC. The CBC is comprised of key community stakeholders and BIDMC leadership and provided valuable insight on the assessment approach, including the community engagement strategy, preliminary findings, and strategic planning. The CAC also supported BIDMC's CHNA by providing their knowledge and experience living in or work with the neighborhoods of Boston and Chelsea. It is also important to note that BIDMC's Community Benefits Senior Leadership Team (CBSLT) played a critical role in the assessment and planning process. They were consulted throughout the assessment and, along with the CBC, were instrumental in the prioritization and planning process. The CBLT included key BIDMC administrators and clinicians.

Quantitative and Qualitative Data Collection. BIDMC's CBSA CHNA includes an extensive amount of additional quantitative and qualitative data that further characterize the communities in BIDMC's CBSA, including the health status of its residents. This data was used to augment data from existing assessments, particularly for communities in Boston and Chelsea. It was also used to capture information from communities in BIDMC's CBSA that are outside of Boston and Chelsea, in the surrounding communities of Brookline, Chestnut Hill, Lexington, and Needham. Since Chestnut Hill is not a registered municipality, data is reported for the communities that comprise it (Boston, Brookline, and Newton).

Secondary data sources included:

- U.S. Census Bureau, American Community Survey 5-Year Estimates (2013-2017)
- Behavioral Risk Factor Surveillance Survey, 2017
- Massachusetts Department of Elementary and Secondary Education: School and District Profiles (2017, and 2018-2019)
- FBI Uniform Crime Reports (2017)
- Massachusetts Department of Public Health, Registry of Vital Records and Statistics (2015)
- Massachusetts Department of Public Health, Bureau of Substance Abuse Services (2017)
- Massachusetts Department of Public Health, Annual Reports on Births (2016)

- Massachusetts Bureau of Infectious Disease and Laboratory Sciences (2017)
- Massachusetts Center for Health Information Analysis (CHIA) Hospital Profiles (FY 2013-2017)
- Massachusetts Center for Health Information Analysis (CHIA) Hospital Discharges (2017)
- Massachusetts Healthy Aging Collaborative, Community Profiles (2018)

Whenever possible, confidence intervals were analyzed to test for statistically significant differences between municipal and Commonwealth data points. BIDMC CHNA also included some more refined analysis of hospital discharge data compiled by the Massachusetts Center for Health Information and Analysis (CHIA). This analysis focused on analyzing Ambulatory Care Sensitive conditions, which allow for the assessment of the strength of a community's primary care system and its ability to prevent or avoid hospitalizations. A comprehensive Data Book is included in Appendix B.

BIDMC's CBSA assessment also collected a limited amount of qualitative information to augment the considerable amount of information collected from the Boston CHNA-CHIP Collaborative, the iCHNA, other hospital CHNA activities, and BIDMC's CHI. This qualitative data gathering focused on filling gaps in information in Brookline, Lexington, Needham, and Chestnut Hill, which were not covered by the iCHNA and the Boston CHNA-CHIP Collaborative. Data sources, associated tools, lists of participants, and other materials are included in Appendix A with other more detailed information on the BIDMC CBSA approach and the CBSA Detailed Community Engagement Summary in Appendix C.

Prioritization. During Phases I and II, BIDMC's CBC was provided updates on the CBSA assessment to keep them informed of progress and our preliminary findings. In Phase II, a prioritization meeting was held with BIDMC's CBC. During this meeting, quantitative and qualitative data findings, including information from the Boston CHNA-CHIP Collaborative assessment, the iCHNA, the NEBH CHNA, and the BIDMC CHI were reviewed. The CBC then participated in a robust discussion of all of the findings and based on this discussion, voted to approve a set of community health priorities and priority population segments that would be used to develop BIDMC's implementation strategy. Following the CBC planning and prioritization meeting, a similar meeting was organized with BIDMC's CBSLT. During this meeting, the CBSLT also reviewed key findings from across all of the concurrent assessment activities as well as priorities agreed on by the CBC. Based on this discussion they voted on a set of priorities that were incorporated into BIDMC's CHNA and the IS.

Approval/Adoption and Public Comment. The CHNA and IS were distributed and presented to the CBC on September 5, 2019 and, with their approval, presented to the Board of Directors for approval on September 18, 2019. As with every CHNA, BIDMC's 2019 CHNA has been made available via BIDMC's web site (https://www.bidmc.org/about-bidmc/helping-our-community/community-initiatives/community-benefits). Comments are welcome and encouraged and contact information for BIDMC's Director of Community Benefits is both on the website and in Appendix E of this report. There were no written comments or oral comments received on BIDMC's prior (FY 2016) CHNA or IS.

Resource Inventory. Federal and Commonwealth requirements indicate that a Resource Inventory should be created to inform the extent to which there are gaps in health-related services. Working with BIDMC, JSI compiled a list of resources across the broad continuum of services, including clinical health care services, community health and social services, and public health resources. This was done

primarily by compiling information from existing resource inventories and community partner lists from BIDMC. Information was also compiled from membership lists of the existing community health coalitions and from CHNA interviews. JSI reviewed BIDMC's FY 2018 Annual Report of Community Benefits activities submitted to the MA AGO, which included a listing of partners, as well as publicly available lists of local resources. The goal of this process was to identify key partners who may or may not be already collaborating with BIDMC. The resource inventory can be found in Appendix D.

Community Benefits Evaluation. BIDMC's contract with JSI included funds to conduct a community benefits evaluation that assessed the impact of BIDMC existing community benefits activities. More specifically, JSI staff reviewed the Fiscal Year 2017 Community Benefits Report that BIDMC submitted to the MA AGO in April 2018. Activities reported in this report were abstracted and individually scored. JSI determined the intensity of each activity by coding three specific attributes according to a proven methodology developed by the Robert Wood Johnson Foundation. The three attributes are:

- **Behavioral Intention:** Providing information; enhancing skills, services, or support; modifying access, barriers, and opportunities; modifying policies and broader conditions;

- **Duration:** One-time, occurring more than once, or ongoing; and

- **Reach:** Proportion-high, medium, low of the total priority population involved in or touched through the activity

A JSI evaluation team member rated each activity attribute on a scale of 0.1 (minimum) to 1.0 (maximum) and calculated a single intensity score using a defined protocol (Table 1). A second evaluation team member coded a randomly selected number of activities to ensure inter-rater reliability. A score of 0.1 – 0.5 was given dependent upon how many times and/or how long the activity was implemented during FY2017. If the duration or reach was unclear, the evaluators scored the attribute the lowest possible score (0.1). The formula used to calculate an intensity score for each activity was:

$$\sum \text{Behavioral value} + \text{duration value} + \text{reach value}$$

Scores could range from 0.3 (lowest intensity and least likely to impact long-term outcomes) to 3.0 (highest intensity and most likely to impact long-term outcomes). A total composite score for all activities was then summed across all activities.

Table 1: Community Benefits Evaluation Scoring Protocol

Dimension	Rubric for Scoring Intensity (0=low;1=high)
Behavioral Intervention Strategy	**High (1.0):** Modifying policies, systems and access **Med (0.55):** Enhancing services and support **Low (0.1):** Providing information; enhancing skills
Duration (Yearly)	**High (0.5):** Ongoing, throughout the year **Med (0.275):** More than once per year **Low (0.1):** One time event
Duration (Sustainability)	**High (0.5):** Ongoing, institutional practice **Med (0.275):** Ongoing, demonstrated commitment (e.g., partnership, MOU, multi-organizational involvement) **Low (0.1):** Would end without community-benefits dollars
Reach (Community)	**High (0.5):** >20% or more of the total population* **Med (0.275):** 5-20% of the population **Low (0.1):** 0-<5% of the population
Reach (Priority Population)	**High (0.5):** >20% or more of the total priority population^ **Med (0.275):** 5-20% of the population **Low (0.1):** 0-<5% of the population

*total population was based on the number of people living in the hospital's primary service area or the community within which the activity was implemented
^priority populations were based on the strategy's targeted population and may have been a calculation based on the prevalence of a condition across the U.S. or Massachusetts

A more detailed summary of the Community Benefits Evaluation is included in Appendix G.

Community Engagement

As discussed above, community engagement is integral to BIDMC's mission and great efforts were taken to ensure that all of the concurrent assessment activities implemented over the past year included substantial efforts to engage community residents and other community stakeholders. These engagement efforts spanned all phases of the assessment from assessment planning, to data collection, to prioritization and planning, to reporting, and finally to on going monitoring and evaluation.

BIDMC recognizes the importance of collaborating with residents, advocates, service providers, Commonwealth and local public officials, representatives from community-based organizations, and other stakeholders when conducting assessment and planning projects of this kind. In collaboration with its assessment and community engagement partners, BIDMC applied MDPH's Community Engagement Standards for Community Health Planning as a guide.[2] As a result, BIDMC employed a variety of strategies to ensure that community members were informed, consulted, involved, and empowered throughout the assessment process.

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[2] https://www.mass.gov/files/documents/2017/01/vr/guidelines-community-engagement.pdf

Figure 4: Community Engagement Continuum
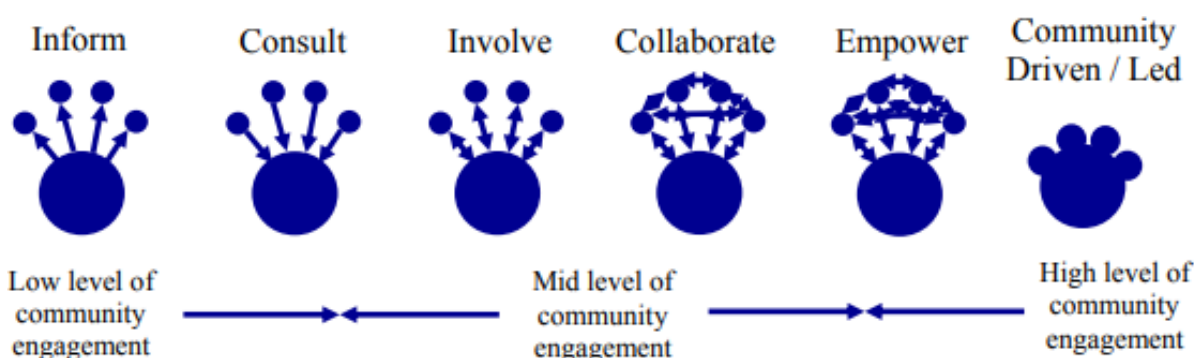
Source: Adapted from International Association for Public Participation, 2014

Table 2 includes a description of the goal for each level of community engagement, examples of activities and strategies within each level, and associated activities undertaken by BIDMC and assessment partners, including the Boston CHNA-CHIP Collaborative, the iCHNA, and other hospital partners within BILH and in Boston.

Table 2: Community Engagement Activities across the Continuum

Inform: *Provide community with balanced and objective information to assist them in understanding the problem, alternatives, opportunities, and/or solutions*
Examples: Fact sheets, web sites, open houses
• **BIDMC CHI Engagement:** A web site was developed to inform the community on the CHI purpose, activities, and findings. Community Advisory Committee meeting agendas, materials, and minutes were posted for the public to access. • **Boston CHNA-CHIP Collaborative:** A web site was developed to keep the public informed of the assessment process and opportunities for involvement. • **iCHNA:** A web site was developed to keep the public informed of the assessment process and opportunities for involvement.
Consult: *To obtain community feedback on analysis, alternatives, and/or solutions*
Examples: Public comments, focus groups, surveys, community meetings
• **BIDMC CBSA Assessment:** Key informant interviews were conducted with BIDMC leadership and community stakeholders. • **BIDMC CHI Engagement:** Community meetings were held in each of the CBSA Boston neighborhoods. • **Boston CHNA-CHIP Collaborative:** Key informant interviews, focus groups, a survey, and community meetings were conducted to consult community residents and stakeholders on community health issues • **iCHNA:** Key informant interviews, focus groups, and a survey were conducted to consult community residents and stakeholders on community health issues
Involve: *To work directly with community throughout the process to ensure their concerns and aspirations are consistently understood and considered*
Examples: Workshops, deliberative polling, advisory bodies
• **BIDMC CHI Engagement:** At community meetings, participants were engaged to prioritize community health issues. The results of these prioritization processes were used to arrive at a set of final community health

priorities.

- **Boston CHNA-CHIP Collaborative:** An integrated analysis of findings from quantitative and qualitative data was done to arrive at a set of preliminary community health priorities. Through a series of meetings with community residents and stakeholders, a final set of priorities were developed. Community residents and stakeholders were also involved in determining goals, objectives, and strategies within each priority area. Additionally, the Boston Public Health Commission organized four Community Health Prioritization Meetings in Roxbury and Mattapan to gather information on the leading health-related issues.
- **iCHNA:** At the focus groups, participants were engaged and asked questions regarding their perceptions about the health of the community, community assets, and pressing health issues.
- **BILH and other hospital partners:** Focus groups and community meetings were conducted by hospital within the BILH system (i.e., New England Baptist Hospital (NEBH), Beth Israel Deaconess Hospital – Needham, and Lahey Hospital Medical Center) and other hospital partners in Boston as part of hospital CHNA activities. Community and stakeholder participants were involved in discussions and engaged to prioritize community health issues. The results of these information gathering and prioritization processes were used to arrive at a set of final community health priorities.

Collaborate: *To partner with the community in each aspect of the decision including the development of alternatives & identification of the preferred solution*

Examples: Advisory groups, consensus building, participatory decision making

- **Community Care Alliance (CCA):** CCA works in close partnership with a network of private, independent, community health centers in Boston, called the Community Care Alliance. BIDMC created this network and supports their activities through technical assistance and direct financial support. BIDMC's Community Benefits Staff oversees the activities of the CCA and, relative to the assessment participated in monthly progress reports to get their input on the assessment and its findings.
- **BIDMC CBSA Assessment:** The assessment was overseen by a Community Benefits Committee, comprised of community residents and stakeholders. This body collaborated to make decisions regarding the assessment approach and priority health issues
- **BIDMC CHI Engagement:** Community residents and stakeholders were included on the CHI Community Advisory Committee. This body was tasked with making decisions regarding engagement approach and strategies, prioritization of issues, and allocation of funds.
- **Boston CHNA-CHIP Collaborative:** The CHNA used a participatory, collaborative approach that engaged the community through different avenues. Over 100 Collaborative members representing health care, public health, education, community development, social service, and community-based organizations provided input throughout the CHNA process and played an integral role in data collection efforts. Data collection efforts were focused on engaging hard-to-reach populations who are not typically engaged in these processes or represented in the secondary data.
- **iCHNA:** Focus group participants and key informants were identified by the North Suffolk Integrated Community Health Needs Assessment Steering Committee using a segment inclusiveness worksheet to ensure that a variety of diverse individuals across multiple sectors and populations were included.
- **BILH and other hospital partners:** Focus groups and community meetings were conducted as part of hospital CHNA activities, participants were involved in discussions and engaged to prioritize community health issues. The results of these information gathering and prioritization processes were used to arrive at a set of final community health priorities. Specifically, BIDMC and NEBH, along with Boston Children's Hospital, Brigham and Women's Hospital, and Dana-Farber Cancer Institute, jointly hosted a forum in Mission Hill/Roxbury to involve and collaborate with the community on the identification of priorities.

Empower: *To place the decision making in the hands of the community*		
Examples: Advisory bodies, volunteer stipends, ballots, delegated decisions		

- **BIDMC CHI Engagement:** The Community Advisory Committee, made up of community residents and stakeholders, were tasked with making decisions regarding prioritization of issues and allocation of resources. During this process, a series of community engagement meetings were organized with community –based organizations and in a number of cases staff members from these organizations were trained and provided stipends to guide discussions in facilitated sessions or "focus groups". Their participation enhanced discussions and built their capacity.
- **Boston CHNA-CHIP Collaborative:** Community members, residents and service providers, were empowered throughout the Boston CHNA-CHIP Collaborative's activities to participate and in many ways help facilitate and guide discussions. Focus group participants were also provided with stipends and childcare during data collection activities. Additionally, the organizing organizations of each focus group were compensated. Boston CHNA-CHIP Collaborative also paid the Healthy Community Champions to distribute the community survey.

Community Driven/Led: *To support the actions of community initiated, driven and/or led processes*		
Examples: Community supported processes, advisory bodies, stipend roles for communities, funding for communities		

- **Boston CHNA-CHIP Collaborative:** Focus group participants were provided a stipend and childcare during data collection. Additionally, organizations who hosted the event were compensated. Healthy Community Champions were also provided a stipend to help distribute the community survey. The Boston CHNA-CHIP Collaborative also conducted key informant interview and meeting facilitation trainings for representatives from organizations that are part of the Boston CHNA-CHIP Collaborative.
- **iCHNA:** Focus group participants were provided a $15 gift card - adults received Market Basket gift cards and youth received Amazon or Target gift cards.
- **BIDMC CHI Community Engagement:** CHI efforts included a series of community meetings hosted by community-based organizations in BIDMC's CBSA. Host organizations were if they were interested and able to help facilitate breakout sessions at the meetings. Those who agreed to participate were provided a Facilitators Guide and required to participate in a 1-hour training on facilitation and non-directive interview techniques. Participants were provided a stipend for their participation and assistance in these efforts.

Key Findings: Demographics

As mentioned above in the approach and methods section, this report relies heavily on information gathered from the Boston CHNA-CHIP Collaborative, the iCHNA, NEBH, Beth Israel Deaconess Hospital – Needham, and the other hospital partners referenced above as part of their community health assessment efforts. In order to reduce duplication of effort and fully leverage resources, information in this report was drawn directly from the CHNA reports developed by these organizations. BIDMC wants to recognize the efforts of all who shared information but feels particularly obliged to recognize the efforts of the iCHNA and the Boston CHNA-CHIP Collaborative due to the magnitude of information that was shared from these efforts and reported in this document. Special thanks to Health Resources in Action (HRiA) who was hired by the Boston CHNA-CHIP Collaborative to support their assessment and reporting

efforts. In some cases, information has been drawn from the Boston CHNA-CHIP Collaborative and iCHNA reports and included verbatim in this document.

The following section contains a comprehensive description of the BIDMC CBSA population's geographic and demographic characteristics. This information is critical knowledge in order to recognize inequities, identify priority populations and health related disparities, and target strategic responses.

All assessment efforts captured a range of quantitative and qualitative data related to age, race, ethnicity, origin, and language. The following is a summary of key findings related to these community characteristics. Conclusions were drawn from collected quantitative data and qualitative information as part of each assessment process.

A key finding from this assessment was that health disparities and needs were more pronounced in Boston (as a whole, and at the neighborhood level), and in the City of Chelsea. As such, key findings in this document will be reported in two parts: Boston and Chelsea, and surrounding communities (Brookline, Chestnut Hill, Lexington, and Needham). Since Chestnut Hill is not a registered municipality, data is reported for the communities that comprise it (Boston, Brookline, and Newton).

Population and Age Distribution

Age is a fundamental factor to consider when assessing individual and community health status. Older individuals typically have more physical and mental health vulnerabilities and are more likely to rely on immediate community resources for support compared to young people.

Boston and Chelsea

The population growth rate in all BIDMC CBSA neighborhoods increased between 2008-2012 and 2013-2017; Roxbury has seen the largest increase (17.1%) (Table 3). Among CBSA neighborhoods:

- Dorchester is one of the neighborhoods with the highest proportion of residents under 18
- Fenway has a small percentage of residents under 18 (3.9%), but has a large proportion of young adults aged 18-24 (58.7%)

Table 3: Population in Boston and Neighborhoods, 2008-2012 and 2013-2017

	2008-2012	2013-2017	Percent Change 2012-2017 (%)
Boston	**619,662**	**669,158**	**8.0**
Allston/Brighton	61,159	63,270	3.5
Dorchester (02121, 02125)	58,797	63,733	8.4
Dorchester (02122, 02124)	75,304	79,717	5.9
Fenway	52,897	54,267	2.6
Roxbury	37,454	43,871	17.1

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2008-2012 and 2013-2017

In Chelsea, over one in four residents is under 18 (26%), a small proportion (9%) are over the age of 65.
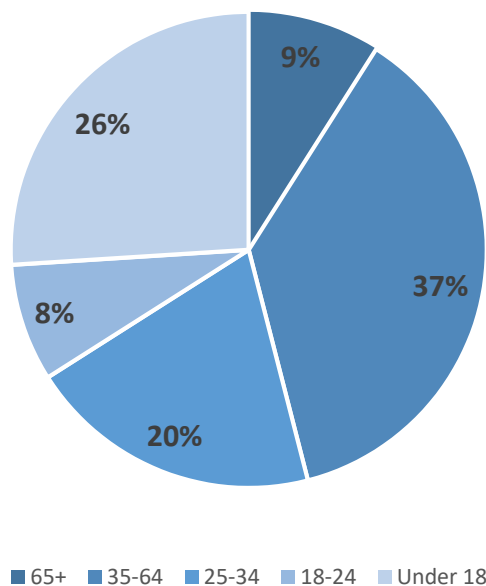
Figure 5: Age Distribution in Chelsea, 2012-2016

Source: American Community Survey (ACS), 2012-2016

Other BIDMC CBSA Municipalities

The median ages in Brookline, Lexington, Needham, and Newton were significantly higher compared to the Commonwealth overall, as were the percentages of residents under 18 and over 65 (Table 4).

Table 4: Population Distribution, 2013-2017

	Population	Median Age	Under 18 (%)	Over 65 (%)
Massachusetts	**6,789,319**	**39.4**	**20.4**	**15.5**
Brookline	59,246	34.1	18.6	15.6
Lexington	33,339	45.0	26.1	18.7
Needham	30,429	43.6	26.9	18.2
Newton	88,479	40.9	22.2	16.8

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Race and Ethnicity

An extensive body of research illustrates the health disparities and differences in health care access and utilization that exist for diverse individuals/cohorts and foreign-born populations. According to the CDC, Black/African American, non-Hispanic/Latinos have higher rates of premature death, infant mortality and preventable hospitalization than do White, non-Hispanics/Latinos.[3] Hispanics/Latinos have the highest uninsured rates of any racial or ethnic group in the United States.[4] Asian, non-Hispanic/Latinos

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[3] Centers for Disease Control and Prevention, "CDC Health Disparities and Inequalities Report (CHDIR)," Centers for Disease Control and Prevention Web Site, https://www.cdc.gov/minorityhealth/chdireport.html, September 10, 2015
[4] US Department of Health and Human Services: Office of Minority Health. Hispanic/Latino profile. https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=64

are at a higher risk for developing diabetes than those of European ancestry, despite a lower average BMI.[5] These disparities show the disproportionate and often avoidable inequities that exist within communities and reinforce the importance of understanding the demographic makeup of a community to identify populations more likely to experience adverse health outcomes.

Boston and Chelsea

Boston is diverse, with 23% of residents identifying as Black/African American, non-Hispanic/Latino, 19% identifying as Hispanic/Latino, and 9% identifying as Asian, non-Hispanic/Latino. While Boston's population increased by 8% between 2012 and 2017, the percentage of Hispanic/Latino residents increased by 20%.[6] Among the neighborhoods in BIDMC's CBSA:

- Black/African American, non-Hispanic/Latino residents make up a larger proportion of the population in Roxbury (40.8%) and Dorchester (44.8% and 49.0%) compared to Boston overall (22.7%)
- Fenway (18.3%) and Allston/Brighton (17.7%) are among the neighborhoods with the highest proportion of Asian, non-Hispanic/Latino residents
- Hispanic/Latino residents make up a larger proportion of the population in the 02121 and 02125 zip codes in Dorchester (24.6%) and Roxbury (27.3%) compared to Boston overall (19.4%)

Table 5: Race/Ethnicity by Boston Neighborhood, 2013-2017

	Asian, Non-Hispanic/Latino	Black, Non-Hispanic/Latino	Hispanic/Latino	White, Non-Hispanic/Latino	Other
Boston	9.4%	22.7%	19.4%	44.9%	3.6%
Allston/Brighton	17.7%	4.9%	11.7%	61.7%	8.6%
Dorchester (02121, 02125)	6.7%	44.8%	24.6%	17.5%	6.5%
Dorchester (02122, 02124)	9.9%	49.0%	14.8%	21.6%	4.7%
Fenway	18.3%	5.6%	12.9%	60.0%	3.2%
Roxbury	8.3%	40.8%	27.3%	20.0%	3.7%
South End	23.0%	11.7%	16.6%	45.8%	2.8%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; South End includes South End and Chinatown; Latino includes residents who identify as Latino regardless of race and racial categories include residents who do not identify as Latino; Other includes American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some other race, and Two or more races; NA denotes where data not presented due to insufficient sample size

In Chelsea, the percentage of residents who identify as Hispanic or Latino is 66%, compared to 11% for Massachusetts overall.

Table 6: Race/Ethnicity in Chelsea, 2012-2016

	White, Non-Hispanic/Latino	Hispanic/Latino	Black/African American,	Asian, Non-H/L	Two or More Races, Non-

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[5] https://asiandiabetesprevention.org/what-is-diabetes/why-are-asians-higher-risk Why are Asians at a Higher Risk?
[6] US Census Bureau, 2008-2012 and 2013-2017

	(H/L)		Non-H/L		H/L
Massachusetts	74%	11%%	7%	6%	2%
Chelsea	23%	66%	5%	3%	3%

Source: American Community Survey (ACS), 2012-2016

Other BIDMC CBSA Municipalities

In the communities in BIDMC's CBSA that are outside of Boston and Chelsea, the percentage of the population that identify as Asian, non-Hispanic/Latino are significantly higher compared to the Commonwealth overall (Table 7). Across other racial and ethnic categorizations, the percentages are significantly lower.

Table 7: Race/Ethnicity by Municipality, 2013-2017

	White, Non-Hispanic/Latino (H/L)	Hispanic/Latino	Black/African American, Non-H/L	Asian, Non-H/L	Two or More Races, Non-H/L
Massachusetts	**78.9%**	**7.4%**	**11.2%**	**6.3%**	**3.1%**
Brookline	75.3%	3.3%	5.9%	15.7%	4.2%
Lexington	68.3%	0.8%	2.1%	27.3%	3.0%
Needham	86.6%	2.1%	2.7%	8.2%	2.7%
Newton	77.4%	3.2%	5.5%	14.3%	3.3%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017
Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Foreign-Born

Foreign-born individuals tend to have lower mortality rates and are less likely than native-born populations to incur certain chronic/complex conditions (e.g., obesity, circulatory diseases, and some cancers). However, many foreign-born cohorts face significant barriers to care that impede their ability to access health care treatment and support services, social services, and other community resources.[7]

Boston and Chelsea

The percentage of Boston residents who were born outside of the United States was 28% overall, and was significantly higher in several neighborhoods, including Dorchester (Figure 6). Individuals who participated in the Boston CHNA-CHIP Collaborative assessment as key informant interviewees or focus group participants reported that Boston's immigrant community was strong and thriving. Approximately 15% of Boston residents are naturalized United States citizens, of which 5.5% are undocumented. Participants in focus groups and community forums identified that undocumented residents were in need of more outreach and services.[8]

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[7] Cunningham, SA, Ruben, JD, Narayan KM. Health of foreign-born people in the United States: A review. *Health Place*, 2008; 14(4): 623-35. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/18242116
[8] Boston CHNA-CHIP Collaborative Report 2019

Figure 6: Percent Foreign Born Population, by Boston and Neighborhood, 2013-2017
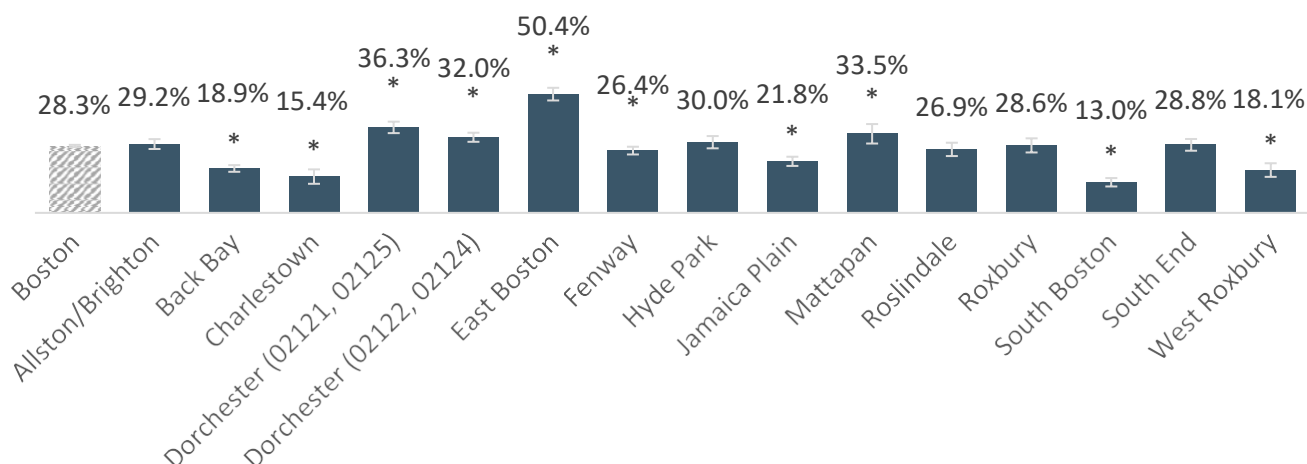
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk denotes where the neighborhood estimate is significantly different compared to the Boston estimate (p<0.05); Error bars show 95% confidence interval

A key theme from community engagement efforts in Chelsea was the rich diversity and lack of racial tension. Many participants in focus groups and key informant interviews reported a desire to see more community engagement highlighting the city's diversity to further break down barriers. Nearly half of all residents in Chelsea were foreign-born (45%) in 2012-2016.

Figure 7: Foreign-born population in Chelsea, 2012-2016
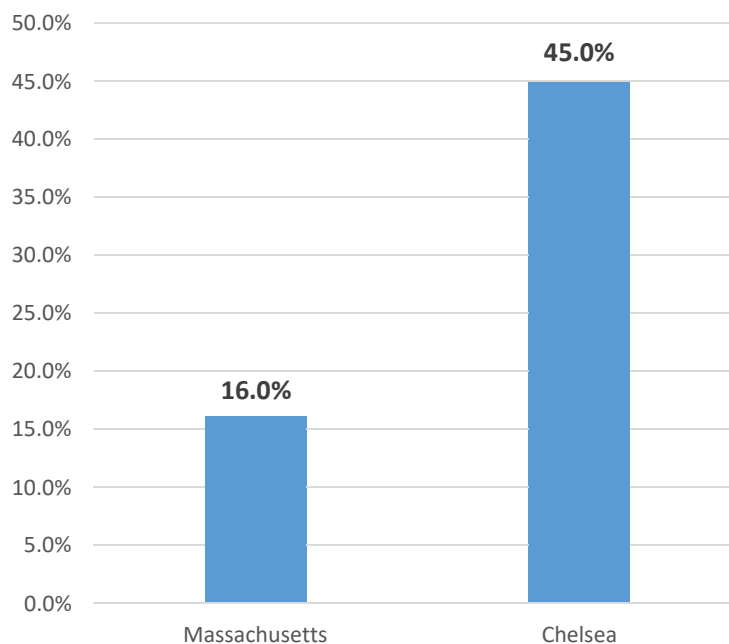
Data Source: American Community Survey (ACS), 2012-2016

Other BIDMC CBSA Municipalities

Among the other municipalities in BIDMC's CBSA, the percentage of the population that is foreign born is significantly higher than the Commonwealth overall, with the exception of Needham, where the percentage is significantly lower. Key informant interviewees from these municipalities felt that foreign-born populations, especially those with limited English proficiency, face significant barriers to care and may struggle to navigate the health system due to language and cultural barriers. Informants also felt that fear and anxiety around immigration status contributed to reluctance of foreign-born populations to seek out health care and social services.

Figure 8: Foreign-born Residents, 2013-2017

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017

Language

Language barriers pose significant challenges to providing effective and high-quality community services and health care. While many larger health care institutions, including BIDMC, have medical interpreter services available at their facilities, research has found that the health care providers' cultural competency is key to reducing racial and ethnic health disparities.[9]

Boston and Chelsea

Nearly 38% of Boston residents speak a language other than English in their home; among neighborhoods in BIDMC's CBSA, percentages are significantly higher in Dorchester (zip codes 02121 and 02125), Roxbury, and the South End (including Chinatown) compared to Boston overall (Figure 9). According to individuals who participated in focus groups for the Boston CHNA-CHIP Collaborative

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[9] Denboba DL, Bragdon JL, Epstein LG, Garthright K, McCann Goldman T. Reducing health disparities through cultural competence. *Journal of Health Education,* 1998; 29(1): S47-S53

assessment, the city's language diversity is a major strength. However, among focus groups participants who spoke a language other than English, it takes longer to access some services.

Figure 9: Percent Population 5 Years and Over Who Speak a Language Other Than English, by Boston and Neighborhood, 2013-2017
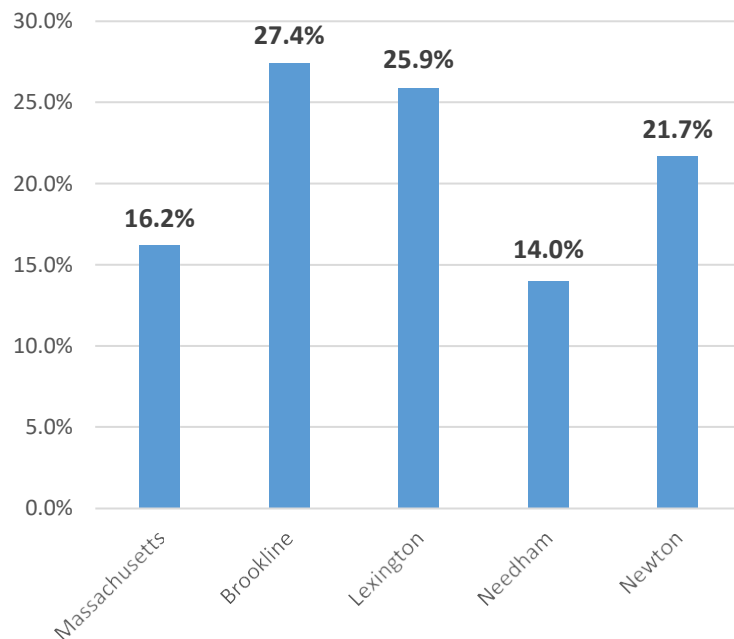

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk denotes where the neighborhood estimate is significantly different compared to the Boston estimate (p<0.05); Error bars show 95% confidence interval

The most common languages spoken in the Boston neighborhoods that are part of BIDMC's CBSA are included in Table 8.

Table 1: Most Common Non-English Languages Spoken by Neighborhood, 2013-2017

Neighborhood	Most Common Language Spoken	Percent
Allston/Brighton	Chinese (including Mandarin, Cantonese)	9.3%
Dorchester (02121, 02125)	Spanish	21.6%
Dorchester (02122, 02124)	Spanish	12.5%
Fenway	Spanish	10.4%
Roxbury	Spanish	25.3%
South End	Chinese (including Mandarin, Cantonese)	16.5%

NOTE: Neighborhoods as defined by Boston Public Health Commission; South End includes South End and Chinatown
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017

In Chelsea, 11% of residents do not speak English at all, and 18% do not speak English well. Among students in the Chelsea public school district, 38% are English language learners.

Figure 10: Language in Chelsea Public Schools, 2018-2019
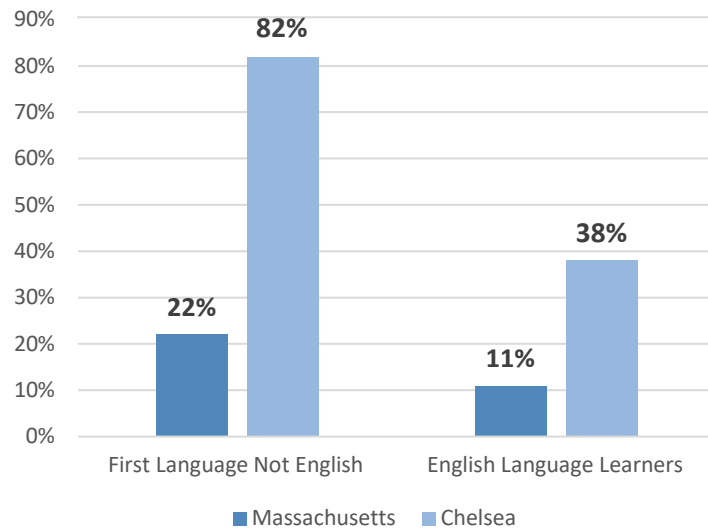
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

Other BIDMC CBSA Municipalities

Among all other municipalities, the percentage of individuals who speak a language other than English was significantly higher compared to the Commonwealth overall, with the exception of Needham. However, among those who speak a language other than English, the percentage who spoke English less than very well was significantly lower compared to the Commonwealth in Lexington, Needham, and Newton. This suggests that non-English speakers had been in the area for longer periods or had received formal English training.

The percentage who spoke Asian and Pacific Islander languages was significantly lower compared to the Commonwealth in Brookline, Lexington, and Needham, as was the percentage who spoke English less than very well.

Table 2: Language and Limited English Proficiency, 2013-2017

	Language Other than English	Language Other Than English; Speak English Less than "Very Well"	Asian and Pacific Islander Languages	Asian and Pacific Islander Languages; Speak English Less than "Very Well"
Massachusetts	**23.1%**	**9.1%**	**4.2%**	**2.0%**
Brookline	31.9%	9.5%	11.5%	5.2%
Lexington	31.1%	7.2%	16.6%	5.3%
Needham	16.6%	4.4%	4.1%	1.5%
Newton	26.2%	7.1%	9.8%	3.6%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016
Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Key Findings: Social Determinants of Health

The social determinants of health (SDOH) are the conditions in which people live, work, learn and play.[10] These conditions influence and define quality of life for many segments of the population in BIDMC's CBSA.

Socioeconomic Characteristics

Socioeconomic status (SES), as measured by income, employment status, occupation, education and the extent to which one lives in areas of economic disadvantage, is closely linked to morbidity, mortality and overall well-being. Lower than average life expectancy is highly correlated with low income status.[11]

Education

Higher education is associated with improved health outcomes and social development at the individual and community levels.[12] Compared to individuals with more education, people with less education are more likely to experience health issues such as obesity, substance use, and injury.[13] The health benefits of higher education typically include better access to resources, safer and more stable housing, and better engagement with providers. Proximate factors associated with low education that affect health outcomes include the inability to navigate the health care system, educational disparities in personal health behaviors, and exposure to chronic stress.[14] It is important to note that, while education affects health, poor health status may also be a barrier to education.

Boston and Chelsea

Nearly half of adults in Boston (48.2%) ages 25 years old or older have a college degree or higher; this is significantly higher compared to the Commonwealth overall. Despite this, there are significant differences in educational attainment by neighborhood and by race/ethnicity.

- Approximately 70% of White, non-Hispanic/Latino residents have a college degree, while only approximately 20% of Black/African American, non-Hispanic/Latinos and Hispanic/Latino residents do. Nearly 60% of Asian, non-Hispanic/Latino residents hold a college degree.[15]
- Only 4% of White, non-Hispanic/Latino residents do not have a high school diploma. 26.1% of Hispanic/Latino adult residents do not have a high school diploma.

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[10] Centers for Disease Control and Prevention, "Social Determinants of Health: Know What Affects Health," Centers for Disease Control and Prevention Web Site, https://www.cdc.gov/socialdeterminants/, January 29, 2018.

[11] Chetty R, Stepener M, Abraham S, Lin S, Scuderi B, Turner N, Bergeron A, and Cutler D, The association between Income and Life Expectancy in the United States, 2001-2014," *Journal of the American Medical Association* 315, no. 16 (April 26, 2016): 1750-1766.

[12] Emily B. Zimmerman, Steven H. Woolf, and Amber Haley, "Population Health: Behavioral and Social Science Insights – Understanding the Relationship Between Education and Health," Agency for Healthcare Research and Quality Web Site, https://www.ahrq.gov/professionals/education/curriculum-tools/ population-health/ zimmerman.html, September 2015

[13] Centers for Disease Control and Prevention, "Adolescent and School Health: Health Disparities," Centers for Disease Control and Prevention Web Site, https://www.cdc.gov/healthyyouth/disparities/index.htm, August 17, 2018

[14] Zimmerman, *Population Health*

[15] U.S. Census Bureau, American Community Survey 1-Year Estimates, 2017

Among neighborhoods in BIDMC's CBSA, Roxbury, Dorchester, and the South End (including Chinatown) have significantly higher percentages of residents without a high school diploma compared to Boston overall (Figure 11).

Figure 11: Population 25 Years and Older with Less Than a High School Diploma by Neighborhood, 2013-2017
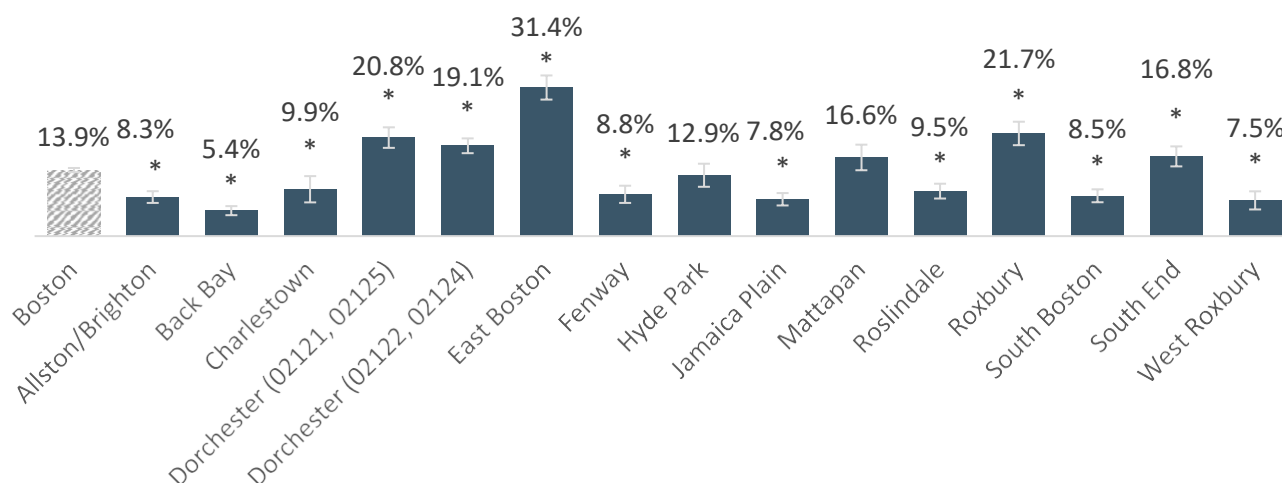
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Among students in Boston public schools, 20.3% are students with disabilities (students who have Individualized Education Programs), and 56.5% are considered economically disadvantaged; over 75% of students are "high needs," meaning they are low income, are economically disadvantaged, are a current or former English Language Learner, or have a disability.[16]

In Chelsea, educational attainment percentages were significantly lower compared to the Commonwealth overall across nearly all levels. As seen in Figure 12, over one-fifth (22%) of residents did not attend high school, and 33% had less than a high school diploma. Looking at higher levels of attainment, less than 10% of residents had a Master's degree or higher compared to 18% in the Commonwealth overall.

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[16] Massachusetts Department of Elementary and Secondary Education, School District Profiles 2017

Figure 12: Educational Attainment in Chelsea, 2012-2016
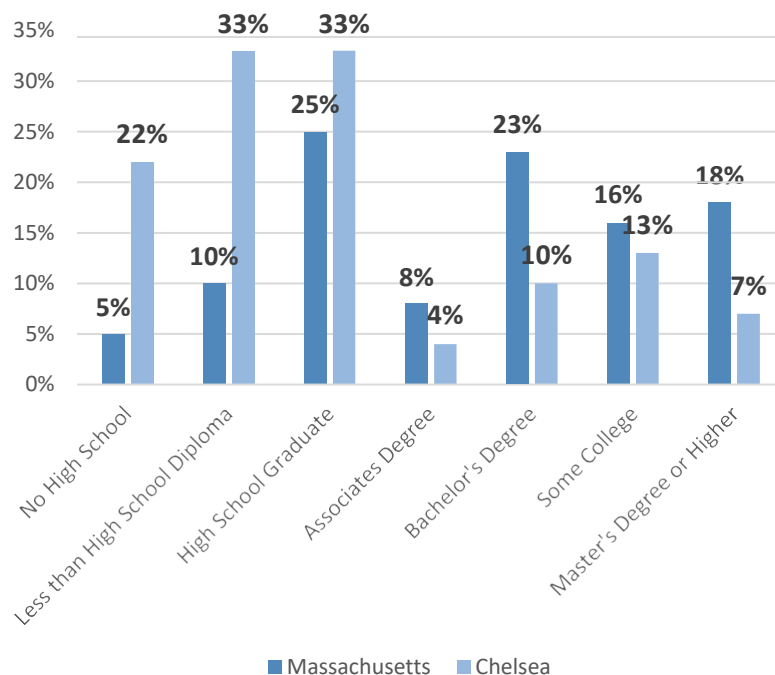
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

Other BIDMC CBSA Municipalities

The percentage of the population with a high school degree and the percentage with a Bachelor's degree or higher was significantly higher in all municipalities compared to the Commonwealth overall. Looking at information from the Massachusetts Department of Elementary and Secondary Education:

- The dropout rate was lower than the Commonwealth in all municipalities
- The percentage of students in Lexington public schools whose first language was not English was 30.8%, compared to 21.9% for the Commonwealth overall
- The percentage of students who are English language learners, disabled, high needs, and economically disadvantaged are lower in all municipalities compared to the Commonwealth

Table 3: Characteristics among Public School Students, 2017

	Graduation Rate	Drop Out Rate	First Language not English	English Language Leaners	Students with Disabilities	High Needs	Economically Disadvantaged
Massachusetts	**88.3%**	**4.9%**	**21.9%**	**10.5%**	**18.1%**	**47.6%**	**31.2%**
Brookline	93.5%	1.5%	31.8%	11.0%	15.8%	35.7%	9.3%
Lexington	98.5%	0.2%	30.8%	8.8%	14.1%	29.7%	5.4%
Needham	97.6%	0.2%	9.6%	2.9%	17.2%	24.2%	5.3%
Newton	96.0%	0.4%	25.1%	6.5%	18.7%	33.5%	8.7%

Source: Massachusetts Department of Elementary and Secondary Education, School and District Profiles

Employment

Lack of gainful and reliable employment is linked to several barriers to care, including lack of health insurance, inability to pay for health care services and copays, and inability to pay for transportation. Certain populations struggle to find and retain employment for a variety of reasons—ranging from mental and physical health issues, to lack of childcare, to transportation issues and other factors.

Boston and Chelsea

According to the US Census Bureau, 7.3% of Boston residents were unemployed in 2013-2017. However, when looking at unemployment data by neighborhood and by race/ethnicity, unemployment rates were significantly higher in several Boston neighborhoods, including Dorchester, Roxbury, and Fenway compared to Boston overall.

Figure 13: Unemployment among Population 16 and Older by Neighborhood, 2013-2017
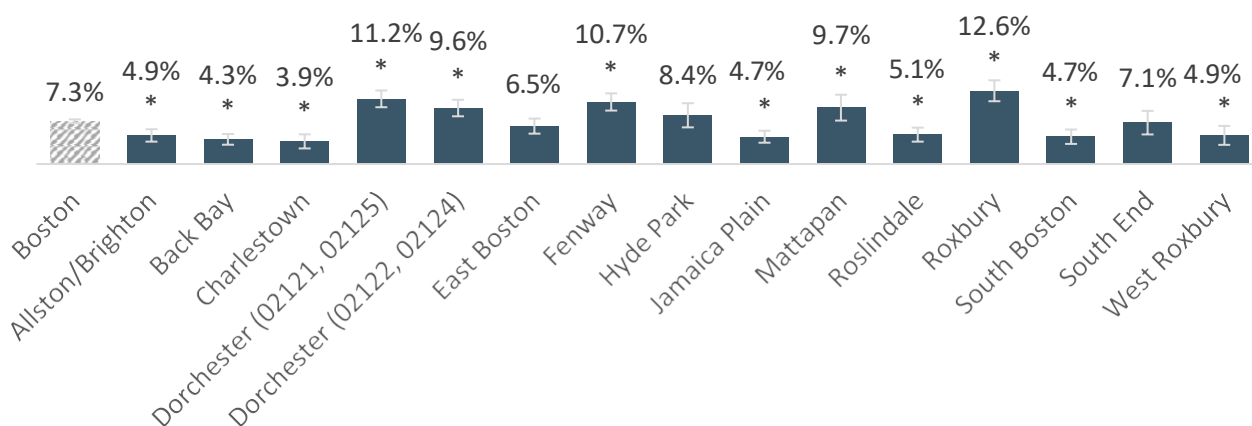
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

In focus groups for the Boston CHNA-CHIP Collaborative, participants shared that immigrants, individuals with limited education, and those with a criminal record were more likely to struggle with employment issues. Participants shared a number of issues that impeded people's ability to get a job, including educational requirements, mandatory background checks, and issues navigating web-based job applications.

While the unemployment rate was low in Boston overall, many individuals who responded to the Boston CHNA-CHIP Collaborative assessment reported that were underemployed, wanting higher pay, or desired greater job satisfaction.

In a 2014 study of LGBTQ youth of color living in Greater Boston, approximately 33% were unemployed. To meet their needs, over half of study participants (53%) reported that they received public benefits/government assistance.[17] Research consistently shows that LGBTQ individuals experience high levels of discrimination in the workplace, which has negative effects on wages, job opportunities, productivity, job satisfaction, and health.[18]

In Chelsea, the percentage of the population that was unemployed was similar to the Commonwealth overall (5.5%) in 2013-2017.

Other BIDMC CBSA Municipalities

Among other municipalities in BIDMC's CBSA, the unemployment rate was significantly lower than the Commonwealth overall, with the exception of Lexington.

Table 4: Unemployment Rate, 2013-2017

	Unemployment Rate Among Civilian Labor Force
Massachusetts	6.0%
Brookline	3.6%
Lexington	4.9%
Needham	4.3%
Newton	3.7%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Income and Poverty

Like education, income affects all aspects of an individual's life, including the ability to secure housing, needed goods (e.g., food, clothing), and services (e.g., transportation, healthcare, childcare). It may also affect one's ability to maintain good health.

Boston and Chelsea

In Boston, the percentage of residents living below the federal poverty level varied greatly by neighborhood and by race/ethnicity. Among Boston neighborhoods, the percentage of residents living below the federal poverty level was highest in Fenway (36.7%) and Roxbury (34.4%) in 2013-2017, followed by Dorchester (02121, 02125; 28.4%), and the South End (including Chinatown) (24.6%).

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[17] *From Equality and Equity: Advancing the LGBT Community in Massachusetts, A Special Report of Boston Indicators and the Fenway Institute, 2018 (Page 29). Survey data is from* Conron K, Wilson J, Cahill S, Flaherty J, Tamanaha M, Bradford J (2015). Our health matters: Mental health, risk, and resilience among LGBTQ youth of color who live, work, or play in Boston. Boston: Fenway Institute, BAGLY, Boston GLASS.

[18] Sears, B and Mallory C. Employment discrimination against LGBT people: Existence and impact. Gender identity and sexual orientation discrimination in the workplace: A practical guide. UCLA: The Williams Institute. Retrieved from Retrieved from https://escholarship.org/uc/item/9qs0n354

Figure 14: Population Living Below the Poverty Level by Neighborhood, 2013-2017
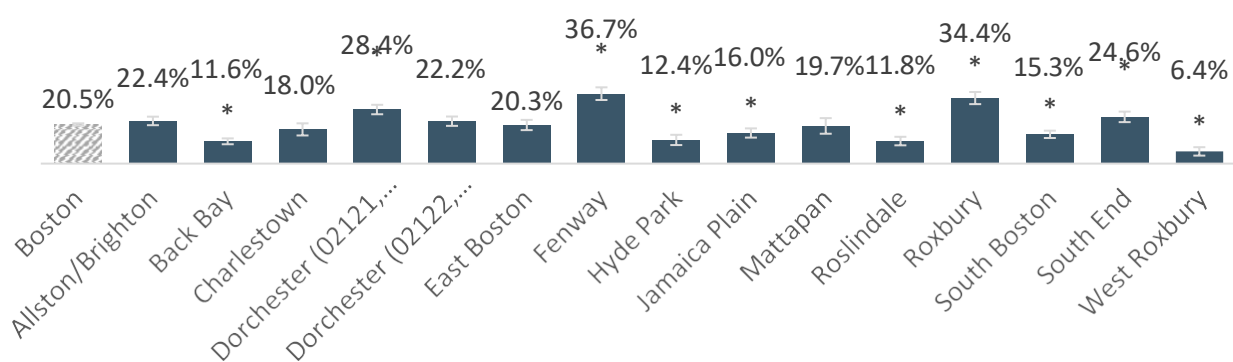
Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2013-2017. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Among all Boston residents, the median household income was highest for White, non-Hispanic/Latino residents and lowest for Hispanic/Latinos. In focus groups and key informant interviews for the Boston CHNA-CHIP Collaborative assessment, participants discussed the impacts of poverty on health. A large number of Boston CHNA-CHIP Collaborative assessment respondents reported that they struggled to pay for household costs (e.g., mortgages, utility bills, medical bills, credit cards), needed goods (e.g., groceries), and services (e.g., childcare). Non-White respondents and those without a college degree reported these hardships more often than those who were White, non-Hispanic/Latino and college educated.

Among the Chelsea residents who responded to the iCHNA survey, 38% identified poverty as being an important health concern. According to the U.S. Census Bureau, the median household income was significantly lower in Chelsea ($51,839) compared to the Commonwealth overall ($74,167). Looking across racial/ethnic cohorts in Chelsea, the median household income was lowest among Asian, non-Hispanic/Latino residents ($42,478) and highest amongst those who were multi-racial ($56,149).

Table 5: Median Income by Race/Ethnicity, 2012-2016

	Median Household Income (Overall)	MHI – White, non H/L alone	MHI – Black/African American, non-H/L alone	MHI – Hispanic/Latino	MHI – Asian, non-H/L alone	MHI – Multi-race, non-H/L
Massachusetts	**$70,954**	**$75,387**	**$44,117**	**$37,100**	**$82,020**	**$52,864**
Chelsea	$49,164	$49,593	$46,000	$50,298	$42,478	$56,149

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

Other BIDMC CBSA Municipalities

Among other municipalities in the CBSA, the percentage of the population who lived below the federal poverty level was significantly lower compared to the Commonwealth overall; the percentages were also significantly lower across different population cohorts (e.g., families, under 18, over 65, female headed households). While these numbers indicate that very small numbers live in poverty within these municipalities, key informants reported that many individuals struggle – especially older adults living on fixed incomes, and individuals in "moderate" income brackets who do not qualify for financial assistance or social service programs.

Housing

Lack of affordable housing and poor housing conditions contributes to a wide range of health issues, including respiratory diseases, lead poisoning, infectious disease and poor mental health.[19] At the extreme are those without housing, including those who are homeless or living in unstable or transient housing situations. They are more likely to delay medical care and have mortality rates four times higher than those who have secure housing.[20]

Boston and Chelsea

In Boston, more than half (52.1%) of renter-occupied units and one-third (35%) of owner-occupied units spent 30% or more of their income on housing costs. In the Fenway neighborhood, 59% of individuals spent at least 30% of their income on housing costs compared to the Boston overall average (52.1%). Similarly, a significantly higher proportion of residents in Fenway (41%) spent at least 30% of their income on housing.

Figure 15. Percent Housing Units Where 30% or More of Income Spent on Monthly Housing Costs, by Renter, by Boston and Neighborhood, 2013-2017

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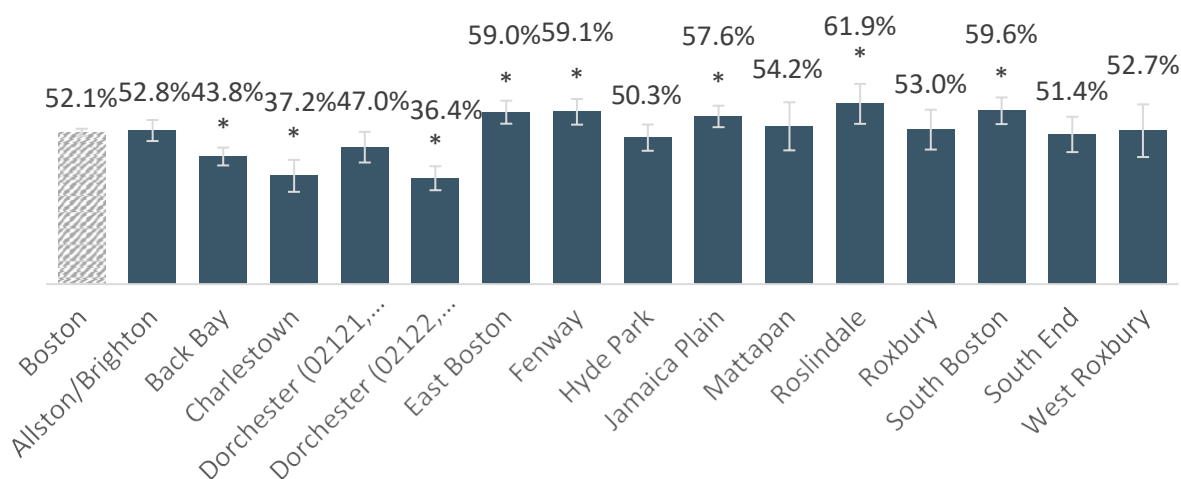
[19] James Krieger and Donna L. Higgins, "Housing and Health: Time Again for Public Health Action," *American Journal of Public Health* 92, no. 5 (2002): 758-768.

[20] Thomas Kottke, Andriana Abariotes, and Joel B. Spoonheim, "Access to Affordable Housing Promotes Health and Well-Being and Reduces Hospital Visits," *The Permanente Journal* 22, (2018): 17-079.

Survey respondents to the Quality of Life Survey, administered as part of the iCHNA, ranked housing as the second top health concern in their community. When the survey was administered in 2015, housing was not identified as a top five health concern.

In interviews and focus groups for the iCHNA, community health workers (CHWs), many of whom work with foreign-born populations, reported that there are "slumlords" in the community - property owners who do not maintain adequate housing conditions. The CHWs relayed that fears around deportation prevented many immigrant residents from reporting the poor housing conditions.

Almost half (47%) of households in Chelsea were burdened by household costs compared to 37% for the Commonwealth overall. Percentages were slightly higher among renter households (49%) compared to owner occupied household (42%).

Figure 16: Cost-Burdened Households in Chelsea, 2012-2016
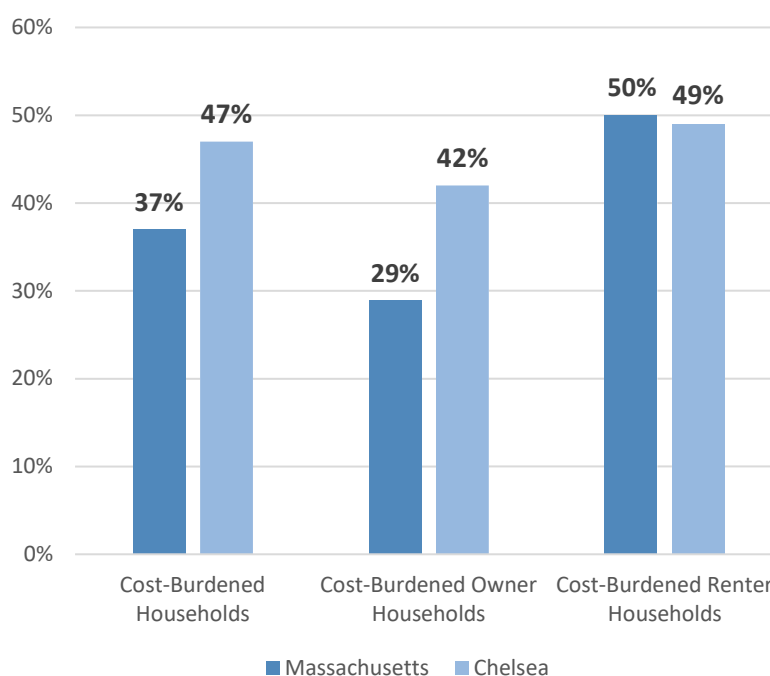
Finally, according to the Massachusetts Department of Elementary and Secondary Education's Office of Student and Family support, there were 462 homeless youth in Chelsea throughout the 2017-2018 school year.

Other BIDMC CBSA Municipalities

Among the other municipalities in BIDMC's CBSA, the percentage of owner-occupied units was significantly higher compared to the Commonwealth overall. The percentage of renter-occupied units was significantly lower, with the exception of Brookline. Across communities, the percentage of cost-burdened owner and renter occupied units were similar or significantly lower compared to the Commonwealth.

Table 13: Housing Characteristics, 2013-2017

	Vacant Housing Units (%)	Owner-occupied (%)	Owner-occupied units with monthly owner costs >30% total household income (%)	Renter-occupied (%)	Renter-occupied units with gross rent >30% total household income
Massachusetts	**9.7%**	**62.4%**	**31.5%**	**37.6%**	**50.1%**
Brookline	5.7%	50.9%	31.6%	49.1%	48.7%
Lexington	3.9%	80.8%	29.7%	19.2%	38.2%
Needham	2.8%	82.6%	27.8%	17.4%	49.2%
Newton	5.1%	71.3%	28.3%	28.7%	47.5%

Source: US Census Bureau, American Community Survey, 2013-2017

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Transportation

Lack of transportation has a significant impact on access to health care services and is a determinant of whether an individual or family has the ability to access the basic resources that allow them to live productive and fulfilling lives. Access to affordable and reliable transportation widens opportunity and is essential to addressing poverty and unemployment; it allows access to work, school, healthy foods, recreational facilities and a myriad of other community resources.

Boston and Chelsea

Nearly 40% of Boston residents use a personal vehicle to commute to work, while 34% utilize public transportation; walking to work (15%) and carpooling (6%) was also reported. These percentages varied by neighborhood:

- The percentage of residents who utilized transportation to commute to and from work was significantly higher compared to Boston in Roxbury (40%), Dorchester (37-38%), and Allston/Brighton (35%)
- In Fenway (28%) and the South End (including Chinatown) (28%), the percentage of residents who utilized public transportation to commute to work was significantly lower compared to Boston overall

In focus groups for the Boston CHNA-CHIP Collaborative assessment, residents expressed many concerns around transportation costs, timeliness, and accessibility. These issues were especially troublesome for older adults, individuals with limited English proficiency, and for residents of neighborhoods with fewer transportation options. Participants also expressed concerns around parking and traffic.

Transportation was identified as a barrier to health care; participants noted that there were several issues with public transportation and transportation programs that impeded one's ability to keep medical appointments, including unreliable schedules, overcrowding, and requirements to schedule in advance.

In Chelsea, access to transportation was identified as both a community asset and a challenge. Participants in focus groups and key informant interviews noted that although there were Massachusetts Bay Transit Authority (MBTA) bus and Silver Line options to get around Chelsea and in and out of Boston, these options were often crowded and unreliable. In Chelsea:

Figure 17: Vehicle Ownership in Chelsea, 2012-2016

Source: US Census Bureau 5-Year Estimates, 2012-2016

- 28% of residents relied on public transit to get to work and/or school, compared to 10% of Massachusetts residents overall
- 60% of residents drove to work, compared to 79% of Massachusetts residents overall
- 31% of households had no vehicle, compared to 13% in Massachusetts overall

Other BIDMC CBSA Municipalities

Many of the municipalities in BIDMC's CBSA have options for public transportation (e.g., buses, trains, commuter rail) in and out of Boston and other surrounding communities. In all communities except Lexington, the percentage of residents who utilized public transportation to commute to work was significantly high compared to the Commonwealth.

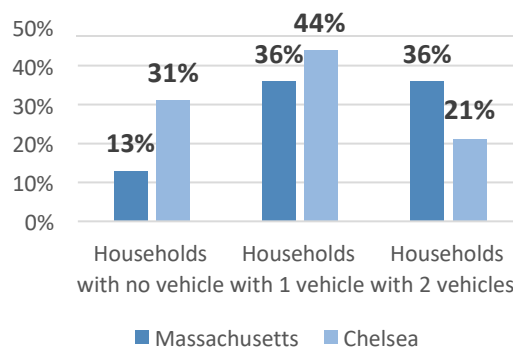The mean commute time was similar to the Commonwealth overall in all communities. With the exception of Lexington, the percentage of residents who worked outside of their county of residence was significantly higher compared to the Commonwealth overall. It is likely that many of the residents of these communities travel to Boston (Suffolk County) for work.

Table 14: Commuter Characteristics, 2013-2017

	Takes car, truck, van (alone) to work	Takes public transportation (excluding cab) to work	Mean commute time (minutes) to work	Worked outside county of residence
Massachusetts	**70.7%**	**10.2%**	**29**	**30.8%**
Brookline	35.3%	30.7%	29	75.9%
Lexington	71.8%	8.5%	32	25.7%
Needham	71.4%	10.6%	30	55.5%
Newton	64.1%	11.9%	28	41.7%

Source: US Census Bureau, American Community Survey, 2013-2017

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Food Access

There is an substantive body of evidence to show that many families, particularly low income families of color, struggle to access food that is affordable, high-quality and healthy.[21] While it is important to have

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[21] Elsheikh E and Barhoum N. Structural racialization and food insecurity in the United States: A report to the U.N. Human Rights Committee on the International Covenant on Civil and Political Rights. 2013. Retrieved from https://haasinstitute.berkeley.edu/sites/default/files/Structural%20Racialization%20%20%26%20Food%20Insecurity%20in%20the%20US-%28Final%29.pdf

grocery stores placed throughout a community to promote access, research shows that there are a number of factors that influence healthy eating including quality and price of fruits and vegetables, marketing of unhealthy food and cultural appropriateness of food offerings.[22] Pantries and community meal programs have evolved from providing temporary or emergency food assistance to providing ongoing support for individuals, families, seniors living on a fixed income, people with disabilities and adults working multiple low-wage jobs to make ends meet.

Boston and Chelsea

Participants in Boston CHNA-CHIP Collaborative assessment focus groups and key informant interviews identified food accessibility as a critical concern, especially for particular neighborhoods and segments of the population. Participants reported that individuals in more affluent neighborhoods had better access to healthy foods, while low income neighborhoods and communities of color had fewer grocery stores, more convenience stores, and more fast food restaurants. Participants identified food assistance programs (e.g., food pantries, mobile markets) as critical community assets.

Approximately 17% of Boston adults experience food insecurity, though this percentage declined between 2010 and 2017. There were significant disparities at the neighborhood level:

- Residents of Dorchester and Roxbury had significantly higher percentages of residents who reported being food insecure compared to Boston overall
- Nearly 1/3rd of residents in Dorchester (02121, 02125) and Roxbury receive Supplemental Nutrition Assistance Program (SNAP) benefits compared to 20% in Boston overall

Figure 18: Residents Receiving Food Stamps/SNAP Benefits in Past 12 Months, by Neighborhood, 2013-2017
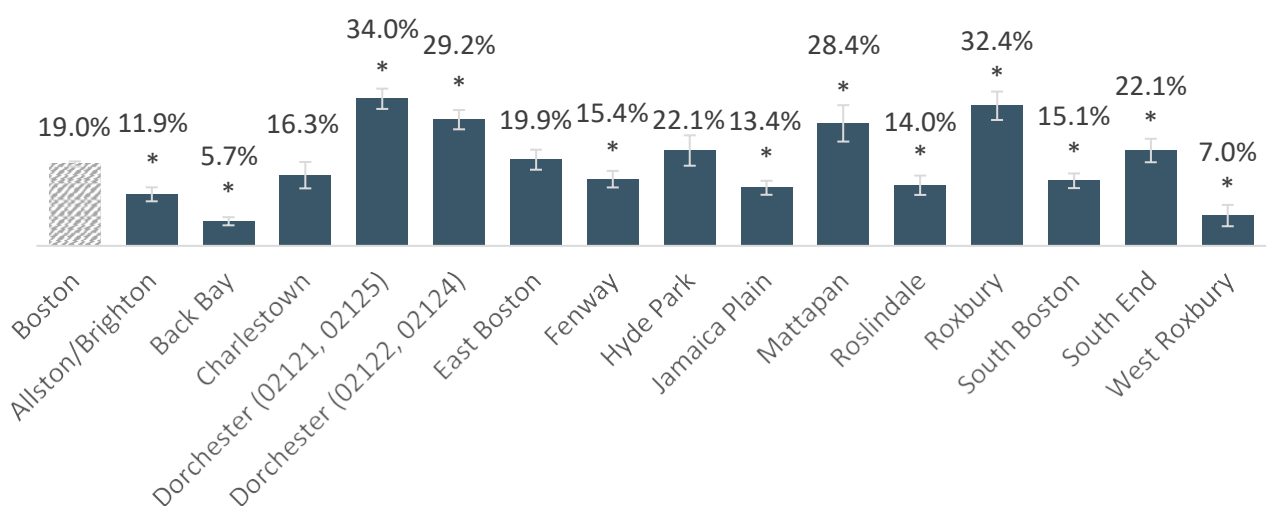
Source: US Census Bureau, American Community Survey, 2013-2017. *Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report*

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[22] The Food Trust, "Access to Healthy Food and Why It Matters: A Review of the Research," http://thefoodtrust.org/uploads/media_items/executive-summary-access-to-healthy-food-and-why-it-matters.original.pdf

Approximately 10% of Chelsea residents who responded to the iCHNA survey reported that they had gone hungry in the past 12 months because there was not enough money for food. The percentage of Chelsea households that received food stamps/SNAP benefits (30.2%) was double the percentage for Massachusetts overall (12.5%).

Other BIDMC CBSA Municipalities

Key informants from the municipalities outside of Boston and Chelsea were concerned with food insecurity, especially for frail elders, individuals with chronic/complex conditions, and those without access to transportation. While many communities offered assistance in the form of food pantries or meal delivery (e.g., Meals on Wheels), interviewees were concerned about the nutritional value of the food offered. Participants reported that it was difficult and/or expensive for individuals to access fresh fruits and vegetables or meals specialized to dietary restrictions (e.g., low-sodium, low-sugar).

Crime/Violence

Crime and violence, including domestic violence and intimate partner violence, are public health issues that influence health status on many levels, from death and injury, to emotional trauma, anxiety, isolation and absence of community cohesion.

Boston and Chelsea

Individuals who participated in the Boston CHNA-CHIP Collaborative assessment reported violence (including domestic violence) and the resulting trauma as major community health concerns, with individuals and communities of color and youth/adolescents disproportionately affected. Approximately 25% of Boston CHNA-CHIP Collaborative assessment respondents described their neighborhood as unsafe or extremely unsafe; Black/African American, non-Hispanic/Latino and Hispanic/Latino Assessment respondents were more likely to respond this way compared to White, non-Hispanic/Latino, Asian, non-Hispanic/Latino, or respondents of other race/ethnicities. Findings also varied by neighborhood:

- Residents of Allston/Brighton were significantly more likely than the rest of Boston to report experiencing violence in their lifetime (20%)
- Residents of Fenway were significantly less likely than the rest of Boston to report experiencing violence in their lifetime (8%) Boston CHNA-CHIP Collaborative assessment respondents from Roxbury (50%) and Dorchester (45%) were more likely than residents in other neighborhoods to report feeling unsafe when alone in their street at night as a serious problem
- Approximately half of Boston CHNA-CHIP Collaborative assessment respondents from Roxbury (50%) and Dorchester (45%) described their neighborhood as unsafe or extremely unsafe, a prevalence that was more than double that of all assessment respondents (25%)
- Boston CHNA-CHIP Collaborative assessment respondents from Dorchester (36%) were more likely to cite gunshots in their neighborhood over the past year as a serious problem compared to respondents in other Boston neighborhoods

Source: US Census Bureau, American Community Survey, 2013-2017. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Participants discussed many reasons and contributing factors as to why people feel unsafe in their community. In focus groups and key informant interviews, participants expressed that issues of intimate partner violence disproportionately affect women of color and non-English speakers. Exposure to violence in the home and the resulting trauma for youth was particularly concerning. In Chinatown, focus group participants suggested that the community's proximity to homeless shelters contributed to high rates of violence in the community. In Dorchester, key informants and focus group participants were particularly concerned around gun violence and the long-term impacts on individuals, families, and the community at-large. Bullying, both in-person and electronic, was a concern for youth, with female and LGBTQ students disproportionately affected. In some communities, issues around family separation and deportation were traumatic and contributed to feelings of anxiety and being unsafe.

Emergency department visits and deaths due to firearm injuries varied significantly by neighborhood.

- In Dorchester (02121, 02125, 02122, 02124), Roxbury, and the South End (including Chinatown), rates of nonfatal firearm related emergency department visits were significantly higher compared to Boston overall
- Among all Boston neighborhoods, the homicide by firearm rate was significantly higher in Dorchester (13.7 and 10.6 homicides per 100,000 residents) and Roxbury (7.3 homicides per 100,000) compared to Boston overall

Figure 20: Nonfatal Firearm Related Emergency Department Visit Rate, by Boston and Neighborhood, Age-Adjusted Rate per 100,000 Residents, 2013-2017 Combined

Source: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2013-2017 Combined.

Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

NOTES: Sample sizes for Back Bay, Fenway, Roslindale, and South Boston are ≤ 20 and rates should be interpreted with caution; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

In Chelsea, the violent crime rate and the property crime rate has decreased since 2010. In focus groups and key informant interviews for the iCHNA, Chelsea residents reported that although there were areas in Chelsea that people perceived to be unsafe, they felt safer than they had in the past.

Among Chelsea residents who responded to the iCHNA survey, 80% responded that they feel safe in their community; among those who reported that they had been treated badly or unfairly, 17% said it was because of their race or ethnicity.

Table 15: Percent of iCHNA survey respondents who in the past 12 months were treated badly or unfairly for their race, ethnicity, gender, sexuality, or religion

	Race or ethnicity	Gender or sexuality	Religion
All respondents	**12%**	**11%**	**3%**
Chelsea residents	17%	13%	3%

Source: North Suffolk Community Health Needs Assessment (iCHNA) Community Survey

Other BIDMC CBSA Municipalities

Crime and violence were not critical concerns in any of the other municipalities in BIDMC's CBSA. Violent crime counts (e.g., robbery, aggravated assault) were under 50 across all communities. Property crime counts (e.g., burglary, arson, larceny) were also low. Domestic violence, including intimate partner violence, was mentioned in a few key informant interviews and a number of the community meetings

and focus groups but it was not a dominant theme, typically referenced as part of broader discussion on community violence.

Built Environment

The built environment—buildings, streets, parks, open spaces and other forms of physical infrastructure—have major influences on physical activity and lifestyle. Creating safe outdoor spaces for people to exercise, relax, and commute is an important component in establishing healthy lifestyle habits that protect against poor health outcomes. While concerns related to the built environment were not key themes of this assessment, these issues can work to either prevent or contribute to disease and disability in the community.

Boston and Chelsea

Over 15% of land in Boston is comprised of green space, including parks, playgrounds, athletic fields, parkways, reservations, and beaches. The City has received a walk score of 81, which designates it as "very walkable." Despite these statistics, participants in focus groups and key informant interviews for the Boston CHNA-CHIP Collaborative assessment expressed concerns about disparities in the built environment across neighborhoods. In Allston/Brighton, Chinatown, and Dorchester, residents reported insufficient green space, attributable to a boon in new housing developments. Participants in Dorchester and Chinatown also expressed concerns around snow removal, lack of public restrooms, and pest control.

Across the city, residents were concerned about noise pollution, pollution from vehicles, and traffic; air pollution and air quality was a particular concern raised for residents in Chinatown due to proximity to highways and transportation hubs. Data from the Boston Behavioral Risk Factor Surveillance Survey (BBRFSS) shows Boston residents of colors and those of lower socioeconomic status experienced significantly higher rates of secondhand smoke exposure compared to Boston residents overall. Key informant interviewees were also concerned about the impacts of climate change, including extreme heat and rising seas, and the potential impacts on health.

Individuals may also be exposed to environmental hazards in their home. In the 2016 Health of Boston Report, it was reported that the Environmental and Occupational Health Division of the Boston Public Health Commission responded to requests for inspections for a number of potential health hazards in private homes, workplaces, and outdoor spaces. From 2012-2016, over 400 hazards and/or violations were identified due to mold. Most hazards and violations were in Dorchester (02121, 02125, 02122, and 02125) and Roxbury.

Figure 21. Number of Mold Hazards or Violations in Boston, by Neighborhood, 2012-2016
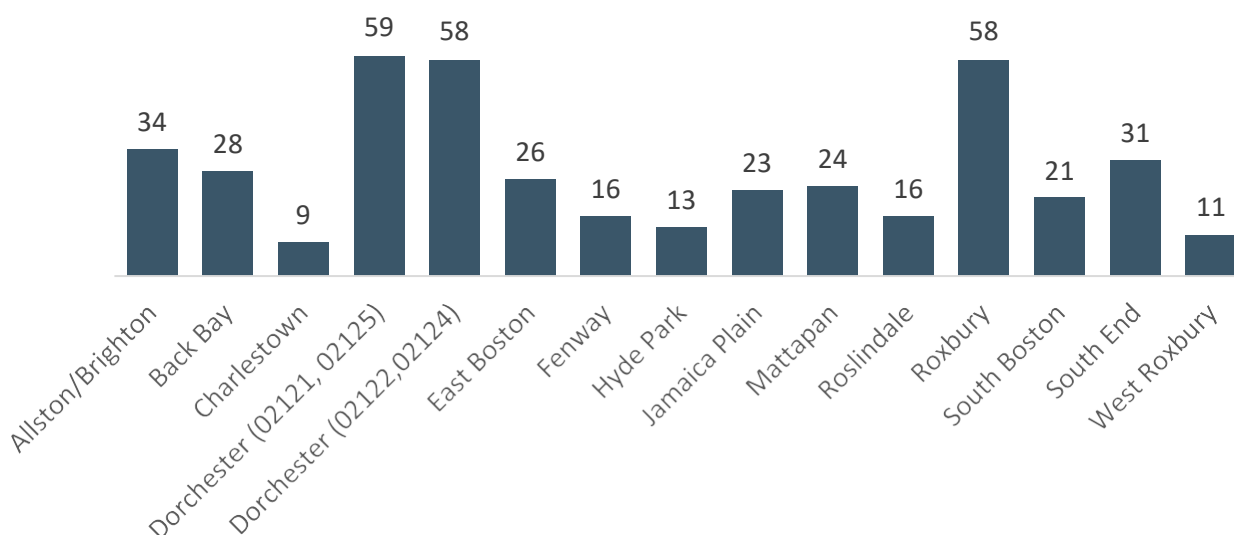
Bar chart values by neighborhood:
- Allston/Brighton: 34
- Back Bay: 28
- Charlestown: 9
- Dorchester (02121, 02125): 59
- Dorchester (02122, 02124): 58
- East Boston: 26
- Fenway: 16
- Hyde Park: 13
- Jamaica Plain: 23
- Mattapan: 24
- Roslindale: 16
- Roxbury: 58
- South Boston: 21
- South End: 31
- West Roxbury: 11

SOURCE: Environmental and Occupational Health Division, Boston Public Health Commission, as cited by Health of Boston (2016-2017), 2012-2016. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

In Chelsea, environmental health was the fifth leading health concern amongst residents who took the iCHNA survey. Within this category, trash/litter and outdoor air quality were the most significant concerns.

In Chelsea, a significantly higher percentage of residents are uninsured (7.1%) or have public health coverage (59.3%) compared to the Commonwealth overall (3.0% and 59.3%, respectively).[23] The iCHNA survey asked residents to choose which barriers individuals in their community faced when trying to access non-emergency medical care. In Chelsea, overall cost of care was the leading barrier (30%), followed by long wait-times (25%) and insurance (19%).

Other BIDMC CBSA Municipalities

Concerns around the built environment and environmental health were not discussed with key informants from other municipalities.

There was no identifiable secondary data available at the municipal level to quantify exposure to or impacts of environmental health hazards in these municipalities, so this information was not included. As concerns around the built environment, climate change, and the impact of exposure continue to rise nationwide, there is hope that new sources of data will emerge.

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[23] U.S. Census Bureau 5-Year Estimates, 2012-2016

Key Findings: Behavioral Risk Factors and Health Status

At the core of the CHNA process is understanding access-to-care issues, leading causes of morbidity and mortality, and the extent to which populations and communities participate in certain risky behaviors. This information is critical to assessing health status, clarifying health-related disparities and identifying health priorities. All assessment processes summarized in this report included data collection and analysis from a wide range of local, state, and federal sources. Qualitative information gathered from key informant interviews, focus groups, community meetings and surveys informed this section of the report by providing perspective on the confounding and contributing factors of illness, health priorities, barriers to care, service gaps, and possible strategic responses to the issues identified. This data augmented the quantitative data and allowed for the identification of vulnerable population cohorts.

Health Insurance and Access to Care

Whether an individual has health insurance—and the extent to which it helps to pay for needed acute services and access to a full continuum of high-quality, timely and accessible preventive and disease management or follow-up services—has been shown to be critical to overall health and well-being.[24] Access to a usual source of primary care is particularly important, since it greatly affects the individual's ability to receive regular preventive, routine, and urgent care, and to manage chronic diseases.

Boston and Chelsea

The City of Boston is rich in health care resources. Participants in focus groups, key informant interviews, and the Boston CHNA-CHIP Collaborative assessment indicated satisfaction with the health care options (e.g., doctors' offices, community health centers, health clinics) in the community. Data from the BRFSS indicated that approximately 80% of residents identify at least one person as their primary care provider. Among respondents to the Boston CHNA-CHIP Collaborative assessment, nearly three quarters reported having had a dental visit in the last year. Despite overall satisfaction and high rates of utilization, participants did identify several issues that prevent individuals from accessing the care they need, when and where they need it. The most common barriers to access included underinsurance, language and immigration status, navigation and care coordination, transportation, and lack of culturally sensitive approaches to care.[25] Respondents to the Boston CHNA-CHIP Collaborative assessment also identified long wait times and lack of weekend/evening appointments that impeded access.

There were also disparities in access and utilization by race/ethnicity.

- Asian, non-Hispanic/Latino and Hispanic/Latino residents were significantly less likely to report having one person as their personal doctor or health care provider than White, non-Hispanic/Latino residents

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[24] National Center for Health Statistics, "Health Insurance and Access to Care." February 2017. Retrieved from https://www.cdc.gov/nchs/data/factsheets/factsheet_hiac.pdf
[25] Boston CHNA-CHIP Collaborative Report

- Hispanic/Latino and Black/African American, non-Hispanic/Latino residents were less likely than White, non-Hispanic/Latino or Asian, non-Hispanic/Latino residents to have seen a dentist in the past year
- Higher percentages of Black/African American, non-Hispanic/Latino and Hispanic/Latino residents reported cost as a barrier to accessing medical and dental care

Underinsurance was a commonly identified barrier to care. Participants indicated that while an individual may be insured, the coverage might not be enough to adequately cover all health care needs. Focus group participants, especially those who are covered under MassHealth, reported that there were a limited number of specialty providers who accepted their insurance, or accepted it for the number of appointments needed to effectively treat or manage the condition. Overall, many individuals noted the complexity of the health insurance and the health care system and identified it as a barrier.

Findings from BIDMC's CHI, highlighted access to care as a major challenge for large proportions of community residents, particularly for those who are low income, covered by Medicaid, uninsured, recent immigrants, and non-English speakers. This is true for services across the continuum but particularly primary care, medical specialty care, and mental health/substance use services. Participants in two of the five CHI community meetings identified access to care as one of the top three health-related issues. Problems cited were related to shortages of providers, particularly non-English speaking providers, cost of care, and challenges navigating the system.

In Chelsea, a significantly high percentage of residents are uninsured (7.1%) or have public insurance coverage (59.3%) compared to the Commonwealth overall (3.0% and 35.5%, respectively).[26] The iCHNA survey asked residents to choose which barriers individuals in their community faced when trying to access non-emergency medical care. In Chelsea, overall cost of care was the leading barrier (30%), followed by long wait-times (25%) and insurance (19%).

Other BIDMC CBSA Municipalities

In the other municipalities in BIDMC's CBSA, the percentage of residents without health insurance or with public health coverage (e.g., MassHealth/Medicaid, Medicare) was significantly lower compared to the Commonwealth overall.

As in Boston and Chelsea, key informant interviewees discussed the complexity of the health insurance and health care system as a barrier to care, especially for older adults without dedicated caregivers and individuals with limited English proficiency. Underinsurance, especially for moderate-income individuals and families who do not qualify for public health coverage programs, was also a critical barrier to care. Interviewees reported that even for those with private insurance, some health care services, namely mental health and substance use treatment and support services, was unaffordable.

Table 16: Health Insurance, 2013-2017

	Without insurance	With public insurance	With private

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[26] U.S. Census Bureau, American Community Survey, 2012-2016

			insurance
Massachusetts	**3.0%**	**35.5%**	**74.2%**
Brookline	2.3%	20.2%	88.1%
Lexington	1.0%	22.3%	90.1%
Needham	1.4%	22.7%	90.0%
Newton	1.8%	23.3%	87.5%

Source: US Census Bureau, American Community Survey, 2013-2017

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Physical Activity, Nutrition, and Weight

Lack of physical fitness and poor nutrition are among the leading risk factors associated with obesity and chronic health issues. Adequate nutrition helps prevent disease and is essential for the healthy growth and development of children and adolescents, while overall fitness and the extent to which people are physically active reduce the risk for many chronic conditions and are linked to better emotional health. Over the past two decades, obesity rates in the United States have doubled for adults and tripled for children. Overall, these trends have spanned all segments of the population, regardless of age, sex, race, ethnicity, education, income, or geographic region.

Boston and Chelsea

More than 50% of Boston adults and over one-third of students in Boston Public Schools were overweight or obese. Participants in the Boston CHNA-CHIP Collaborative assessment key informant interviews and focus groups discussed concerns around obesity and its health effects. Looking at the data from the Boston CHNA-CHIP Collaborative there were significant disparities by neighborhood, race/ethnicity, sexual orientation/gender identity, and socioeconomic status.

- The percentage of adults who are obese or overweight was significantly higher in Dorchester (63-65%) compared to Boston overall (56.8%)
- Black/African American, non-Hispanic/Latino and Hispanic/Latino adults were more likely to be overweight or obese compared to White, non-Hispanic/Latino residents
- Significantly higher percentages of Black/African American, non-Hispanic/Latino (36%) and Hispanic/Latino (37%) high school students reported being obese or overweight than White, non-Hispanic/Latino high school students (23%)
- A significantly higher percentage of LGBTQ youth (38%) reported being obese or overweight compared to heterosexual or non-transgender youth (32%) – these trends are also seen nationally
- Individuals with lower educational attainment and lower income were more likely to be obese or overweight compared to other segments of the population

Figure 22: Percent Adults Reporting Obesity or Overweight, by Boston and Neighborhood, 2013, 2015, and 2017 Combined

Source: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Participants discussed a number of factors that contribute to high rates of obesity in certain neighborhoods; portions of Roxbury and Dorchester have limited access to grocery stores. This affects residents' ability to access fresh, nutritious foods that contribute to good health. Residents also discussed limited access to green space and exposure to environmental hazards, as discussed in the previous section on the built environment; these factors limit individuals' ability to exercise and be physically active.

In Chelsea, the percentages of public school students who were overweight or obese were higher than the Commonwealth overall across several grades. Participants in the iCHNA focus groups reported that more green and outdoor space were needed in all communities. Participants, especially youth participants, also reported a need for more activities to promote active lifestyles and interaction with others in the community.

Table 17: Percent of Overweight or Obese Public School Students in Chelsea, by Grade

	1st Grade	4th Grade	7th Grade	10 Grade
Massachusetts (2014-2015)	28%	34%	34%	33%
Chelsea (2018-2019)	47%	57%	62%	49%

Source: Massachusetts Department of Public Health, Public School District Reports

Other BIDMC CBSA Municipalities

Quantitative data on obesity and physical activity is extremely limited. Questions regarding being obese or overweight, consumption of fruits and vegetables, and physical activity/sedentary lifestyle are asked as part of the Behavioral Risk Factor Surveillance Survey, though this survey data is only available for the nation, state, and major metropolitan/micropolitan areas.

Key informant interviewees were concerned about poor nutrition and sedentary lifestyle, especially as risk factors to chronic and complex conditions (e.g., heart disease, cancer). As concerns around social isolation and technology addictions continue to grow, so do the potential impacts on health. Many recent observational studies point to relationships between screen media exposure and increased risks of obesity.[27]

All-Cause Mortality and Premature Mortality

All-cause mortality rates refer to death from any cause. These rates are important to understand as they may uncover patterns by geography or region. Premature (or early) mortality rates are often due to behavioral factors that are preventable or modifiable (e.g., substance use, physical inactivity, poor nutrition) and may be useful for identifying opportunities for new health programs or strategies.

Boston and Chelsea

Cancer and heart disease were the leading causes of death in Boston. Accidents, including unintentional overdoses, was the third leading cause of death.

Accidents were also the leading cause of premature death among individuals under the age of 65. Contributing factors varied by race/ethnicity:

- Among White, non-Hispanic/Latino and Hispanic/Latino residents, unintentional opioid overdoses accounted for over 70% of all accidental deaths
- Among Black/African American, non-Hispanic/Latino and Hispanic/Latino residents, homicide was one of the top five leading causes of premature death
- Among White, non-Hispanic/Latino and Asian, non-Hispanic/Latino residents, suicide was in the top five leading causes of premature death

Compared to the Commonwealth overall, mortality rates and premature mortality rates (<75 years) were significantly higher in both Boston and Chelsea.

Table 18: All-cause and Premature Mortality Rates, Age-adjusted Rates per 100,000 Residents, 2015

	All-cause mortality	Premature mortality (<75 years)
Massachusetts	**684.5**	**279.6**
Boston	722.9	341.7
Chelsea	911.1	399.4

Source: US Census Bureau, American Community Survey, 2013-2017

Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Other BIDMC CBSA Municipalities

Among other municipalities in BIDMC's CBSA, all-cause and premature mortality rates were significantly lower compared to the Commonwealth overall.

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[27] Robinson TN, Banda JA, Hale L, Lu AS, Fleming-Millici F, Calvert SL, Wartella E. Screen media exposure and obesity in children and adolescents. Pediatrics, November 2017; 40(2).

Chronic and Complex Conditions

Chronic conditions such as heart disease, cancer, stroke, asthma, and diabetes are the leading causes of death and disability in the United States, and are the leading drivers of the nation's $3.3 trillion annual healthcare costs.[28] Over half of American adults have at least one chronic condition, while 40% have two or more.[29] Perhaps most significantly, chronic diseases are largely preventable despite their high prevalence and dramatic impact on individuals and society. This underscores the need to focus on health risk factors, primary care engagement and evidence-based chronic disease management.

Cardiovascular and Cerebrovascular Diseases

Cardiovascular and cerebrovascular diseases, such as heart disease and stroke, are affected by a number of health and behavioral risk factors, including obesity and physical inactivity, tobacco use, and alcohol use. Hypertension, or high blood pressure, increases the risk of more serious health issues including heart failure, stroke and other forms of major cardiovascular disease. Racial disparities in heart disease and hypertension are well documented; Black/African American, non-Hispanic/Latinos are two to three times as likely as White, non-Hispanics/Latinos to die of preventable heart disease and stroke.[30] The age of onset for stroke is earlier for African Americans and Hispanic/Latinos compared to White, non-Hispanic/Latino.[31]

Boston and Chelsea

Among participants in the Boston CHNA-CHIP Collaborative assessment, neither heart disease nor stroke was identified as a key theme, though some acknowledged that there was high prevalence among older adults, and increasingly high incidence of heart disease in younger cohorts. Looking at quantitative data, there was significant disparities in reported prevalence across specific conditions and neighborhoods.

- A significantly higher percentage of residents in Roxbury (30%) and Dorchester (30%) reported having been diagnosed with hypertension compared to Boston overall (25%)
- Heart disease hospitalization rates were significantly higher in Roxbury (79.5 per 100,000), Dorchester (114.0 and 116.8 per 100,000), and the South End (including Chinatown) (106.5 per 100,000) compared to Boston overall (97.6 per 100,000 residents)
- The heart disease mortality rate was significantly higher in Roxbury (158.8 per 100,000) and significantly lower in Fenway (96.5 per 100,00) and the South End (including Chinatown) (101.4 per 100,000) compared to Boston overall (131.4 per 100,000)

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[28] Centers for Disease Control and Prevention, "Chronic Diseases in America," US Census Bureau, 2013-2017 ACS 5-Year Estimates, last updated April 15, 2019.

[29] CDC, *Chronic Diseases in America*

[30] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5638710/

[31] https://www.stroke.org/understand-stroke/impact-of-stroke/minorities-and-stroke/

Source: Boston Public Health Commission, Boston resident deaths, 2016-2017 Combined. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where estimate was significantly different compared to the rest of Boston

In Chelsea, mortality rates due to major cardiovascular disease, heart disease, and coronary heart disease were higher (though not significantly higher) or similar to the Commonwealth overall. However, the rate of cardiovascular hospital admissions was higher in Chelsea (1807.5 per 100,000 residents) compared to the Commonwealth overall (1563.0 per 100,000 residents).[32]

Table 19: Cardiovascular disease mortality, age-adjusted rates per 100,000 (2015)

	Major Cardiovascular Disease	Heart Disease	Coronary Heart Disease
Massachusetts	**180.8**	**138.7**	**82.3**
Boston	217.4	165.1	79.3
Chelsea	911.1	399.4	

Source: Massachusetts Department of Public Health, Registry of Vital Records and Statistics (2015)
Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Other BIDMC CBSA Municipalities

Among the other municipalities in BIDMC's CBSA, the mortality rate due to major cardiovascular disease, heart disease, coronary heart disease, and cerebrovascular disease was similar or significantly lower compared to the Commonwealth overall. Despite low numbers, key informant interviewees were

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[32] Center for Health Information and Analysis (CHIA); Age-adjusted rates per 100,000 (2007-2014)

concerned about the management of these conditions, especially for older adults. Left unmanaged, these conditions may exacerbate or lead to additional health issues (e.g., cancer, diabetes).

Figure 24: Heart Disease and Cerebrovascular Disease Mortality Rates, Age-adjusted Rates per 100,000,
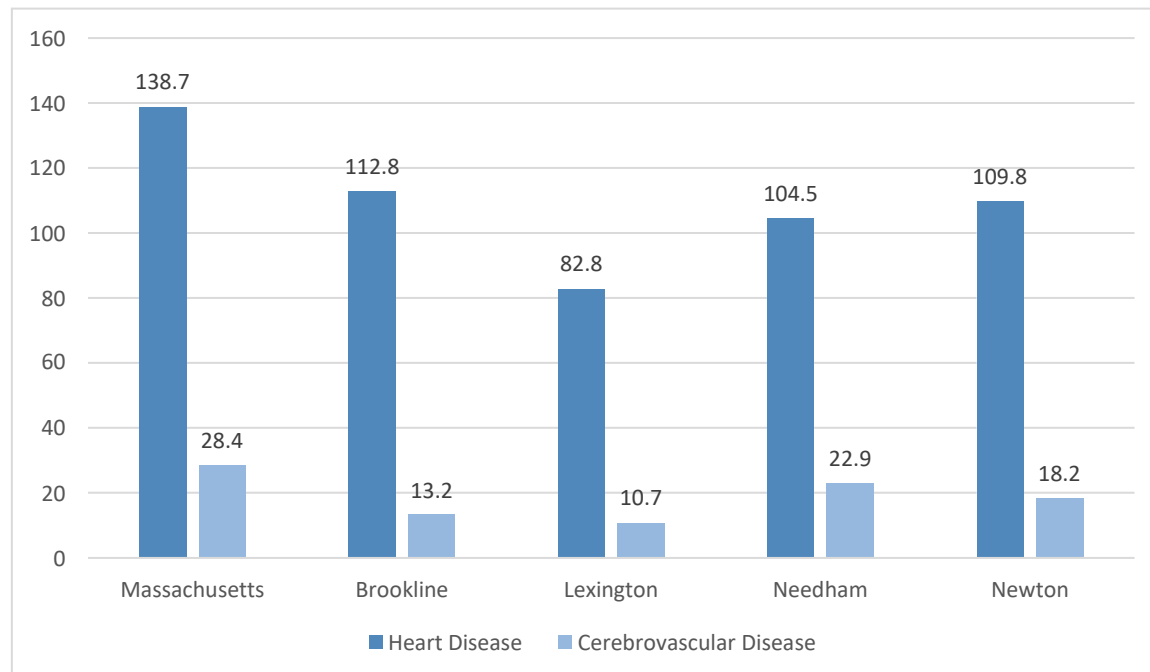
Source: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2015

Cancer

The most common cancer risk factors are well known: age, family history of cancer, alcohol and tobacco use, diet, exposure to cancer causing substances, chronic inflammation, and hormones.

Boston and Chelsea

Despite being the leading cause of death among Boston residents, cancer was not identified as a key concern among Boston CHNA-CHIP Collaborative assessment interviewees or focus group participants, with the exception of Chinatown. In Chinatown, participants discussed how high rates of tobacco use in the neighborhood contribute to cancer rates.

There were significant disparities in cancer mortality rates by race/ethnicity among Boston residents.
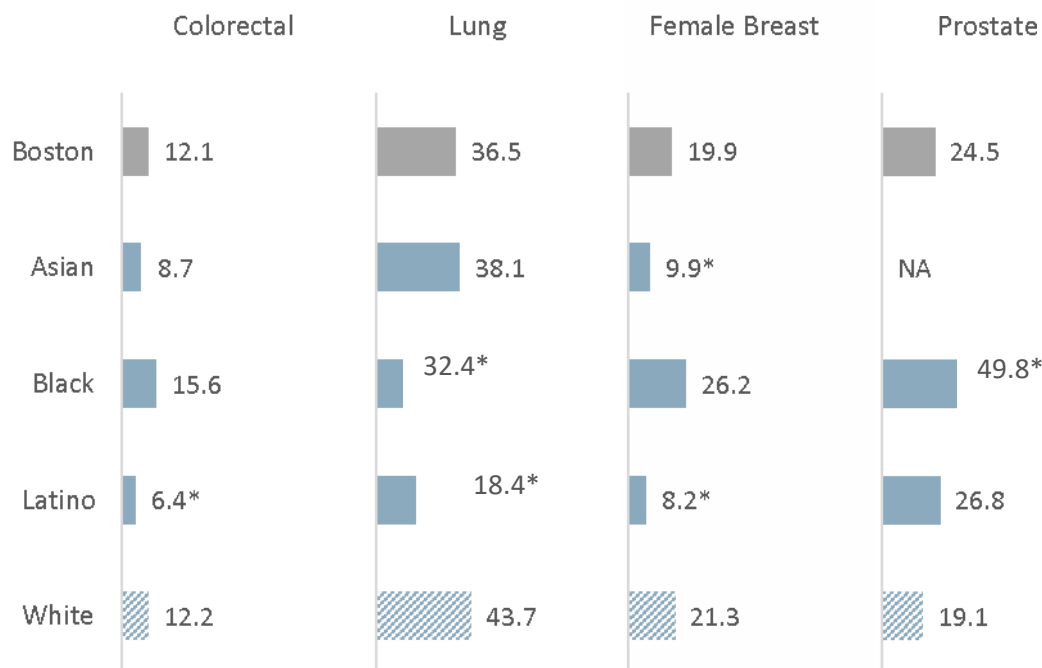
- The female breast cancer mortality rate was significantly lower among Asian, non-Hispanic/Latino residents (9.9 per 100,000) compared to Boston overall (19.9 per 100,000)
- Among Black/African American, non-Hispanic/Latino residents, the lung cancer mortality rate (32.4 per 100,000) was significantly lower and the prostate cancer mortality rate (49.8 per 100,000) was significantly higher compared to Boston overall (12.1 and 24.5 per 100,000 respectively)
- Among Hispanic/Latino residents, mortality rates for colorectal cancer (6.4 per 100,000), lung cancer (18.4 per 100,000) and female breast cancer (8.2 per 100,000) were significantly lower compared to Boston overall

	Colorectal	Lung	Female Breast	Prostate
Boston	12.1	36.5	19.9	24.5
Asian	8.7	38.1	9.9*	NA
Black	15.6	32.4*	26.2	49.8*
Latino	6.4*	18.4*	8.2*	26.8
White	12.2	43.7	21.3	19.1

SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

NOTE: NA denotes where data are suppressed due to insufficient sample size; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

In Chelsea, standardized incident ratios indicate that the incidence for several types of cancer (colon/rectum and lung cancer in males; all-types, brain/nervous system, cervical, and lung cancer in females) is higher than expected for both males and females.[33] A standardized incidence ratio of over 100 indicates that the incidence is higher than expected based on statewide average annual age-specific incidence rates.

Table 20: Cancer standardized incidence ratios in Chelsea (males and females), 2011-2015

	All sites/types	Brain and other nervous system	Breast	Cervical	Colon/rectum	Lung	Prostate
Males	90.6	96.4	-	-	116.6	127.5	72.7
Females	108.6	117.0	90.5	209.9	45.1	139.8	-

Source: Massachusetts Cancer Registry, 2011-2015

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[33] Massachusetts Cancer Registry *A standardized incident ratio (SIR) of exactly 100 indicates that a city/town's incidence of a certain type of cancer Is equal to that which could be expected based on statewide average age-specific incidence rates. An SIR of more than 100 indicates that a city/town's incidence of a certain type of cancer is higher than expected for that type of cancer based on statewide average annual age-specific incidence rates.

Other BIDMC CBSA Municipalities

As with cardiovascular disease, mortality across cancer types was significantly lower compared to the Commonwealth overall amongst other municipalities in BIDMC's CBSA. Cancer was not frequently mentioned as a critical concern in key informant interviews, though there was acknowledgement that individuals with cancer and their caregivers are in need of more financial and emotional support.

Figure 26: Cancer Mortality Rates by Type and Municipality, Age-adjusted Rates per 100,000, 2015
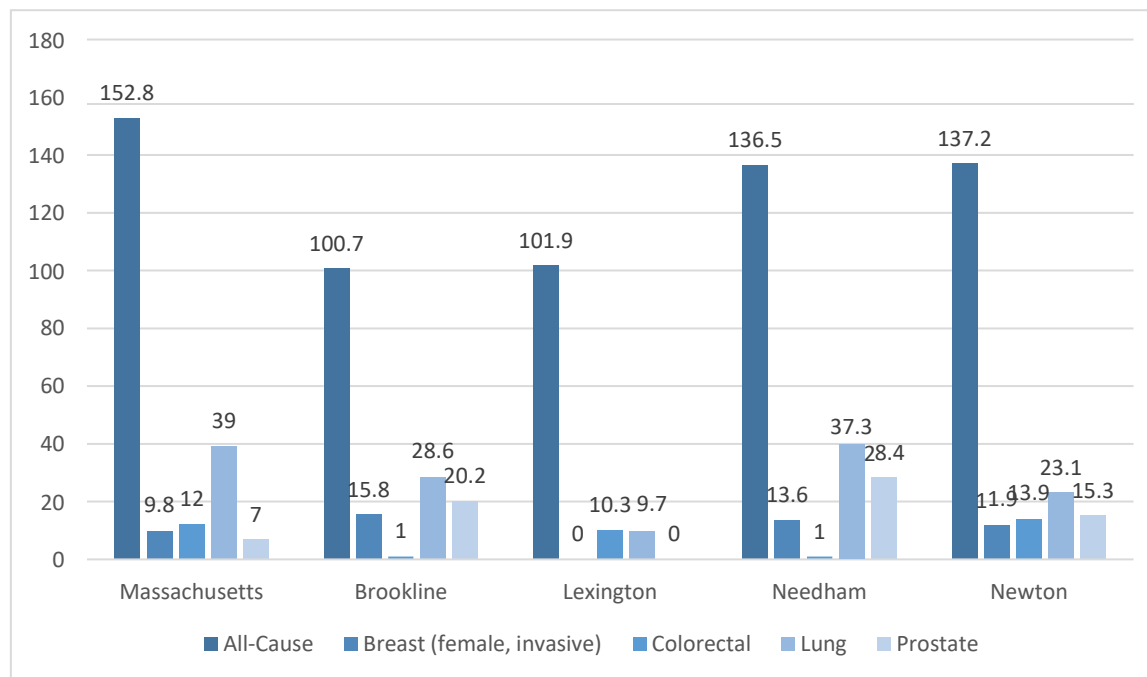
Source: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2015

Respiratory Diseases

Respiratory diseases such as asthma and chronic obstructive pulmonary disorder (COPD) are exacerbated by behavioral, environmental and location-based risk factors, including smoking, diet and nutrition, substandard housing and environmental exposures (e.g., air pollution, secondhand smoke). Respiratory diseases are the third leading cause of death in the United States. In many scenarios, quality of life for those with respiratory diseases can improve with proper care and management.[34]

Boston and Chelsea

In Boston, prevalence, ED discharges, and hospitalization rates due to asthma varied significantly by neighborhood.

- In Roxbury (15%) and Dorchester (15%), a significantly higher percentage of residents reported diagnoses asthma compared to Boston overall (11.2%)
- The asthma emergency discharge rate was significantly higher in Roxbury (205.1 per 10,000), Dorchester (160.4 and 167.2 per 10,000), and the South End (including Chinatown) (132.5 per

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[34] Office of Disease Prevention and Health Promotion, "Respiratory Diseases," Retrieved from
https://www.healthypeople.gov/2020/topics-objectives/topic/respiratory-diseases

10,000) compared to Boston overall (101.0 per 10,000). Rates were significantly lower in Allston/Brighton (64.5 per 10,000 residents)

- Asthma-related hospitalization rates were highest in Roxbury and Dorchester compared to Boston overall

Figure 27: Asthma Emergency Department Visit Rate, by Boston and Neighborhood, Age-Adjusted Rate per 10,000 Residents, 2016-2017 Combined
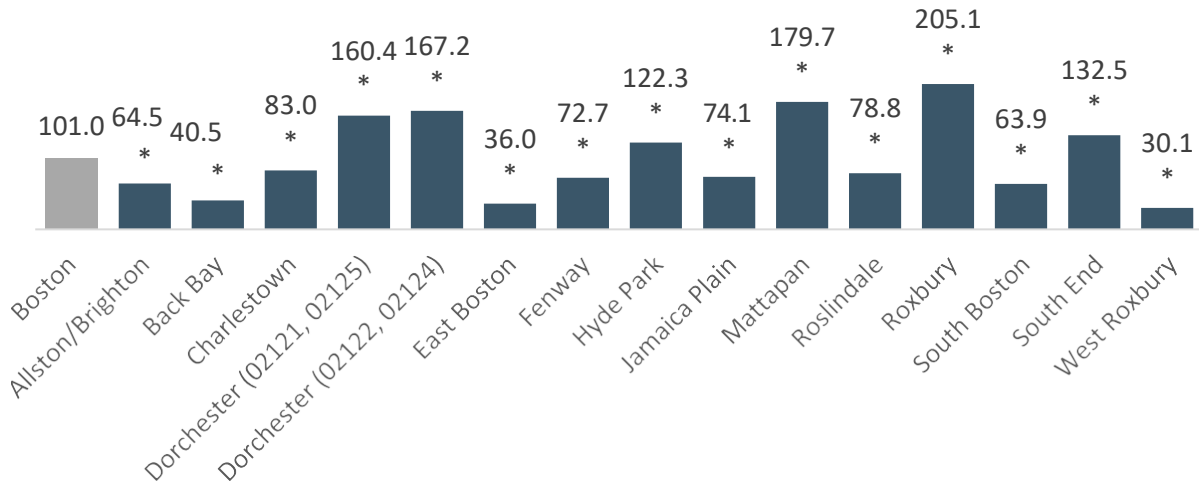
Source: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined. Boston Public Health Commission and HRiA as part of the Boston CHNA-CHIP Collaborative Report
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Among youth, the asthma ED discharge rates also varied significantly by neighborhood. Rates were significantly higher in Dorchester (268.8 and 248.8 per 10,000) and Roxbury (312.9 per 10,000) compared to Boston overall (191.5 per 100,000).

Figure 28: Asthma Emergency Department Visit Rate (Children Under 18 Years), by Boston and Neighborhood, Age-Specific Rate per 10,000 Residents, 2016-2017 Combined

In Chelsea, there were very few deaths due to asthma. The chronic lower respiratory disease mortality rate was higher compared to the Commonwealth overall (47.2 vs. 33.0 per 100,000) but not significantly.[35]

Other BIDMC CBSA Municipalities

Asthma and chronic lower respiratory disease mortality rates were lower or significantly lower in the other municipalities in BIDMC's CBSA compared to the Commonwealth overall.

Figure 29: Asthma and Chronic Lower Respiratory Disease Mortality, Age-adjusted Rates per 100,000, 2015
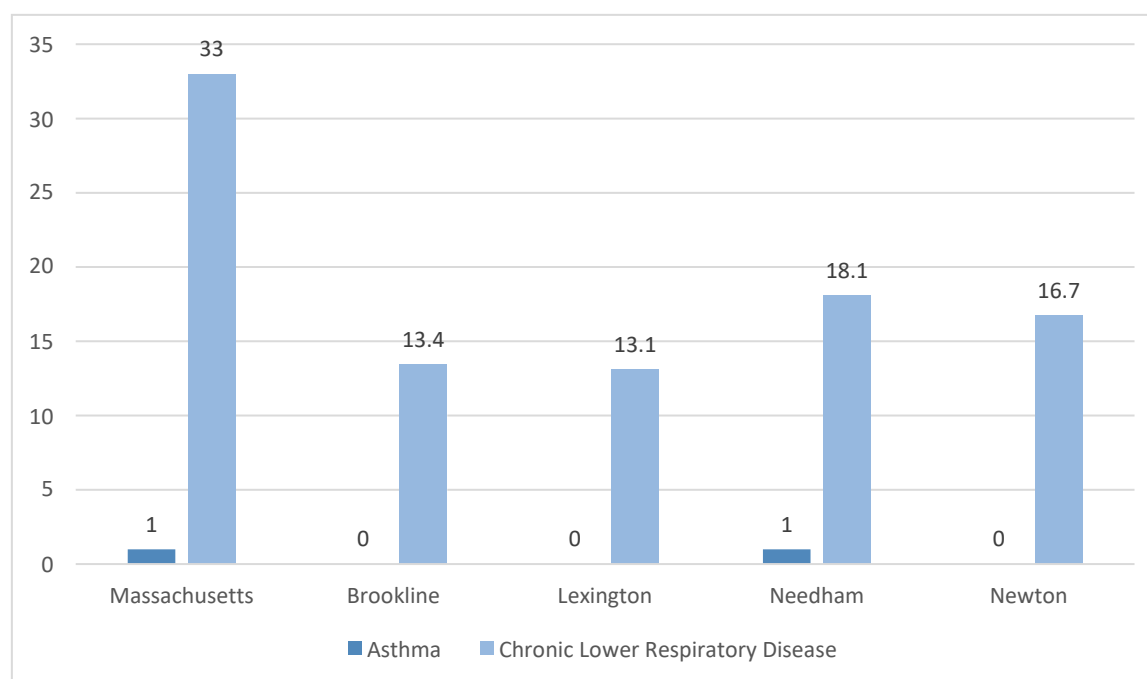
Source: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2015

Diabetes

Over the course of a lifetime, approximately 40% of adults in the U.S. are expected to develop type 2 diabetes—this number increases to over 50% for Hispanic/Latino men and women.[36] Several factors increase the risk of developing type 2 diabetes, including being overweight, physical inactivity, age, and family history. Having diabetes increases the risk of cardiovascular comorbidities (e.g., hypertension,

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[35] Massachusetts Department of Public Health, Registry of Vital Records and Statistics, age-adjusted rates per 100,0000 (2015)

[36] [38] Centers for Disease Control and Prevention, "Hispanic Health: Prevention Type 2 Diabetes," Centers for Disease Control and Prevention Web Site, https://www.cdc.gov/features/hispanichealth/index.html, September 18, 2017

atherosclerosis), may limit ability to engage in physical activity, and may have negative impacts on metabolism.[37]

Boston and Chelsea

Diabetes prevalence, hospitalization rates, and rates of ED discharge varied significantly by Boston neighborhood and by race/ethnicity:

- Significantly higher percentages of adults in Roxbury (14%) and Dorchester (13%) and significantly lower percentages of adults in Allston/Brighton (4%) and Fenway (4%) reported a diabetes diagnoses compared to Boston overall (9%) in 2013-2017
- The diabetes hospitalization rate was significantly higher in Roxbury, Dorchester, and the South End (including Chinatown) compared to the rest of Boston
- The diabetes mortality rates in Roxbury (44 deaths per 10,000) and Dorchester (37 per 10,000) were the highest among all Boston neighborhoods
- The diabetes mortality rate among Black/African American, non-Hispanic/Latino residents (40.7 per 10,000) and Hispanic/Latino (28.7 per 10,000) was significantly higher compared White, non-Hispanic/Latino residents (17.4 per 10,000) in 2016-2017. The diabetes mortality rate amongst Asian, non-Hispanic/Latino residents (9.1 per 10,000) was half of that for White, non-Hispanic/Latino residents

Figure 30: Percent Adults Reporting Diabetes Diagnosis, by Boston and Neighborhood, 2013, 2015, and 2017

Source: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report

DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

In Chelsea, deaths due to diabetes were significantly higher compared to the state overall (56.6 per 100,000 vs. 16.8 per 100,000 respectively).[38] Additionally, the rate of hospital admissions for diabetes

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[37] http://outpatient.aace.com/type-2-diabetes/management-of-common-comorbidities-of-diabetes

was higher compared to the Commonwealth overall (255.5 per 100,000 vs. 159 per 100,000) in 2014, though not significantly.[39] Participants in the iCHNA focus groups identified diabetes as one of the diseases/conditions that has significant effects on the community.

Other BIDMC CBSA Municipalities

The diabetes mortality rate amongst the other municipalities in BIDMC's CBSA was lower or significantly lower compared to the Commonwealth overall. While diabetes was not a key concern among key informants, many did discuss the importance of addressing risk factors that contribute to some forms of the disease (e.g., physical inactivity, poor nutrition, obesity).

Mental Health

Mental health—including depression, anxiety, stress, serious mental illness and other conditions—was overwhelmingly identified as one of the leading health issue for residents of BIDMC's CBSA.

Boston and Chelsea

Mental health was identified as a priority health issue in the Boston CHNA-CHIP Collaborative assessment; it was discussed in nearly all focus groups and interviews. Stress, anxiety, depression were specifically identified as issues and conditions of concern. Many participants discussed the interrelatedness of these and other mental health issues with trauma and poverty.

Overall, approximately one in five Boston adults reported that they felt persistent anxiety, and one in eight reported that they felt persistent sadness. While mental health affects all segments of the population, disparities in prevalence and intensity of issues were identified for specific neighborhoods, age groups, racial/ethnic segments, socioeconomic cohorts, and other groups. A prominent theme in focus groups and key informant interviews was concern for mental health issues amongst youth and adolescents.

- A higher percentage of females, Hispanic/Latinos, lower income individuals, young people, LGBTQ, and unemployed residents reported feeling persistent anxiety compared to other groups
- The rate of Boston Public High School students reporting persistent sadness is higher among those who identify as Hispanic/Latino, Black/African American, non-Hispanic/Latino, female, and LGBTQ
- The suicide rate in Dorchester (02122, 02124) was significantly higher compared to Boston overall
- Age-adjusted suicide rates were highest amongst White, non-Hispanic/Latino residents, men, and individuals ages 45-64

Beyond concerns around the prevalence of specific conditions, there was also discussion around barriers to mental health treatment and support services. Although data shows that the percentage of individuals who received treatment for depression has increased, participants reported that many residents experience barriers to care due to stigma, lack of providers, and cultural/linguistic norms.

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[38] Massachusetts Department of Public Health, Registry of Vital Records and Statistics; age-adjusted rates per 100,000 (2015)
[39] Center for Health Information and Analysis; age-adjusted rates per 100,000 (2007-2014)

Mental health was also a primary concern in Chelsea; it was consistently mentioned across all iCHNA focus groups, especially for youth and adolescents. In Chelsea:

- 28% of middle school students and 38% of high school students reported feeling sad or hopeless for more than two weeks in a row. Both data points are higher than percentages for Massachusetts overall
- 20% of middle school students and 13% of high school students reported having seriously considered suicide. Both data points are higher than percentages in Massachusetts overall

Figure 31: Middle School and High School Students Reporting Feeling Sad/Hopeless for 2+ Weeks
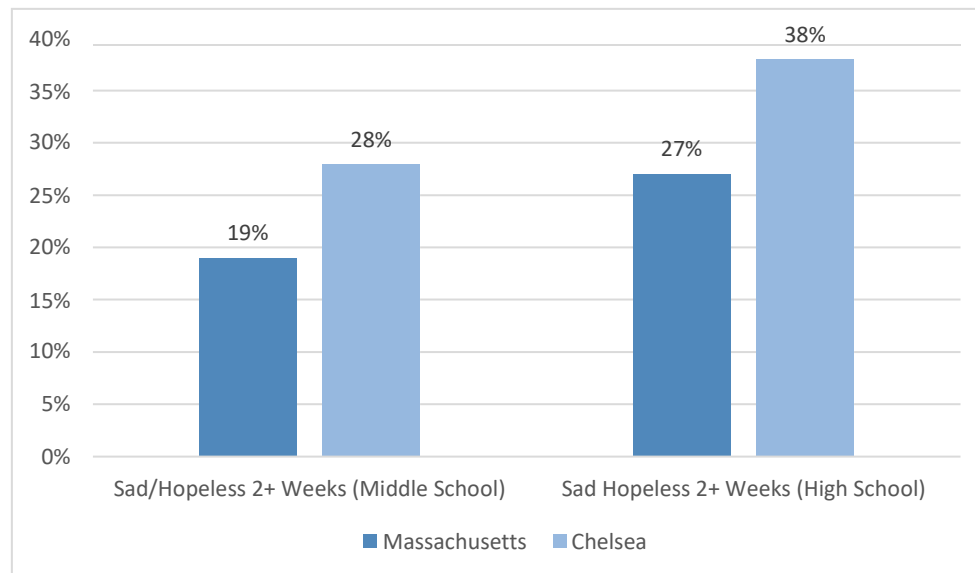
Other BIDMC CBSA Municipalities

The rate of mental health disorder mortality and suicide deaths were lower or significantly lower among other municipalities in BIDMC's CBSA. However, mental health issues were identified as key community health concerns across all key informant interviews. Participants identified mental health as an issue across all segments of the population, but were particularly concerned about depression, anxiety, and stress amongst youth and social isolation amongst older adults.

Figure 32: Mental Disorder and Suicide Mortality, Age-adjusted rates per 100,000, 2015
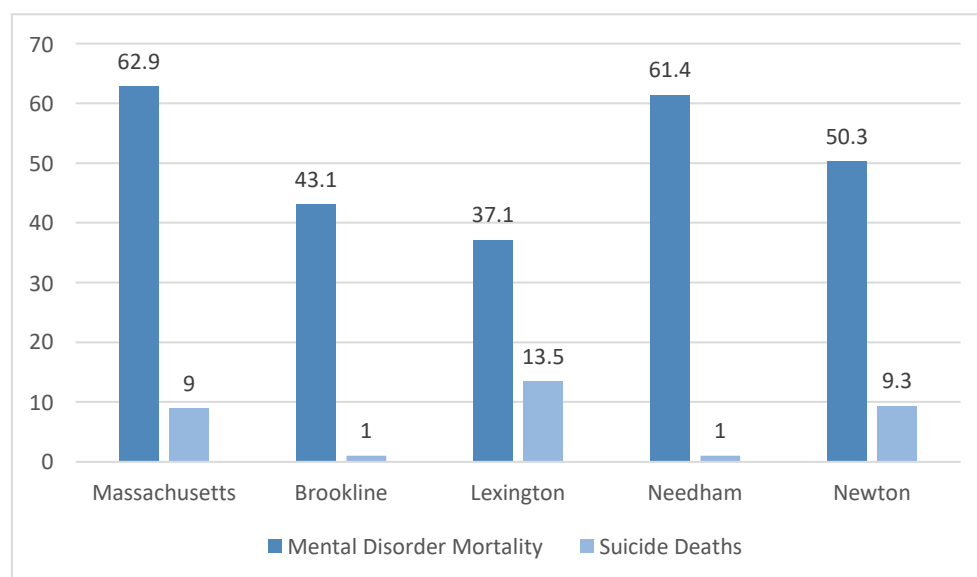
Source: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2015

The Massachusetts Healthy Aging Collaborative released a series of Healthy Aging Community Profiles in 2018. These documents include a range of data points pertaining to health behaviors, social determinants, and the physical and mental health status of older adults. Looking across the communities in BIDMC's CBSA that are outside of Boston and Chelsea:

- The percentage of adults 60+ with reported 15 or more days of poor mental health within the last month was lower in all municipalities compared to the Commonwealth overall
- The percentage of adults 65+ with depression was significantly high in Brookline (35.2%) and significantly low in Needham (29.5%) compared to the Commonwealth overall (31.5%)
- The percentage of adults 65+ with anxiety was significantly low in all Brookline, Lexington, Needham, and Newton compared to the Commonwealth overall

Figure 33: Mental Health among Older Adults, 2018

	Adults >60 with 15+ days poor mental health in last month	Adults 65+ with depression	Adults 65+ with anxiety
Massachusetts	**7.0%**	**31.5%**	**25.4%**
Brookline	5.8%	35.2%	26.0%
Lexington	5.6%	30.6%	21.9%
Needham	5.8%	29.5%	22.7%
Newton	5.8%	31.6%	23.3%

Source: Massachusetts Healthy Aging Collaborative, Healthy Aging Community Profiles, 2018
Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Substance Use

Along with mental health, substance use was identified as a critical community health concern across all assessments. As with mental health services, there are a number of community partners working to fill service gaps and address the needs of both individuals and the at-large community, although some individuals may face delays or barriers to care due to limited providers and specialists, limited treatment beds and social determinants that impede access (e.g., insurance coverage, transportation, employment, linguistic capacity, health literacy).

Boston and Chelsea

Participants in activities for the Boston CHNA-CHIP Collaborative assessment identified substance use as a priority health issue; marijuana, prescription drugs, and opioids were the most concerning substances identified.

The impacts of the opioid epidemic on individuals, families, and communities was a key theme of focus groups and interviews. Focus group participants in the South End (Chinatown) and Roxbury spoke about the health and safety hazards of drug paraphernalia on the streets, especially for youth and adolescents.

As seen throughout the Boston CHNA-CHIP Collaborative assessment results, there were disparities in prevalence of use and health outcomes by population groups:

- LGBTQ adults and youth are more likely to use tobacco, e-cigarettes, marijuana, alcohol, and prescription drugs compared to heterosexual and non-transgender adults and youth
- The rate of opioid overdose deaths has increased significantly since 2013, and was highest amongst Hispanic/Latino and White, non-Hispanic/Latino residents
- The percentage of residents who currently smoke was significantly higher in the South End (including Chinatown) (22.2%) and Dorchester (21.9%) compared to Boston overall (16.5%)

Figure 34: Percent Adults Reporting Current Smoking, by Boston and Neighborhood, 2013, 2015, and 2017 Combined

Focus group participants and key informants were particularly concerned about issues of substance use and youth. Some individuals reported that the overprescribing and diagnoses of mental and behavioral health issues (e.g., ADHD) enabled addictive behaviors among youth by contributing to overmedication. Participants also suggested that behavioral health issues might stem from undiagnosed mental health issues and trauma. One focus group participant noted that there has been a significant increase in ADHD diagnoses among Black/African American, non-Hispanic/Latino and Hispanic/Latino youth.

In Chelsea, substance use, including opioids, alcohol use, marijuana, and tobacco/e-cigarettes, was also a critical area of concern. According to treatment statistics from the Massachusetts Bureau of Substance Abuse Services (BSAS), the percentage of individuals from Chelsea who were admitted for the treatment of drug and alcohol use increased between 2008 and 2018, from 29 to 32%. Among respondents in the iCHNA survey, 12% reported that they have needed substance use services, but were unable to access them.

Other BIDMC CBSA Municipalities

Key informants identified substance use, including opioids, alcohol use, and e-cigarettes/vaping as a priority issue in BIDMC's CBSA. Amongst those who worked with youth/adolescents, the use of e-cigarettes and vaping devices was characterized as an epidemic, with use starting at the middle school grade level. While opioids continue to remain a critical concern, many key informants felt that there were many strong community-level interventions in place to promote education, outreach, and access to treatment.

Figure 35: Fatal Opioid Overdose Counts, 2014-2018

	Fatal Opioid-related overdose by residence (Count, 2014-2018)	Fatal opioid-related overdose by occurrence (Count, 2014-2018)
Massachusetts	**9,114**	**9,443**
Brookline	15	12
Lexington	10	8
Needham	5	4
Newton	42	44

Source: Massachusetts Bureau of Substance Abuse Services (BSAS), 2017

Infectious Disease

Though great strides have been made to control the spread of infectious diseases in the U.S., they remain a major cause of illness, disability and even death. Sexually Transmitted Infections (STI's), diseases transmitted through drug use, vector-borne illnesses, tuberculosis, pneumonia and influenza are among the infectious diseases that have the greatest impact on modern American populations. Young children, older adults, individuals with compromised immune systems, injection drug users and those having unprotected sex are most at risk for contracting infectious diseases.

Boston and Chelsea

Infectious disease and sexual health were not identified as priority community health issues in focus groups or key informant interviews for the Boston CHNA-CHIP Collaborative assessment. While not discussed, quantitative data indicates that there are significantly higher rates of sexually transmitted infections in Boston, with disparities by race/ethnicity, age, and neighborhood. The chlamydia incidence rate in Dorchester (1310 cases per 100,000) was 1.5 times the rate in Boston overall. Rates were also high in Roxbury (1070.5 per 100,000) and Dorchester (1068.5 per 10,000). The incidence rate is significantly higher in young adults aged 15-24 (1737.8 cases per 100,000) compared to those 40 years and over (161.2 cases per 100,000) Females have a significantly high rate of chlamydia (833.3 cases per 100,000) compared to males (721.3 cases per 100,000)

- Gonorrhea incidence rates were significantly higher in the South End, Dorchester, and Roxbury compared to Boston overall. Younger residents experienced high rates of gonorrhea. The incidence rate was significantly higher in males (394.9 per 100,000) compared to females (114.7 per 100,000)
- Among neighborhoods in BIDMC's CBSA, Roxbury has the highest HIV incidence rate (40.1 per 100,000). The South End (including Chinatown) has the highest prevalence of individuals living with HIV/AIDS (1,852.1 per 100,000 residents). Prevalence rates were also significantly higher in Dorchester (1102.9 and 1126.7 per 100,000 residents) and Roxbury (1181.0 per 100,000) compared to Boston overall

Figure 36: HIVS/AIDS Prevalence Rate, by Boston and Neighborhood, Age-Specific Rate per 100,000 Residents, 2016

Source: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS Surveillance Program, 2016. Data analysis and image of graph courtesy of the Boston Public Health Commission and Health Resource in Action as part of the Boston CHNA-CHIP Collaborative Report
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and are subject to change; Data do not include incarcerated individuals

Other BIDMC CBSA Municipalities

Key informants did not identify infectious disease as a priority concern. Though not a qualitative theme, several pieces of quantitative data were collected to characterize the infectious disease burden in the CBSA. In Brookline the Tuberculosis rates were significantly high (6.8 per 100,000), compared to the Commonwealth overall (3.1 per 100,000).

Figure 37: Infectious Disease in Surrounding Municipalities

	Chlamydia cases (lab confirmed), 2017	Gonorrhea cases (lab confirmed), 2017	Hepatitis C cases (confirmed and probably), 2017	Tuberculosis (rates per 100,000), 2017	HIV/AIDS incidence, 2017	Infectious and parasitic disease deaths (age-adjusted rates per 100,000), 2015
Massachusetts	**29,203**	**7,307**	**7,765**	**3.1**	**1,870**	**18.9**
Brookline				6.8		9.7
Lexington	34	6	11	0	0	8.9
Needham	47	6	11	0	0	suppressed*
Newton	223	33	35	1.2	14	11.9

Source: Massachusetts Department of Public Health Bureau of Infectious Disease and Laboratory Services
* Data suppressed due to small number of incidences
Shading represents statistical significance compared to the Commonwealth. Figures highlighted in orange are statistically higher compared to the Commonwealth overall, while figures highlighted in blue are significantly lower.

Community Health Priorities and Priority Population Segments

This section provides a summary of the priority issues and priority populations that were identified through BIDMC's Boston CHNA-CHIP Collaborative assessment and planning processes. A full Implementation Strategy (IS), with goals, priority populations, objectives, strategies, metrics, and partners, may be found in Appendix F.

Core Implementation Strategy (IS) Planning Principles and State Priorities

In developing the IS, care was taken to ensure that BIDMC's community health priorities were aligned with the Commonwealth of Massachusetts priorities set by MDPH and the MA AGO (Table 21). Care was also taken to ensure that the IS was aligned with broader principals drawn from the Commonwealth's Community Benefits Guidelines and the literature on how to best promote community health improvement and prevention efforts.

Table 21: Massachusetts Community Health Priorities

Community Benefits Priorities	Determination of Need Priorities
- Housing stability and homelessness - Mental illness and mental health - Substance Use Disorders - Chronic disease, with a focus on cancer, heart disease, and diabetes	- Built environments - Social environments - Housing - Violence - Education - Employment

Priority Populations

BIDMC is committed to improving the health status and well-being of all residents living throughout its CBSA. Certainly all geographic, demographic, and socioeconomic segments of the population face challenges of some kind that can hinder their ability to access care or maintain good health. Regardless of age, race/ethnicity, income, family history, or other characteristics, everyone is impacted in some way by health-related risks. With this in mind, BIDMC's IS includes activities that will support residents throughout its CBSA, across all segments of the population.

In recognition of the considerable health disparities that exist in some communities, BIDMC focuses the bulk of its Community Benefits resources on improving the health status of low income and underserved populations living in the city of Chelsea and the Boston neighborhoods of Allston/Brighton, Bowdoin/Geneva, Chinatown, Fenway/Kenmore, and Roxbury/Mission Hill.

While there are certainly segments of the populations in Brookline, Chestnut Hill, Lexington, and Needham that are vulnerable and underserved, the greatest disparities exist in Chelsea and Boston. In order to maximize the impact of its Community Benefits resources, BIDMC's Community Benefit Committee (CBC) voted to prioritize and focus BIDMC's attention on the more urban, high-need communities in BIDMC's CBSA.

Based on the findings from the breadth of BIDMC's assessment activities, further efforts were made to prioritize certain population segments by race/ethnicity, socio-economic status, and other factors. More specifically, the CBC and the CBSLT voted to prioritize youth and adolescents, older adults, low-resource individuals and families, LGBTQ populations, racially/ethnically diverse populations, and limited-English speakers.

Figure 38: BIDMC Priority Populations 2020-2022

Youth and Adolescents	Older Adults	Low Resource Individuals and Families

LGBTQ	Racially and Ethnically Diverse Populations/non-English speakers
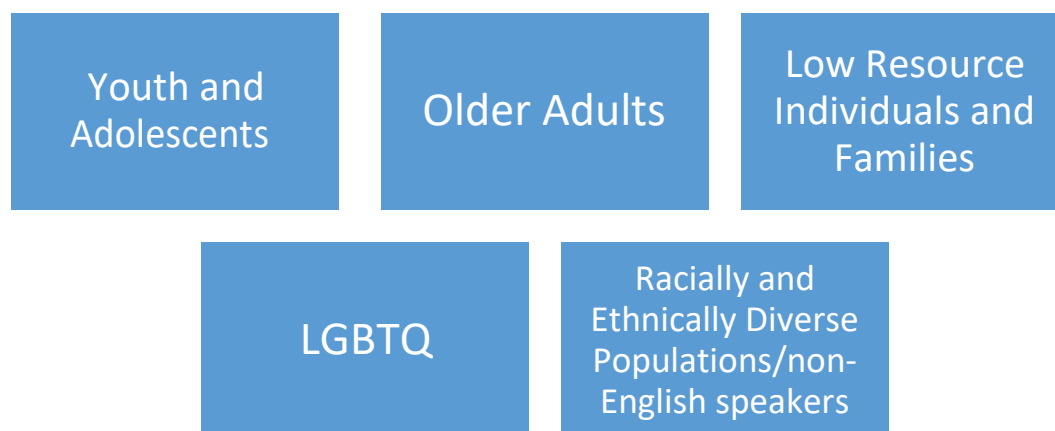
Following is a summary of the factors that led BIDMC's CBC and CBSLT to prioritize these population segments.

Youth and Adolescents

Youth and adolescents were identified as among the most vulnerable and at-risk populations in the CBSA. Participants' reasons for believing this group should be prioritized varied, but centered on the impacts of mental health and substance use. Adolescence is a critical transitional period that includes biological and developmental milestones that are important to establishing long-term identity and independence but can lead to conflict, isolation and tension between adolescents and parents or caregivers. During this time, young people may struggle to access health education and information, social services, or may be seen by providers that misunderstand the needs of those in this age group. Although adolescents are generally healthy, many do struggle with health and social issues, such as obesity (e.g., poor nutrition and lack of physical activity), mental health (e.g., depression, anxiety, stress), substance use (e.g., cigarettes/vaping, marijuana, alcohol, opiates), sexually transmitted infectious, and injuries due to accidents.

Older Adults

Chronic disease, social isolation/lack of family support, living on fixed incomes, affordable housing, and transportation were identified as significant issues for the older adult population. In the U.S. and the Commonwealth, older adults are among the fastest growing age groups.

Chronic/complex conditions are the leading cause of death among older adults, and older adults are more likely to develop chronic illnesses such as hypertension, diabetes, COPD, congestive heart failure, depression, anxiety, Alzheimer's disease, Parkinson's disease and dementia than younger adult cohorts. By 2030, the CDC and the Healthy People 2020 Initiative estimate that 37 million people nationwide, 60% of the older adult population ages 65 years and over will need to manage more than one chronic medical condition. Significant proportions of this group experience hospitalizations, are admitted to nursing homes, receive home health services, and/or require health and social supports in community-based settings. Addressing these concerns demands a health and social service system that is robust, diverse, and responsive.

Low Resource Individuals and Families

Key informants, focus group participants, and BIDMC leadership discussed the challenges that individuals and families face when they are forced to decide between housing, health care, transportation, childcare, food, and other essentials. These choices often lead to missed care or delays in care, due to either the direct costs of care (co-pays and deductibles) or the indirect costs of transportation, childcare, or missed wages. There was near consensus that lack of affordable and high-quality housing was a leading issue in BIDMC's CBSA. Participants also spoke of the intense challenges that many moderate-income individuals and families face due to the high cost of living, combined with the fact that most of those in the middle-income group are not eligible for public programs like Medicaid, food stamps, Healthy Start, and other subsidized services.

LGBTQ

Massachusetts has the second largest LGBTQ population of state in the nation (5%). While societal acceptance of the LGBTQ community has increased greatly over the past few decades, this population still faces discrimination and health disparities. The LGBTQ community continues to face issues of disproportionate violence and discrimination, socioeconomic inequality, and health disparities.

The LGBTQ population is a large and diverse population, though there is a tendency to view LGBTQ as a monolithic identity, some experience greater disparities than others do. In Massachusetts, transgender residents experience higher rates of poverty, unemployment, and homelessness compared to those who are not transgender. [40]

The Human Rights Campaign Foundation continues to recognize BIDMC as a "Leader in LGBTQ Healthcare Equality" – meaning the institution consistently demonstrates its deep commitment to LGBTQ patients and families. BIDMC is committed to providing equitable care for all and will continue to uphold non-discrimination policies for LGBTQ patients and employees, equal visitation for same-sex partners and parents, and LGBTQ health education for staff members.

Racially and Ethnically Diverse Populations and Limited-English Speakers

As referenced throughout this report, there are significant disparities in health care access, health outcomes, and barriers to care by race, ethnicity, place of origin, and language ability. These disparities

[40] Equality and Equity Report

are especially prevalent in Boston and Chelsea where there is a greater percentage of non-White residents, foreign-born individuals, and non-English speakers. These disparities create and contribute to generational patterns of inequity and injustice.

BIDMC is committed to working to address these inequities. BIDMC commits to continuing to engage, collaborate, and empower individuals in these communities and to break down the barriers that impede people from accessing high quality and affordable healthcare.

Community Health Priority Areas

BIDMC's Boston CHNA-CHIP Collaborative assessment is a population-based assessment. The goal was to engage the community and compile quantitative and qualitative information to identify the leading health-related issues affecting individuals in the CBSA, including social determinants of health, service gaps, and barriers to care. The priorities that have been identified have been framed broadly to ensure that the full breadth of unmet needs and community health issues are recognized. These priorities were identified through an integrated and thorough review of all of the quantitative and qualitative information captured across all of the components of BIDMC's CHNA. The priorities have been identified to maximize impact, reduce disparities, and promote collaboration and cross-sector partnership.

During the later stages of the CHNA process, significant efforts were made to vet the priority issues with leadership and the community-at large, through meetings with the CBC and the CBSLT. BIDMC is confident that these priorities reflect the sentiments of those who were involved in the assessment and community engagement processes. Based on the findings from the breadth of BIDMC's CHNA activities, the CBC and the CBSLT voted to prioritize 1) Social determinants of health, 2) Chronic/complex conditions and their risk factors, 3) Access to care, and 4) Mental health and substance use.

Social Determinants of Health	Chronic/Complex Conditions and Risk Factors	Access to Care	Behavioral Health (Mental Health and Substance Use)

Figure 39: BIDMC Priority Areas 2020-2022

The community health priorities that have been prioritized by the CHNA in Figure 37 above are described in detail in the next section of this report, along with a listing of the goals related to these priority areas that BIDMC's Community Benefits staff, the CBC, and CBSLT believe will drive achievement. The objectives and strategic initiatives, by priority area, that will be part of BIDMC's Implementation Strategy are included in BIDMC's Summary Implementation Strategy, included in Appendix F

Community Health Needs not Prioritized by BIDMC's CBC

It is important to note that there are community health needs that were identified by BIDMC's assessment that, due to the limited burden that these issues present and/or the feasibility of having an impact in the short- or long-term on these issues, were not prioritized for investment. Namely, transportation and education were identified as community needs but these issues were deemed by the CBC and the CBSLT to be outside of BIDMC's primary sphere of influence and have opted to allow others in its CBSA, the Greater Boston region, and the Commonwealth to focus on these issues. This is not to say that BIDMC will not support efforts in these areas. BIDMC remains open and willing to work with hospitals across Beth Israel Lahey Health's network, with COBTH, and other public and private partners to address these issues, particularly as part of a broad, strong collaborative.

BIDMC Implementation Strategy & Community Benefits Resources

BIDMC's current 2017-2019 Implementation Strategy was developed in 2016 and addresses all of the priority areas identified by this CHNA. Certainly, this CHNA has provided new guidance and invaluable insight on the characteristics of the population, social determinants of health, barriers to care, and leading health issues that has informed and allowed BIDMC to update its current Implementation Strategy.

Included below, organized by priority area are the core elements of BIDMC 2020 – 2022 Implementation Strategy. The content of the strategy is designed to address the underlying social determinants of health, barriers to care, and promote health equity. The content is also designed to address the leading community health priorities, including activities geared to health education and wellness (primary prevention), identification, screening, and referral (secondary prevention), and disease management and treatment (tertiary prevention – including access to care, self-management support, harm reduction, treatment of acute illness, and recovery).

Below is a brief discussion of the resources that BIDMC will invest to address the priorities identified by the CBC and CBSLT. Following the discussion of resources are summaries of each of the selected priority areas and a listing of the goals that have been established for each priority area.

Community Benefits Resources
BIDMC expends substantial resources on its community benefits program to drive achievement on the goals and objectives in its current Implementation Strategy. These resources are expended, according to its current IS, through direct and in-kind investments in programs or services operated by BIDMC or its partners to improve the health of those living in its CBSA. Additionally, BIDMC works on its own or with its partners to leverage funds through public or private grants and other funding sources. Finally, BIDMC supports residents in its CBSA by providing "charity" care to low income individuals who are deemed unable to pay for care and services provided at its service sites. Moving forward, BIDMC will commit resources in amounts comparable to if not more than what has historically been expended through the same array of direct, in-kind, leveraged, or "charity" care expenditures.

BIDMC and its leadership is committed to community benefits budget planning which ensures the funds and resources available to carry out its community benefits mission and to implement activities to address the needs identified by this CHNA. Recognizing that community benefits planning is ongoing and will change with continued community input, BIDMC's Implementation Strategy will evolve. Circumstances may change with new opportunities, requests from the community, community and public health emergencies, and other issues may arise, which may require a change in the IS or the strategies documented within it. The CBC, the CBSLT, and BIDMC's Board of Trustees are committed to assessing information and updating the plan as needed.

Following are brief descriptions of each priority area, along with the goals that were established by BIDMC to respond to the CHNA findings and the planning process. Please refer to the Implementation Strategy (IS) for more details.

PRIORITY AREA 1: SOCIAL DETERMINANTS OF HEALTH

According to the World Health Organization, the social determinants of health are 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. The social determinants of health are mostly responsible for health inequities - the unfair and avoidable differences in health status seen within and between countries.[41] Quantitative and qualitative data from all aspects of BIDMC's CBSA CHNA showed clear geographic and demographic disparities related to the leading social determinants of health (e.g., economic stability, housing, transportation, violence, food access, education, and community cohesion). These issues influence and define quality of life for many segments of the population in BIDMC's CBSA. Housing, poverty, transportation, violence, and food access were identified as having a particularly substantial impact on residents in living in Boston and Chelsea.

Figure 40: PRIORITY AREA 1: SOCIAL DETERMINANTS OF HEALTH

Priority Area 1: Social Determinants of Health
Goal 1: Promote Healthy Neighborhoods   (Healthy Eating, Active Living, Other Healthy Behaviors, Health-related Programs/Policies) **Goal 2: Promote Violence Prevention** (Safe Neighborhoods and Community Cohesion) **Goal 3: Promote Affordable Housing** **Goal 4: Promote Home Ownership** **Goal 5: Support Workforce Development and Creation of Employment Opportunities** **Goal 6: Promote Environmental Sustainability**

PRIORITY AREA 2: CHRONIC / COMPLEX CONDITIONS & THEIR RISK FACTORS

Based on a review of the quantitative data compiles for this assessment, heart disease, stroke and cancer are by far the leading causes of death in the nation, the Commonwealth, and in BIDMC's CBSA. Roughly 7 in 10 deaths can be attributed to these three conditions. If you include respiratory disease (e.g., asthma, Congestive heart failure, and COPD) and diabetes, which are in the top 10 leading causes across nearly all geographies than one can account for the vast majority of causes of death. All of these

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[41] https://www.who.int/social_determinants/sdh_definition/en/ (Accessed on August 9, 2019)

conditions are generally considered to be chronic and complex and can strike early in one's life, quite often ending in premature death. In this category, heart disease, diabetes, and hypertension were thought to be of the highest priority, although cancer was also discussed frequently in the focus groups and forums. There are also a number of communities within the CBSA that have higher rates of certain types of cancer than the Commonwealth overall. It is also important to note that the risk and protective factors for nearly all chronic/complex conditions are the same, including tobacco use, lack of physical activity, poor nutrition, obesity, and alcohol use.

Although treating these illnesses requires a range of clinical interventions, there is a great deal of overlap with respect to the potential community interventions. Population-level responses to chronic and complex conditions all require community based education, screening, self-management support, timely access to treatment, and seamless coordination of follow-up services.

Figure 41: PRIORITY AREA 2: CHRONIC/COMPLEX CONDITIONS AND THEIR RISK FACTORS

Priority Area 2: Chronic/Complex Conditions and their Risk Factors
Goal 1: Improve Chronic Disease Management **Goal 2: Reduce cancer disparities (access to screening and treatment)** **Goal 3: Support Older Adults to Age in Place**

PRIORITY AREA 3: ACCESS TO CARE

The Greater Boston Area, including BIDMC's CBSA, has one of the strongest and most comprehensive healthcare systems in the world. This system is expansive and spans the full healthcare continuum, including outreach and screening services, primary care medical, and medical specialty care services. There are no absolute gaps in services across the continuum, even for low income and racially/ethnically diverse populations that often struggle with access to health care services. This does not mean, however, that everyone in BIDMC's CBSA receives the highest quality services when they want it and where they want it. In fact, despite the overall success of the Commonwealth's heath reform efforts, data captured for this assessment shows that segments of the population, particularly low income, racially/ethnically diverse populations, and those with limited or no English language skills face significant barriers to care. These segments as well as others struggle to access services or navigate the health system due to lack of insurance, cost, transportation, cultural/linguistic barriers, the general complexity of the system, and shortages of providers willing to serve Medicaid or low income, uninsured patients.

Figure 42: PRIORITY AREA 3: ACCESS TO CARE

Priority Area 3: Access to Care
Goal 1: Increase Access to Quality Medical Services, Including Primary Care, OB/GYN, and Specialty Care, as well as Urgent, Emergent and Trauma Care **Goal 2: Increase Access to Quality Oral Health Services** **Goal 3: Promote Equitable Care and Support for those who face cultural and linguistic barriers** **Goal 4: Promote Greater Health Equity and Reduce Disparities in Access for LGBTQ Populations**

PRIORITY AREA 4: MENTAL HEALTH AND SUBSTANCE USE

There is a growing appreciation for the impact that mental health and substance use are having on individuals, families, and communities. These issues impact all segments of the population across BIDMC's CBSA and across all demographic segments. With respect to mental health, a review of the quantitative and qualitative data highlights the impact of depression, anxiety, and stress as well as bipolar disorder and other serious mental illnesses. Stigma and the impacts of racism and discrimination have also been shown to play a substantial role with respect to mental illness and access to preventive, treatment, and recovery services. With respect to substance use, the data highlights the impact of alcohol, opioids, and marijuana. The prevalence, incidence, and service utilization rates (inpatient hospitalization, emergency department visits, and public program utilization) are higher in a number of communities in BIDMC's CBSA when compared to benchmark data. Large proportions of the population are substantially impacted by mild to moderate mental health and substance use issues such as mild/moderate depression, anxiety and acute stress or alcohol and marijuana misuse, while smaller segments struggle acutely with severe mental illnesses or opioid addiction and alcoholism. Trauma is also a major factor with respect to mental health and substance use. Many of those who have experience trauma suffer acutely from formally diagnosed post-traumatic stress disorder (PTSD), while others either have milder, less substantial impacts, or have undiagnosed PTSD. Substance use or misuse is often a byproduct of mental illness. Isolation and depression in older adult segments was brought up in nearly every discussion that touched on elder health. Finally, there is a dramatic gap in capacity when it comes to mental health and substance use services, particularly for those who are non-English speakers, low income, covered by Medicaid, uninsured, or underinsured. Even those who are insured and have comprehensive benefits can find it challenging to find professionals willing to take their insurance. As a result, people often go without needed care due to linguistic access, cost, and/or provider shortages.

Figure 43: PRIORITY AREA 4: BEHAVIORAL HEALTH (Mental Health Care and Substance Use)

Priority Area 4: Mental Health and Substance Use
Goal 1: Increase Access to Quality Mental Health Care and Substance Use Services
Goal 2: Reduce burden of opioid use
Goal 3: Promote Behavioral Health Workforce Development and Increase Capacity

Appendices

Appendix A: Detailed Approach and Methods

Appendix B: BIMDC CHNA Databook

Appendix C: BIDMC Community Engagement Summary

Appendix D: BIDMC Resource Inventory

Appendix E: Contact Information for BIDMC's Community Benefits Director

Appendix F: BIDMC Summary Implementation Strategy

Appendix G: Community Benefits Evaluation

Appendix H: Boston CHNA-CHIP Collaborative Report

Appendix I: iCHNA Report

APPENDIX A:

Beth Israel Deaconess Medical Center
Community Health Needs Assessment
Detailed Approach and Methods

Overview

As discussed in the body of this report, it would be difficult to overstate BIDMC's commitment to a robust, collaborative, inclusive, transparent, and objective assessment and community engagement process. BIDMC's Community Benefits staff dedicated countless hours of their time and other resources, over nearly a year, to conduct this Community Health Needs Assessment (CHNA). Rather than conducting one-single assessment, BIDMC's community benefit staff conducted their own assessment and participated in a series of additional, concurrent, comprehensive assessments that were then aggregated together to create this CHNA Report. These concurrent assessments were conducted by organizations or collectives of organizations, with whom BIDMC partners with on a regular basis, throughout Boston and Chelsea. BIDMC also integrated the extensive community engagement and planning work that BIDMC is conducting as part of its Massachusetts Determination of Need New Inpatient Building Community-based Health Initiative (CHI). Involvement in these four efforts allowed BIDMC to leverage resources, and create a robust and inclusive CHNA and Implementation Strategy. Involvement in these concurrent assessments also facilitated important collaboration between BIDMC and health service organizations across Boston. These partnerships were very productive and will have a lasting positive impact when it comes to future assessments and community health improvement efforts.

In October of 2019, BIDMC hired John Snow, Inc. (JSI), a public health consulting firm based in Boston, to integrate the information gathered across these concurrent assessments and augment the information gathered where appropriate. BIDMC worked with JSI to ensure that the final BIDMC CHNA, including elements across all of its separate parts, engaged the necessary community constituents, incorporated comprehensive quantitative and qualitative information for all of the communities in its CBSA, and fulfilled Commonwealth and Federal Community Benefits requirements.

BIDMC's CBC oversaw all aspects of the assessment and planning process and was integral to the development of the CHNA report and the implementation strategy. The assessment was also supported by BIDMC's Community Advisory Committee (CAC), which was initially constituted to oversee BIDMC's New Access Building Community-based Health Initiative. Both the CBC and CAC are made up of community members, service providers, and other key stakeholders that either live in and/or work with the neighborhoods in Boston that are part of BIDMC's CBSA. The expertise and knowledge that these groups brought to the process was invaluable.

The following are detailed descriptions of each of the component parts of BIDMC's overall assessment. Collectively, the efforts described below exemplify BIDMC's commitment to a comprehensive, inclusive, engaged, collaborative assessment and planning process. The efforts also show BIDMC's commitment to understanding unmet need, the underlying social determinants of health, and community engagement.

All of these processes put a particular emphasis on engaging hard to reach population segments that are often left out of these types of activities. BIDMC is extremely proud of its efforts over the past year.

BIDMC Assessment Activities 2018-2019

Methods	Summary of Methods Applied Across all Assessment Components • Boston CHNA-CHIP Collaborative • iCHNA • BILH and Other Hospital CHNAs • BIDMC New Inpatient Building Community-based Health Initiative (CHI)	
Quantitative Data		
• Demographic/Socio-economic Data (e.g., Age, gender, race/ethnicity, language, income) • Social Determinants of Health Data (e.g., Housing Transportation, crime) • Epidemiologic Data (e.g., Disease prevalence, morbidity and mortality) • Hospital Discharge Data (e.g., Discharge Rates and Prevention Quality Indicators[1])		
Qualitative Data / Community Engagement		
Key Informant Interviews	~ 70 interviews with health and social service providers, public health officials, advocates, residents, and other community Stakeholders	
Community Health Survey Responses	~ 4,500 survey responses from community residents	
Focus Groups	~ 16 focus groups with key population segments (e.g., Black/African Americans, Hispanics/Latinos, LGBTQ, or service provider groups)	
Community Meetings	~ 15 community meetings open to the public in neighborhoods across Boston and Chelsea	

Boston CHNA-CHIP Collaborative

This assessment focused on the social determinants of health through the lens of health equity; it aimed to uncover and understand how and why individuals in certain Boston neighborhoods or population groups experience disparities in health outcomes and barriers to care based on socioeconomic status, race and ethnicity, health status, sexual orientation, gender identity, and other factors. The overall approach was participatory and collaborative, engaging community residents and stakeholders throughout the CHNA process.

A Steering Committee was formed to oversee the process and provide strategic direction; this 19-member Committee included representatives from hospitals, health centers, public health organizations, and community representatives. An Operations Committee, including Steering Committee Co-Chairs and the Boston CHNA-CHIP Coordinator, was formed to address and resolve operational issues. Two work groups, the Secondary Data Work Group, and the Community Engagement Work Group, provided input and guidance throughout the process. These Work Groups were comprised of

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[1] PQIs are a set of measures that use hospital discharge data to identify quality of care for "ambulatory care sensitive conditions (ACS)." These are conditions that can potentially be prevented or avoided given early intervention and appropriate levels of outpatient primary or specialty care. https://www.qualityindicators.ahrq.gov/modules/pqi_overview.aspx

representatives from a range of organizations, including hospitals, health centers, social services, community development, education, and others. Nancy Kasen, BIDMC's Director of Community Benefits was one of the Co-Chairs. Ms. Kasen and other staff members at BIDMC's Community Benefits Department participated in both workgroups.

Health Resources in Action (HRiA), a non-profit public health organization, was hired by the Collaborative to provide guidance and facilitation of the assessment process, to collect and analyze data, and to develop report materials.

Quantitative Approach and Methods

The Boston CHNA-CHIP collaborative collected and analyzed secondary data on a wide range of issues from a variety of sources to identify community characteristics, barriers to care, risk factors, and disparities in health outcomes. There was a particular focus on collecting data to characterize the social determinants of health (e.g., housing, transportation, and socioeconomic status) and to stratify data by Boston neighborhood, by race/ethnicity, age, and language status. Data sources include:

- Boston Behavioral Risk Factor Surveillance Survey (BBRFSS)
- Youth Risk Behavioral Survey (YRBS)
- US Census Bureau American Community Survey
- Center for Health Information and Analysis (CHIA) Acute Hospital Case Mix Database

Data were analyzed by organizations as cited in the sourcing notation throughout this document and the Boston CHNA-CHIP Collaborative Assessment report. Whenever possible, data was presented with confidence intervals to identify statistical significance ($p < 0.05$).

Qualitative Approach and Methods

The assessment included a robust community engagement effort comprised of the following activities, as described in the Boston CHNA-CHIP Collaborative report:

Boston CHNA Community Survey (2,404 responses): A community survey was developed and administered over six weeks in February-March 2019. The survey focused on a range issues related to the social determinants of health, community perceptions, and access to care and was developed with extensive input from the Community Engagement Work Group and guided by existing validated questions from the field or used in other studies. The survey was pilot-tested in late January 2019, and the final instrument was launched in February 1, 2019 with wider dissemination starting the following week. The survey was administered on-line and via hard copy in seven languages (English, Spanish, Portuguese, Haitian Creole, Chinese, Vietnamese, and Arabic). Extensive outreach was conducted by Collaborative members to disseminate the survey via social media, institutional e-newsletters, e-mails to large networks, waiting rooms, 13 Boston Public Library neighborhood branches, community events, and large apartment buildings. Over 35 organizations assisted with survey dissemination. Additionally, Healthy Community Champions, an initiative of grassroots ambassadors, conducted targeted survey administration in specific neighborhoods.

While strong efforts were made to conduct outreach across the City with a deeper dive within neighborhoods and population groups who experience disproportionate health burden, the community

survey used a convenience sample. Because a convenience sample is a type of non-probability sampling, there is potential selection bias in who participated or was asked to participate in the survey. Due to this, results cannot necessarily be generalized to the larger population. Additionally, some sub-group analyses consist of very small sub-sample sizes, these sub-group analyses are still presented in the report for population groups where data are limited from other sources (e.g., Haitian Creole speakers, non-binary and transgender individuals, etc.); however, given the small sub-sample sizes and convenience sampling methodology, results should be interpreted with caution.

The table below includes a breakdown of survey respondents from the neighborhoods that are part of BIDMC's CBSA:

Respondents to Boston CHNA-CHIP Collaborative Survey, by Neighborhood of Interest

Neighborhood	# of Survey Respondents (N=2,404)	% of Survey Respondents	% of Population in Boston†
Allston/Brighton	243	10.1%	9.5%
Chinatown	71	3.0%	‡
Dorchester	535	22.3%	21.6%
Fenway	80	3.3%	8.2%
Mission Hill	18	0.8%	‡
Roxbury	185	7.7%	6.6%

†DATA SOURCE: U.S. Census, American Community Survey, 5-Year Estimates, 2013-2017

‡NOTE: For ACS data, neighborhoods were defined by Boston Public Health Commission using ZCTAs; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Roxbury includes Roxbury and Mission Hill

Focus Groups (13): Thirteen focus groups were conducted with specific populations of interest: 12 focus groups conducted specifically for the collaborative CHNA and one additional focus group conducted by work group members who submitted notes for the CHNA. Focus groups were 90-minute semi-structured conversations with approximately 8-12 participants per group and aimed to delve deeply into community's needs, strengths, and opportunities for the future. Focus groups were conducted with the following populations:

- Female low-wage workers (e.g. housekeepers, childcare workers, hotel service workers, etc.)
- Male low-wage workers (e.g. janitorial staff, construction, etc.)
- Seniors (ages 65+) with complex, challenging issues (e.g. homebound, medical complications)
- Residents who are housing insecure (no permanent address or close to eviction)
- Latino residents in East Boston (in Spanish)
- LGBTQ youth and young adults at risk of being homeless
- Immigrant parents of school age children (5-18 years)
- Survivors of violence; mothers who have been impacted by violence
- Parents who live in public housing in Dorchester

- Chinese residents living in Chinatown (in Chinese)
- Haitian residents living in Mattapan (in Haitian Creole)
- Residents in active substance use recovery
- Additional focus group with notes provided: Chinese residents living in Chinatown

A total of 104 community residents participated in focus groups, representing 13 neighborhoods across the city. Nearly half of focus group participants identified as Black or African American (45%), a third of participants identified as Hispanic or Latino (34%), and 10% identified as White. The majority of participants identified as female (57%), 36% identified as male, and 7% identified as transgender or genderqueer. Fifteen community and social service organizations located throughout Boston assisted with recruiting participants and/or hosting focus groups.[2]

Key Informant Interviews (45): **"**A total of 45 key informant interviews were completed, six of which were additional interviews submitted by work group volunteers. Interviews were 45-60 minute semi-structured discussions that engaged institutional, organizational, and community leaders and front-line staff across sectors. Discussions explored interviewees' experiences of addressing community needs and opportunities for future alignment, coordination, and expansion of services, initiatives, and policies. Sectors represented in these interviews included: public health, health care, housing and homelessness, transportation, community development, faith, education, public safety, environmental justice, government, workforce development, social services, food insecurity, business organizational staff that work with specific population such as youth, seniors, disabled, LGBTQ, and immigrants.

Information from focus groups and key informant interviews were coded using Nvivo, a qualitative data analysis software, and analyzed thematically by data analysts for main categories and sub-themes. Analysts identified key themes that emerged across all groups and interviews as well as the unique issues that were noted for specific populations. Throughout the qualitative findings included in the Boston CHNA-CHIP Collaborative report, the term "participants" is used to refer to focus group and key informant interview participants. Unique issues that emerged among a group of participants are specified as such (e.g., Spanish-speaking focus group participants, etc.). Frequency and intensity of discussions on a specific topic were key indicators used for extracting main themes. While neighborhood differences are noted where appropriate, analyses emphasized findings common across Boston. Selected paraphrased quotes—without personal identifying information—are presented in the narrative of this report to further illustrate points within topic areas."[3]

North Suffolk Integrated Community Health Needs Assessment (iCHNA)

Assessment Approach

From the onset, the intention of the North Suffolk iCHNA was to develop broad regional plans to guide the three municipalities, services providers, public and private organizations, and health systems that serve the area. To be effective, these plans would be:

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[2] Boston CHNA-CHIP Collaborative Report
[3] Boston CHNA-CHIP Collaborative Report

- Comprehensive: involving a full range of stakeholders, data, and a broad definition of health and wellbeing to create a CHNA that would fulfill the needs of all

- Inclusive: ensure all segments of the population would have a voice in process, data collection, and implementation plan

- Data-considered: gathering as much primary and secondary data on the health, wellbeing, and quality of life of residents through qualitative and quantitative methods in order to prioritize health needs

- Collaborative: guiding and engaging stakeholders throughout the process for sound decision making, co-learning, and transparency

In order to meet these values, the iCHNA was led by a **Steering Committee**. The Steering Committee was a selected group of leaders, including the executive chefs of each community, a representative of each Board of Health, leaders of organizations in the communities, and representatives from the five health systems that serve the area.   Members of the Steering Committee were selected to represent the communities and populations of Revere, Chelsea, and Winthrop. If a key population segment was missing from the Committee, specific agencies and representative were recruited. The Steering Committee set direction and policy of the process; track progress toward completion of tasks; coordinate communication to key stakeholders and the public and make final decisions about priorities and implementation plans. The Steering Committee reviewed and informed CHNA findings and reports and determined the priorities for the CHIP.   The Steering Committee met every other month throughout the iCHNA and CHIP process. The meetings were listed on the CHNA website, and subcommittee members were invited as well.

A Segment Inclusiveness and Social Determinants of Health list was created in collaboration with the Steering Committee and the sub committees. When reviewing membership in all the committees, as well as collecting primary data, this list was consulted to ensure the iCHNA process and data collection were inclusive and representative of the communities.   When planning for key informant interviews and focus groups, this list was used to identify leaders and groups to ensure that a variety of diverse individuals across multiple sectors and populations were included.

Methodology & Engagement

1. **Steering Committee:** The Steering Committee was a selected group of leaders, including the executive chefs of each community, a representative of each Board of Health, leaders of organizations in the communities, and representatives from the five health systems that serve the area. The Steering Committee set direction and policy of the process; track progress toward completion of tasks; coordinate communication to key stakeholders and the public and make final decisions about priorities and implementation plans. The Steering Committee reviewed and informed CHNA findings and reports and determined the priorities for the CHIP.   The Steering Committee met every other month throughout the CHNA and CHIP process. The meetings were listed on the CHNA website, and subcommittee members were invited as well.

2. **Instrument Review Subcommittee**: Fifteen people represented different organizations joined the subcommittee. The purpose of this committee was to create, review, and finalize the survey instrument, as well as the focus group and key informant interview guides. The subcommittee met 4 times to review past instruments, offer new questions in which to gather data, and assess the survey tool for literacy. The fourth meeting was a joint meeting with the Community

Engagement Subcommittee to brainstorm ways to distribute the survey and identify key informant interviews and organizations to assist with focus groups.

3. **Community Engagement Subcommittee**: Eighteen people represented different organizations joined the subcommittee. The purpose of the subcommittee was to identify organizations who had access to populations who might not otherwise be engaged in this process without intentional outreach. They were also charged with recommending community engagement strategies, identifying potential community facilitators, reaching out to organizations and individuals for survey distribution and focus group coordination and supporting the communications of the process and final products. The subcommittee met 4 times, with the fourth meeting being a joint meeting with the Instrument Review subcommittee.

4. **Data Analysis Subcommittee:** Eleven people represented different organizations in the assessment process joined the subcommittee. The purpose of the subcommittee was to help analyze the data, present the findings back to the Steering Committee, and determine how the data will look in the reports. Members participated in three meetings to provide guidance on how the data should be organized, subpopulations to focus on, and how the data would be presented to the Steering Committee. The subcommittee determined the data should be organized based on the DPH Determination of Need (DoN) Health Priorities and the current Executive Office of Health and Human Services (EOHHS)/DPH focus issues.

   DPH DoN Health Priorities

   - Social Environment
   - Built Environment
   - Housing
   - Violence and Trauma
   - Employment
   - Education

   EOHHS/DPH Focus Issues

   Statewide trends and overall burden of morbidity and mortality point to:

   - Substance use disorders (SUDs),
   - Housing Stability/Homelessness,
   - Mental illness and mental health,
   - Chronic disease with a focus on Cancer, Heart Disease and Diabetes.

   Additionally, the subcommittee decided to focus on three specific populations that were of interest: 1. Youth, 2. Seniors, and 3. Foreign-born. The subcommittee provided feedback on the data that was included on data placemats to present to the Steering Committee. Data placemats are a tool to communicate with stakeholders the key data themes and engage them in data interpretation (Pankaj, Veena. (October 2014). "Data Placemats: A DataViz Technique to Improve Stakeholder Understanding of Evaluation Results." Paper presented at the American Evaluation Association Annual Conference, Denver, CO).

5. **Website & Cable Access Panel:** To promote the CHNA and CHIP process, keep communities up to date, and house the links to the survey, a website was created:

www.northsuffolkassessment.com. The website was widely distributed through emails and flyers, with the website, emails, and flyers all available in English, Spanish, Portuguese, and Arabic. To promote the website and the survey, a 12-minute cable access show was recorded and widely distributed. The panel features the executive chefs of all three communities and was facilitated by the director of the Revere CARES coalition, who also translated the content in Spanish.

6. **Quality of Life Survey**: The anonymous survey assessed community perceptions of quality of life, health problems in the community, community strengths, safety, community changes and demographic information (including perceptions of personal health, food and housing stability, and utilization of select local resources). The survey was translated into Spanish, Portuguese, and Arabic, and was distributed widely via the web and in-person within each participating organization. A total of 1,827 individuals across Revere, Chelsea, and Winthrop responded to the survey. The survey was cleaned and analyzed in the statistical software, R. After cleaning the data, 99% of the data were still usable, making the total sample size of the community health survey 1,819. The data was stratified by community, live or work, age, sex, race, Hispanic/Latino, and foreign-born.

   a. **Quality of Life Survey Data Analysis**: As mentioned, in order to collect a robust and comprehensive sample of survey respondents, surveys were available in multiple languages. The majority of participants took the English survey (92%), followed by the Spanish survey (7.40%), Portuguese survey (0.38%) and the Arabic survey (0.22%). Due to the low response rate of the Portuguese and Arabic surveys, they were re-translated to English using Survey Monkey. However, because over 100 surveys were completed in Spanish, they were translated to English using R.

   Though data analysis primarily focused on calculating the frequencies of responses per question, it was essential to ensure that the correct denominators were utilized. For most questions, the denominator calculated was based on the total number of individuals who responded to that particular question. However, when questions contained phrases such as "Select all that apply" or other phrases that denoted for respondents to select multiple choices, the statistical software SAS was used to determine how many individuals responded to these sets of questions. The denominator then became the total number of people who selected at least one response. Assuring that the correct denominators were used in the overall and stratified results ensures that our frequencies are as accurate and precise as possible.

   Since the survey was available to anyone who lived or worked in Chelsea, Revere or Winthrop, some analyses were done that solely focused on how residents of these communities responded. Residents were defined as those who responded that they either lived or lived and work in either Chelsea, Revere or Winthrop. The data analysis sub-committee determined that the survey respondents who were foreign-born were a population of interest. The foreign-born population was defined as those who were residents (live or live and work in community) and those who responded that they have lived in the United States within these parameters: "Less than one year," "one to three years," "four to six years," or "more than six years, but not my whole life." Those who responded that they have lived in the United States for their whole lives were defined as "non-foreign born" survey respondents. Youth were defined as those who responded that

they were under 18 years old and seniors were defined as those who responded that they were 65 years old or older.

While the cleaning the data, an interesting pattern was found. Individuals who identified as Hispanic/Latino struggled to respond what race they identified as. The question pertaining to race came before the question asking whether individuals identified as Hispanic/Latino. 116 survey respondents selected "other" as their race and wrote in a response that indicated that they were of Hispanic/Latino descent. One individual even wrote, "Why isn't Hispanic/Latino an option?" While many of these individuals selected that they were Hispanic/Latino, this indicates that individuals from North Suffolk (Chelsea, Revere and Winthrop) might struggle with their race identification or need more information about the differences between race and ethnicity.

7. **Focus Groups**: Qualitative data were collected through key informant interviews and focus groups with the help of a small group of volunteers from partner organizations and the CCHI Evaluation Team. Volunteers were trained on facilitation and note taking strategies in February 2019 prior to the start of qualitative data collection. Interview and focus group guides were created for facilitators and note takers with standard questions regarding perceptions about the health of the community, community assets, and pressing health issues. Once trained, volunteers traveled to participating organizations to facilitate focus groups. Key informant interviews were conducted both in-person and on the phone based on facilitator and interviewee availability.

   Potential focus group participants and key informants were identified by the North Suffolk Integrated Community Health Needs Assessment Steering Committee using a segment inclusiveness worksheet to ensure that a variety of diverse individuals across multiple sectors and populations were included. A total of 22 focus groups were completed, 9 with staff and 13 with community residents, and 28 key informant interviews were conducted, resulting in a combined total of 241 people engaged through this process. Each interview/focus group lasted approximately 45 to 60 minutes. Community residents received a $15 gift card at the end of the focus groups as compensation for their time.

   Upon completion of all focus groups and key informant interviews, the notes were read, reviewed, and coded to categorize the data and identify overarching, common themes. Several themes were found across all three communities, while a few additional themes were found applicable to one or two communities.

8. **Public Health Data**: Public health data were gathered from the U.S. Census, MA Department of Education, MA Department of Public Health, local Youth Risk Behavior Survey (YRBS), Prevention Needs Assessment (PNA), local police departments and community-based organizations.

Limitations

As with all field research, there are several data limitations to report. This assessment sought to obtain diverse participation in the community. Every effort was made to ensure broad distribution of the Quality of Life survey so that all groups in the community were well represented. The majority of survey respondents were white females despite this community outreach. However, there was a sufficient sample within each community to allow for analysis by sub-groups (e.g. male vs. female, Hispanic/Latino). Focus groups were conducted in the communities to obtain the perspectives of youth, parents, immigrants, and non-English speakers, less likely to respond to surveys.

Beth Israel Lahey Health (BILH) and Other Hospital Community Health Needs Assessments

BIDMC leveraged information from numerous hospitals within the BILH system (i.e., New England Baptist Hospital, Beth Israel Deaconess Hospital – Needham, and Lahey Hospital Medical Center,) as well as other hospitals in Boston (i.e., Brigham and Women's Hospital, Dana-Farber Cancer Institute, Boston Children's Hospital). These hospitals operate in BIDMC CBSA and, as a result, efforts were made to share information and align community engagement and assessment activities.

- **Key Informant Interviews.** Qualitative information from key informant interviews and meetings involving residents and key stakeholders in Lexington was shared by **Lahey Hospital Medical Center in Burlington and New England Baptist Hospital** in the Mission Hill neighborhood of Boston. Specifically, notes from three interviewees with Lexington Town Officials were shared, including interviews with the Public Health Nurse, the Environmental Health Agent, and the Director of the Human Services Department. In addition, notes with 12 key informants from throughout the Mission Hill and Roxbury community were shared, including community residents, social service providers, public housing administrators, and community advocacy organizations.

- **Focus Groups.** Information was also gathered through focus groups and key informant interviews. In total, New England Baptist Hospital organized two focus groups involving more than 20 people. Specifically, focus groups were held with the **New England Baptist Hospital** Patient Family Advisory Committee, which is dominated by community members and long-term patients from Mission Hill and a meeting with the Mission Hill Legacy Project was conducted during one of the Legacy Project's Birthday Parties for older adults on Mission Hill.

- **Community Meeting.** Qualitative information was gathered through two community meetings. One in Mission Hill/Roxbury that was jointly hosted by BIDMC and **New England Baptist Hospital (NEBH), along with Brigham and Women's Hospital, Boston Children's Hospital and Dana-Farber Cancer Institute**. 48 people participated in this meeting held at the Tobin/Mission Hill Community Center. Another in Needham that was hosted by Beth Israel Deaconness – Needham. This meeting was attended by approximately 40 health and social service providers, other community stakeholders, and residents from Needham.

- **Community Health Survey.** Qualitative information was gathered through a community health survey, conducted by **New England Baptist Hospital as part of their CHNA activities**, which collected information from more than 100 residents of Mission Hill.

BIDMC New Inpatient Building Community-based Health Initiative

In addition to the Boston CHNA-CHIP Collaborative, the iCHNA, and numerous hospital CHNA efforts, BIDMC conducted community engagement, assessment, and prioritization activities through its Determination of Need New Inpatient Building Community-based Health Initiative (CHI). BIDMC is in the process of constructing a new inpatient building – the first new building that BIDMC has built in over 20 years. Due to the size of this capital expenditure, the MDPH requires that BIDMC go through a Determination of Need (DoN) process; this process directs BIDMC to dedicate 5% of total project costs towards a Community-based Health Initiative (CHI) to improve the health of residents in communities that are part of the BIDMC's CBSA. Over the next five to eight years, BIDMC will invest approximately

$30 million towards the CHI project. $7.5 Million (25%) of BIDMC's $30 Million will be given to the Commonwealth and be invested in Commonwealth-wide community health improvement initiatives. The remaining $22.5 Million will be allocated and directed by BIDMC's CAC in community health improvement initiatives in BIDMC's CBSA neighborhoods in Boston and Chelsea. Per Commonwealth DoN requirements, BIDMC is required to implement a robust community engagement effort and facilitate a prioritization process with BIDMC's CAC to identify the leading community health priorities as well as the communities and priority population segments that will be supported by BIDMC's CHI funds.

BIDMC's Community Advisory Committee (CAC) is comprised of community residents and stakeholders, who inform and advise the NIB-CHI process, including community engagement efforts to collect data on neighborhood and community health priorities.

The findings from these activities were incorporated into BIDMC's CBSA CHNA.

Community Engagement Efforts

To engage the community and provide vital information to help the CAC to identify and prioritize community health issues to be funded through the NIB-CHI investment, a series of five (5) community meetings were held in the Boston neighborhoods that are part of BIDMC's CBSA, with approximately 185 total attendees (Table 2). Meetings were held between June 2 and June 17, 2019.

NIB-CHI Community Engagement Efforts

Neighborhood	Date/Time	Location	Languages available for Interpretation/Translation	# of Attendees
Allston/Brighton	June 11, 2019 6 – 8 PM	Charles River Community Health center	Cantonese, Portuguese, Russian, Spanish, Vietnamese	32
Chinatown	June 2, 2019 10 AM – 12 PM	South Cove Community Health Center	Cantonese, Mandarin	25
Bowdoin-Geneva (Dorchester)	June 10, 2019 6 – 8 PM	St. Peter's Teen Center	Cape Verdean Creole, Haitian Creole, Spanish	40
Fenway/Kenmore	June 12, 2019 6 – 8 PM	Morville House	Cantonese, Russian, Spanish	55
Roxbury/Mission Hill	June 17, 2019 6 – 8 PM	Bruce Bolling Building	Haitian Creole, Spanish	33

The primary goal of these meetings was to ensure that residents of the communities in Boston that are part of BIDMC's CBSA, as well as staff from community-based organizations that operate in those areas, were given the opportunity to:

- Learn about the CHI
- Share their ideas on how NIB CHI funds should be spent
- Vote on community health priorities and strategic ideas for funding.

Special emphasis was made to encourage non-English speaking residents and other hard-to-reach segments of the population who are often left out of community engagement activities, to participate. Below are characteristics of individuals who participated across the five meetings.

- **Race/Ethnicity:** Seventy-seven percent (77%) of participants reported as a non-White race. The largest racial/ethnic group reported as Asian, non-Hispanic (43%), followed by White, non-Hispanic (23%), Black/African American, non-Hispanic (16%), Other Race, non-Hispanic (8%), Hispanic/Latino of any race (6%), multi-race, non-Hispanic (3%), and American Indian/Alaskan Native, non-Hispanic (1%)
- **Language:** Fifty-three percent (53%) of participants chose to take the survey in English, 22% in Mandarin, 8% in Haitian Creole, 7% in Vietnamese, 4% in Russian, 4% in Spanish, and 1% in Cantonese
- **Age:** Thirty-nine percent (39%) of participants reported that they were 65 years old or older, 32% reported that they were between the ages of 35 and 64, 19% reported that they were between the ages of 18 and 34, and 10% were under 18
- **Gender Identity:** Sixty-seven percent (67%) reported as female, 31% as male, and 2% as either genderqueer or an additional gender category
- **Resident/Non-resident:** Sixty-one percent (61%) reported that they were residents of the CBSA and 47% reported that they were a representative of a community organization

At the outset of the meetings, staff from BIDMC and JSI provided background information on the NIB CHI, discussed the six (6) community health priorities identified by the NIB CHI CAC (i.e., housing, education, jobs/financial security, mental health, substance use, and violence), and gave participants the opportunity to add additional priorities that were important to them and their communities. Participants were then split up into small groups and were given the opportunity to discuss the Community Advisory Committee priority areas. In the small group discussions, participants were asked to clarify leading concerns for each priority area and to provide input on how funds should be spent to address the issue. JSI staff then provided brief summaries of the key themes discussed in their respective group and meeting participants were asked to individually vote across the priority areas and strategic ideas to identify ones that they thought were most important.

From these community meetings, a set of community health priority areas emerged: housing, education, access to care, mental health, jobs and financial security, violence, substance use disorder, wellness and chronic disease, elder health, and environmental health. Considering the outcomes of these community meetings, along with experience and understanding of the relevant communities, the CAC arrived at four community health priority areas: housing, jobs and financial security, behavioral health, and healthy neighborhoods.

NIB-CHI Community Health Priority Areas
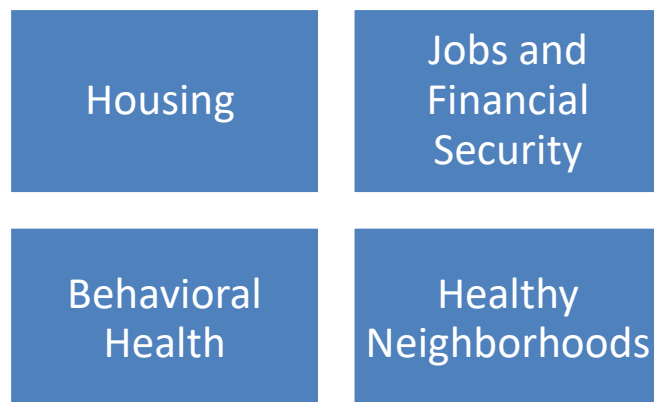
Housing	Jobs and Financial Security
Behavioral Health	Healthy Neighborhoods

BIDMC's Independent Community Health Needs Assessment Activities

As mentioned above, in October of 2018, BIDMC hired JSI to integrate the information gathered across the concurrent assessment and planning activities discussed above and augment the information gathered where necessary. BIDMC's additional efforts ensured that BIDMC's CHNA engaged the necessary community constituents, incorporated information from all of the communities in its CBSA, and fulfilled Commonwealth and Federal Community Benefits requirements.

BIDMC's additional, independent assessment and planning activities were conducted in three phases. First, BIDMC collected, analyzed and integrated additional quantitative data from various sources to ensure that all of the communities that are part of BIDMC's CBSA were included in the assessment (Phase I). In this case, particular attention was made to gather information from the communities that are part of BIDMC's CBSA that are outside of Boston and Chelsea. Namely, BIDMC operates a pain center in Brookline, a Cancer Center in Needham, and an outpatient, multi-specialty clinic in Lexington. Second, BIDMC engaged additional community residents, key stakeholders, and service providers through key informant interviews (Phase II). Third, BIDMC integrated and prioritized the findings compiled and analyzed across all of the various concurrent assessment activities (Phase III). Once the findings were prioritized, BIDMC then worked with JSI to develop this report and the associated Implementation Strategy (Phase III).

Following is more detailed descriptions of the leadership and oversight of BIDMC's CHNA, additional data collection efforts, and the prioritization process, as well as the Resource Inventory and the Community Benefits Evaluation.

Leadership and Oversight. As mentioned above, BIDMC's CBSA CHNA, including the collective efforts with the Boston CHNA-CHIP Collaborative, the iCHNA, and numerous other hospitals within and outside of BILH, were overseen by the CBC. The CBC is comprised of key community stakeholders and BIDMC leadership and provided valuable insight on the assessment approach, including the community engagement strategy, preliminary findings, and strategic planning. The CAC also supported BIDMC's CHNA by providing their knowledge and experience living in or work with the neighborhoods of Boston and Chelsea. It is also important to note that BIDMC's Community Benefits Senior Leadership Team (CBSLT) played a critical role in the assessment and planning process. They were consulted throughout the assessment and, along with the CBC, were instrumental in the prioritization and planning process. The CBLT included key BIDMC administrators and clinicians.

Quantitative and Qualitative Data Collection. BIDMC's CBSA CHNA includes an extensive amount of additional quantitative and qualitative data that further characterize the communities in BIDMC's CBSA, including the health status of its residents. This data was used to augment data from existing assessments, particularly for communities in Boston and Chelsea. It was also used to capture information from communities in BIDMC's CBSA that are outside of Boston and Chelsea, in the surrounding communities of Brookline, Chestnut Hill, Lexington, and Needham. Since Chestnut Hill is not a registered municipality, data is reported for the communities that comprise it (Boston, Brookline, and Newton).

Secondary data sources included:

- U.S. Census Bureau, American Community Survey 5-Year Estimates (2013-2017)
- Behavioral Risk Factor Surveillance Survey, 2017
- Massachusetts Department of Elementary and Secondary Education: School and District Profiles (2017, and 2018-2019)
- FBI Uniform Crime Reports (2017)
- Massachusetts Department of Public Health, Registry of Vital Records and Statistics (2015)
- Massachusetts Department of Public Health, Bureau of Substance Abuse Services (2017)
- Massachusetts Department of Public Health, Annual Reports on Births (2016)
- Massachusetts Bureau of Infectious Disease and Laboratory Sciences (2017)
- Massachusetts Center for Health Information Analysis (CHIA) Hospital Profiles (FY 2013-2017)
- Massachusetts Center for Health Information Analysis (CHIA) Hospital Discharges (2017)
- Massachusetts Healthy Aging Collaborative, Community Profiles (2018)

Whenever possible, confidence intervals were analyzed to test for statistically significant differences between municipal and Commonwealth data points. BIDMC CHNA also included some more refined analysis of hospital discharge data compiled by the Massachusetts Center for Health Information and Analysis (CHIA). This analysis focused on analyzing Ambulatory Care Sensitive conditions, which allow for the assessment of the strength of a community's primary care system and its ability to prevent or avoid hospitalizations. A comprehensive Data Book is included in Appendix B.

BIDMC's CBSA assessment also collected a limited amount of qualitative information to augment the considerable amount of information collected from the Boston CHNA-CHIP Collaborative, the iCHNA, other hospital CHNA activities, and BIDMC's CHI. This qualitative data gathering focused on filling gaps in information in Brookline, Chestnut Hill, Lexington, and Needham, which were not covered by the iCHNA and the Boston CHNA-CHIP Collaborative. Data sources, associated tools, lists of participants, and other materials are included in Appendix A with other more detailed information on the BIDMC CBSA approach and the CBSA Detailed Community Engagement Summary in Appendix C.

Prioritization. During Phases I and II, BIDMC's CBC was provided updates on the CBSA assessment to keep them informed of progress and our preliminary findings. In Phase II, a prioritization meeting was held with BIDMC's CBC. During this meeting, quantitative and qualitative data findings, including information from the Boston CHNA-CHIP Collaborative assessment, the iCHNA, the NEBH CHNA, and the BIDMC CHI were reviewed. The CBC then participated in a robust discussion of all of the findings and based on this discussion, voted to approve a set of community health priorities and priority population segments that would be used to develop BIDMC's implementation strategy. Following the CBC planning and prioritization meeting, a similar meeting was organized with BIDMC's CBSLT. During this meeting, the CBSLT also reviewed key findings from across all of the concurrent assessment activities as well as priorities agreed on by the CBC. Based on this discussion they voted on a set of priorities that were incorporated into BIDMC's CHNA and the IS.

Approval/Adoption and Public Comment. The CHNA and IS were distributed and presented to the CBC on September 5, 2019 and, with their approval, presented to the Board of Directors for approval on September 18, 2019. As with every CHNA, BIDMC's 2019 CHNA has been made available via BIDMC's web site (https://www.bidmc.org/about-bidmc/helping-our-community/community-initiatives/community-benefits). Comments are welcome and encouraged and contact information for BIDMC's Director of Community Benefits is both on the website and in Appendix E of this report. There were no written comments or oral comments received on BIDMC's prior (FY 2016) CHNA or IS.

Resource Inventory. Federal and Commonwealth requirements indicate that a Resource Inventory should be created to inform the extent to which there are gaps in health-related services. Working with BIDMC, JSI compiled a list of resources across the broad continuum of services, including clinical health care services, community health and social services, and public health resources. This was done primarily by compiling information from existing resource inventories and community partner lists from BIDMC. Information was also compiled from membership lists of the existing community health coalitions and from CHNA interviews. JSI reviewed BIDMC's FY 2018 Annual Report of Community Benefits activities submitted to the MA AGO, which included a listing of partners, as well as publicly available lists of local resources. The goal of this process was to identify key partners who may or may not be already collaborating with BIDMC. The resource inventory can be found in Appendix D.

Community Benefits Evaluation. BIDMC's contract with JSI included funds to conduct a community benefits evaluation that assessed the impact of BIDMC existing community benefits activities. More specifically, JSI staff reviewed the Fiscal Year 2017 Community Benefits Report that BIDMC submitted to the MA AGO in April 2018. Activities reported in this report were abstracted and individually scored. JSI determined the intensity of each activity by coding three specific attributes according to a proven methodology developed by the Robert Wood Johnson Foundation. The three attributes are:

- **Behavioral Intention:** Providing information; enhancing skills, services, or support; modifying access, barriers, and opportunities; modifying policies and broader conditions;

- **Duration:** One-time, occurring more than once, or ongoing; and

- **Reach:** Proportion-high, medium, low of the total priority population involved in or touched through the activity

A JSI evaluation team member rated each activity attribute on a scale of 0.1 (minimum) to 1.0 (maximum) and calculated a single intensity score using a defined protocol (Table 1). A second evaluation team member coded a randomly selected number of activities to ensure inter-rater reliability. A score of 0.1 – 0.5 was given dependent upon how many times and/or how long the activity was implemented during FY2017. If the duration or reach was unclear, the evaluators scored the attribute the lowest possible score (0.1). The formula used to calculate an intensity score for each activity was:

$$\sum \text{Behavioral value} + \text{duration value} + \text{reach value}$$

Scores could range from 0.3 (lowest intensity and least likely to impact long-term outcomes) to 3.0 (highest intensity and most likely to impact long-term outcomes). A total composite score for all activities was then summed across all activities.

Community Benefits Evaluation Scoring Protocol

Dimension	Rubric for Scoring Intensity (0=low;1=high)
Behavioral Intervention Strategy	**High (1.0):** Modifying policies, systems and access **Med (0.55):** Enhancing services and support **Low (0.1):** Providing information; enhancing skills
Duration (Yearly)	**High (0.5):** Ongoing, throughout the year **Med (0.275):** More than once per year **Low (0.1):** One time event
Duration (Sustainability)	**High (0.5):** Ongoing, institutional practice **Med (0.275):** Ongoing, demonstrated commitment (e.g., partnership, MOU, multi-organizational involvement) **Low (0.1):** Would end without community-benefits dollars
Reach (Community)	**High (0.5):** >20% or more of the total population* **Med (0.275):** 5-20% of the population **Low (0.1):** 0-<5% of the population
Reach (Priority Population)	**High (0.5):** >20% or more of the total priority population^ **Med (0.275):** 5-20% of the population **Low (0.1):** 0-<5% of the population

*total population was based on the number of people living in the hospital's primary service area or the community within which the activity was implemented
^priority populations were based on the strategy's targeted population and may have been a calculation based on the prevalence of a condition across the U.S. or Massachusetts

A more detailed summary of the Community Benefits Evaluation can be found in Appendix G.

Appendix B:
Beth Israel Deaconess Medical Center
Community Health Needs Assessment
Databook
2019

Demographics and Social Determinants of Health

Statistically higher than statewide rate
Statistically lower than statewide rate

				Areas of interest				
	MA	Boston	Brookline	Chelsea	Lexington	Needham	Newton	*Source*
Demographics								
Population	6,789,319	669158	59246	39272	33339	30429	88479	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Median age (years)	39.4	32.0	34.1	33.2	45.0	43.6	40.9	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Age under 18 (%)	20.4	16.3	18.6	26.4	26.1	26.9	22.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Age over 65 (%)	15.5	11.0	15.6	9.2	18.7	18.2	16.8	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Race / Ethnicity / Culture								
White alone (%)	78.9	52.8	75.3	49.6	68.3	86.6	77.4	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Black or African American alone (%)	7.4	25.3	3.3	7.1	0.8	2.1	3.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Asian alone (%)	6.3	9.5	15.7	3.6	27.3	8.2	14.3	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Native Hawaiian and Other Pacific Islander (%) alone	0	0	0	0	0	0	0	US Census Bureau, 2013-2017 ACS 5-Year Estimates
American Indian and Alaska Native (%) alone	0.2	0.4	0.1	0.2	0.1	0	0.1	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Some Other Race alone (%)	4.1	7.2	1.4	8.7	0.6	0.5	1.7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Two or More Races (%)	3.1	4.9	4.2	30.8	3	2.7	3.3	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Hispanic or Latino of Any Race (%)	11.2	19.4	5.9	65.9	2.1	2.7	5.5	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Foreign Born (%)	16.2	28.3	27.4	45.6	25.9	14	21.7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Language Spoken at Home by Population 5 Years and Older								
Language other than English	23.1	37.6	31.9	70.4	31.1	16.6	26.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
speak English less than "very well" (%)	9.1	17.4	9.5	41.8	7.2	4.4	7.1	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Speak Spanish at home (%)	8.8	16.8	4.5	59.8	2	1.8	4.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
speak English less than "very well" (%)	3.6	7.9	0.9	36.4	0.4	0.3	0.8	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Other Indo-European languages (%)	8.8	11.4	12.3	6.1	10.5	8.6	10.5	US Census Bureau, 2013-2017 ACS 5-Year Estimates
speak English less than "very well" (%)	3.1	4.6	2.3	3.3	1.2	2.1	2.5	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Asian and Pacific Islander Languages (%)	4.2	7.2	11.5	2.1	16.6	4.1	9.8	US Census Bureau, 2013-2017 ACS 5-Year Estimates
speak English less than "very well" (%)	2.0	4.1	5.2	1.1	5.3	1.5	3.6	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Household								
Total households	2,585,715	263229	24716	12723	11755	10652	30952	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Family households (families) (%)	63.7	48.2	52.9	62.8	78.7	77.3	72.1	US Census Bureau, 2013-2017 ACS 5-Year Estimates
In married couple family (%)	47.2	27.5	44.3	31	71.3	68.2	60.7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Average family size	3.1	3.15	2.92	3.69	3.21	3.24	3.07	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Income/Poverty								
Unemployment Rate among Civilian Labor Force (%)	6.0	7.3	3.6	5.5	4.9	4.3	3.7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Median household income (dollars)	$74,167	$62,021	$111,289	$51,839	$162,083	$141,690	$133,853	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below federal poverty line - all residents (%)	11.1	20.5	11.4	19.5	3.6	3	4.3	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below federal poverty line - families (%)	7.8	16	5.7	16.6	2.7	2.5	2.6	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below federal poverty line - under 18 years (%)	14.6	29.7	7.6	26.5	2.6	1.2	3.9	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below federal poverty line - age 65+ (%)	9.0	20.5	6.6	20.7	3.8	6.8	4.7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below federal poverty line - female head of household, no husband present (%)	24.4	32.9	27	34.5	19.4	13.1	12	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below 200% of poverty level	23.7	36.4	18.4	44.6	8.2	5.8	11.5	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below 300% of poverty level	36.4	48.9	25.8	63.9	12.0	11.1	17.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Below 400% of poverty level	48.6	59.7	33.7	76.7	18.0	17.0	24.9	US Census Bureau, 2013-2017 ACS 5-Year Estimates
With cash public assistance income (%)	2.8	3.6	1	5.9	1.8	1	1.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
With Food Stamp/SNAP benefits in the past 12 months (%)	12.3	19	4.7	27	3.5	2.8	4.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Health Insurance								
Without insurance (%)	3.0	3.9	2.3	7.1	1	1.4	1.8	US Census Bureau, 2013-2017 ACS 5-Year Estimates
With public insurance (%)	35.5	37.1	20.2	59.3	22.3	22.7	23.3	US Census Bureau, 2013-2017 ACS 5-Year Estimates
With private insurance (%)	74.2	66.5	88.1	39.7	90.1	90	87.5	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Transportation								
Takes car, truck, van (alone) to work (%)	71	39	35	44	72	71	64	US Census Bureau, 2013-2017 ACS 5-Year Estimates

		Areas of interest					
	MA	Boston	Brookline	Chelsea	Lexington	Needham	Newton	*Source*
Demographics								
Takes car, truck, van (carpool) to work (%)	8	6	5	15	6	6	7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Takes public transportation (excluding cab) to work (%)	10	34	31	29	9	11	12	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Mean commute time (minutes)	29	30	29	32	32	30	28	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Worked outside county of residence (%)	30.8	28.6	75.9	33.6	25.7	55.5	41.7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Housing								
Vacant housing units (%)	9.7	7.9	5.7	4.4	3.9	2.8	5.1	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Owner-occupied (%)	62.4	35.3	50.9	25.7	80.8	82.6	71.3	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Avg household size of owner occupied	2.7	2.47	2.45	3.15	2.97	3	2.76	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Monthly owner costs exceed 30% of household income (%)	31.5	35.4	31.6	42.4	29.7	27.8	28.3	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Renter-occupied (%)	37.6	64.7	49.1	74.3	19.2	17.4	28.7	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Avg household size of renter occupied	2.3	2.3	2.19	2.98	2.07	1.67	2.21	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Gross rent exceeds 30% of household income (%)	50.1	52.1	48.7	52.3	38.2	49.2	47.5	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Educational Attainment (Population 25 Years and Older)								
High school degree or higher (%)	90.3	86.1	97.1	69.8	97.9	97.7	97.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Bachelor's degree or higher (%)	42.1	47.4	83	17.4	81.6	74.6	77.2	US Census Bureau, 2013-2017 ACS 5-Year Estimates
School Enrollment								
Graduation rate(%), 2017	88.3	72.7	93.5	57.3	98.5	97.6	96	Massachusetts Department of Elementary and Secondary Education School and District Profiles
Drop out rate(%), 2017	4.9	10.3	1.5	23.4	0.2	0.2	0.4	Massachusetts Department of Elementary and Secondary Education School and District Profiles
First language not English (%), 2018-19	21.9	48.3	31.8	82.4	30.8	9.6	25.1	Massachusetts Department of Elementary and Secondary Education School and District Profiles
English language learners (%), 2018-19	10.5	32.1	11	37.8	8.8	2.9	6.5	Massachusetts Department of Elementary and Secondary Education School and District Profiles
Students with Disabilities (%), 2018-19	18.1	20.3	15.8	16.1	14.1	17.2	18.7	Massachusetts Department of Elementary and Secondary Education School and District Profiles
High Needs, 2018-19	47.6	76.2	35.7	82.1	29.7	24.2	33.5	Massachusetts Department of Elementary and Secondary Education School and District Profiles
Economically disadvantaged (%), 2018-19	31.2	56.5	9.3	62.5	5.4	5.3	8.7	Massachusetts Department of Elementary and Secondary Education School and District Profiles
Total Expenditures per Pupil, 2017	$15,911.38	$20,201.16	$19,527.54	$14,984.46	$18,288.83	$17,306.62	$18,898.78	Massachusetts Department of Elementary and Secondary Education School and District Profiles
Crime								
Violent crime counts	23,393	4570	45	315		9	49	FBI Uniform Crime Reports 2017
Murder/non-negligent manslaughter	171	57	0	3		1	0	FBI Uniform Crime Reports 2017
Forcible rape	2,012	290	1	31		2	5	FBI Uniform Crime Reports 2017
Robbery	4,643	1404	12	107			5	FBI Uniform Crime Reports 2017
Aggravated assault	16,567	2819	32	174		6	39	FBI Uniform Crime Reports 2017
Property crime counts	92,614	14266	665	662		194	576	FBI Uniform Crime Reports 2017
Burglary	16,371	2109	91	97		6	87	FBI Uniform Crime Reports 2017
Larceny-theft	68,955	10952	563	491		187	471	FBI Uniform Crime Reports 2017
Motor vehicle theft	7,288	1205	11	74		1	18	FBI Uniform Crime Reports 2017
Arson	373		1	2		1	2	FBI Uniform Crime Reports 2017
Violent crime rate (per 100,000)	353	669	76	778		29	55	FBI Uniform Crime Reports 2017
Murder/non-negligent manslaughter	3	8	0	7		3	0	FBI Uniform Crime Reports 2017
Forcible rape	30	42	2	77		6	6	FBI Uniform Crime Reports 2017
Robbery	70	206	20	264		0	6	FBI Uniform Crime Reports 2017
Aggravated assault	250	413	54	429		19	43	FBI Uniform Crime Reports 2017
Property crime rate (per 100,000)	1,398	2089	1123	1634		625	642	FBI Uniform Crime Reports 2017
Burglary	247	309	154	239		19	97	FBI Uniform Crime Reports 2017
Larceny-theft	1,041	1604	950	1212		602	525	FBI Uniform Crime Reports 2017
Motor vehicle theft	110	176	19	183		3	20	FBI Uniform Crime Reports 2017
Arson	6		2	5		3	2	FBI Uniform Crime Reports 2017

B16001: LANGUAGE SPOKEN AT HOME BY ABILITY TO SPEAK ENGLISH FOR THE POPULATION 5 YEARS AND OVER - Universe: Population 5 years and over

2017 American Community Survey 1-Year

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Massachusetts		Boston city, Massachusetts		
	Estimate	Margin of Error	Estimate	Margin of Error	% of Total Pop
Total:	6,499,483	+/-1,271	649,580	+/-3,129	
Speak only English	4,937,348	+/-21,376	399,550	+/-7,968	61.51
Spanish:	591,185	+/-10,214	111,192	+/-4,732	17.12
Speak English "very well"	347,646	+/-10,550	56,921	+/-4,684	8.76
Speak English less than "very well"	243,539	+/-10,274	54,271	+/-3,849	8.35
French (incl. Cajun):	56,693	+/-5,320	6,043	+/-1,874	0.93
Speak English "very well"	44,933	+/-4,313	4,207	+/-1,450	0.65
Speak English less than "very well"	11,760	+/-2,284	1,836	+/-698	0.46
Haitian:	87,844	+/-7,507	27,048	+/-5,161	4.16
Speak English "very well"	46,959	+/-5,119	11,426	+/-2,938	1.76
Speak English less than "very well"	40,885	+/-4,240	15,622	+/-2,861	2.40
Italian:	26,351	+/-3,155	2,393	+/-752	0.37
Speak English "very well"	19,376	+/-2,681	1,370	+/-511	0.21
Speak English less than "very well"	6,975	+/-1,341	1,023	+/-531	0.16
Portuguese:	199,802	+/-13,602	16,388	+/-4,225	2.52
Speak English "very well"	109,583	+/-8,244	8,599	+/-2,239	1.32
Speak English less than "very well"	90,219	+/-8,607	7,789	+/-3,063	1.20
German:	15,728	+/-2,155	2,361	+/-1,168	0.36
Speak English "very well"	14,659	+/-2,056	2,248	+/-1,160	0.35
Speak English less than "very well"	1,069	+/-419	113	+/-143	0.02
Yiddish, Pennsylvania Dutch or other West	3,850	+/-909	866	+/-704	0.13
Speak English "very well"	3,400	+/-976	793	+/-706	0.12
Speak English less than "very well"	450	+/-298	73	+/-118	0.01
Greek:	21,624	+/-3,451	2,067	+/-1,141	0.32
Speak English "very well"	15,230	+/-2,682	1,461	+/-910	0.37
Speak English less than "very well"	6,394	+/-1,709	606	+/-467	0.09
Russian:	41,324	+/-5,040	3,928	+/-1,168	0.60
Speak English "very well"	24,273	+/-3,485	1,709	+/-635	0.26
Speak English less than "very well"	17,051	+/-4,054	2,219	+/-865	0.34
Polish:	19,586	+/-3,575	1,933	+/-994	0.30
Speak English "very well"	13,083	+/-2,647	1,229	+/-697	0.19
Speak English less than "very well"	6,503	+/-1,612	704	+/-569	0.11
Serbo-Croatian:	5,458	+/-2,342	1,124	+/-1,383	0.17
Speak English "very well"	3,782	+/-1,738	765	+/-845	0.12
Speak English less than "very well"	1,676	+/-854	359	+/-560	0.06
Ukrainian or other Slavic languages:	8,356	+/-2,698	499	+/-388	0.08

Language / English proficiency	Estimate	MOE	Estimate	MOE	Percent
Speak English "very well"	5,572	+/-1,989	424	+/-323	0.07
Speak English less than "very well"	2,784	+/-1,387	75	+/-124	0.01
Armenian:	6,863	+/-2,253	88	+/-106	0.01
Speak English "very well"	4,683	+/-1,608	32	+/-51	0.00
Speak English less than "very well"	2,180	+/-1,001	56	+/-94	0.01
Persian (incl. Farsi, Dari):	3,950	+/-1,212	582	+/-442	0.09
Speak English "very well"	2,842	+/-862	293	+/-232	0.05
Speak English less than "very well"	1,108	+/-619	289	+/-274	0.04
Gujarati:	13,334	+/-4,780	894	+/-513	0.14
Speak English "very well"	8,788	+/-3,925	577	+/-390	0.09
Speak English less than "very well"	4,546	+/-1,765	317	+/-356	0.05
Hindi:	26,568	+/-4,169	2,883	+/-1,128	0.44
Speak English "very well"	23,365	+/-3,695	2,656	+/-1,123	0.41
Speak English less than "very well"	3,203	+/-1,203	227	+/-238	0.03
Urdu:	5,907	+/-2,352	1,042	+/-659	0.16
Speak English "very well"	4,099	+/-1,939	428	+/-290	0.07
Speak English less than "very well"	1,808	+/-808	614	+/-605	0.09
Punjabi:	3,792	+/-1,972	194	+/-189	0.03
Speak English "very well"	2,137	+/-961	163	+/-180	0.03
Speak English less than "very well"	1,655	+/-1,167	31	+/-60	0.00
Bengali:	8,024	+/-2,732	1,265	+/-915	0.19
Speak English "very well"	6,097	+/-2,455	470	+/-395	0.07
Speak English less than "very well"	1,927	+/-891	795	+/-664	0.12
Nepali, Marathi, or other Indic languages:	15,716	+/-4,262	360	+/-459	0.06
Speak English "very well"	8,253	+/-2,560	82	+/-163	0.01
Speak English less than "very well"	7,463	+/-2,969	278	+/-431	0.04
Other Indo-European languages:	21,992	+/-4,011	3,008	+/-938	0.46
Speak English "very well"	14,204	+/-2,530	2,405	+/-847	0.37
Speak English less than "very well"	7,788	+/-2,533	603	+/-488	0.09
Telugu:	10,000	+/-2,414	472	+/-375	0.07
Speak English "very well"	7,959	+/-1,911	472	+/-375	0.07
Speak English less than "very well"	2,041	+/-1,091	0	+/-210	0.00
Tamil:	10,109	+/-2,711	222	+/-184	0.03
Speak English "very well"	8,948	+/-2,538	222	+/-184	0.03
Speak English less than "very well"	1,161	+/-551	0	+/-210	0.00
Malayalam, Kannada, or other Dravidian	6,643	+/-2,387	173	+/-213	0.03
Speak English "very well"	5,138	+/-1,868	164	+/-212	0.03
Speak English less than "very well"	1,505	+/-986	9	+/-17	0.00
Chinese (incl. Mandarin, Cantonese):	133,689	+/-8,167	27,253	+/-3,441	4.20
Speak English "very well"	65,716	+/-5,789	11,577	+/-2,132	1.78
Speak English less than "very well"	67,973	+/-5,670	15,676	+/-2,167	2.41
Japanese:	9,712	+/-1,946	1,754	+/-818	0.27
Speak English "very well"	4,457	+/-1,219	337	+/-299	0.05
Speak English less than "very well"	5,255	+/-1,390	1,417	+/-717	0.22
Korean:	20,021	+/-2,988	3,209	+/-1,149	0.49
Speak English "very well"	12,143	+/-2,367	2,824	+/-1,093	0.43
Speak English less than "very well"	7,878	+/-1,491	385	+/-255	0.06
Hmong:	272	+/-288	0	+/-210	0.00
Speak English "very well"	156	+/-158	0	+/-210	0.00
Speak English less than "very well"	116	+/-185	0	+/-210	0.00
Vietnamese:	39,489	+/-5,027	10,703	+/-2,868	1.65
Speak English "very well"	14,352	+/-2,602	2,331	+/-866	0.36
Speak English less than "very well"	25,137	+/-3,747	8,372	+/-2,575	1.29

Khmer:	21,804	+/-3,596	359	+/-391	0.06
Speak English "very well"	10,080	+/-2,252	93	+/-157	0.01
Speak English less than "very well"	19,724	+/-2,328	266	+/-260	0.04
Thai, Lao, or other Tai-Kadai languages:	8,786	+/-2,425	447	+/-357	0.07
Speak English "very well"	3,414	+/-1,281	263	+/-213	0.04
Speak English less than "very well"	5,372	+/-1,644	184	+/-186	0.03
Other languages of Asia:	10,689	+/-3,329	2,434	+/-1,366	0.37
Speak English "very well"	5,761	+/-1,936	1,602	+/-1,102	0.25
Speak English less than "very well"	4,928	+/-2,038	832	+/-835	0.13
Tagalog (incl. Filipino):	7,884	+/-1,993	1,147	+/-622	0.18
Speak English "very well"	5,651	+/-1,523	763	+/-393	0.12
Speak English less than "very well"	2,233	+/-1,011	384	+/-329	0.06
Ilocano, Samoan, Hawaiian, or other	2,498	+/-1,199	612	+/-438	0.09
Speak English "very well"	2,235	+/-1,031	612	+/-438	0.09
Speak English less than "very well"	263	+/-310	0	+/-210	0.00
Arabic:	29,020	+/-4,812	4,466	+/-1,629	0.69
Speak English "very well"	18,712	+/-3,340	2,840	+/-1,153	0.44
Speak English less than "very well"	10,308	+/-2,914	1,626	+/-989	0.25
Hebrew:	7,086	+/-1,865	1,056	+/-650	0.16
Speak English "very well"	6,187	+/-1,655	1,056	+/-650	0.16
Speak English less than "very well"	899	+/-635	0	+/-210	0.00
Amharic, Somali, or other Afro-Asiatic languages:	10,362	+/-3,133	4,053	+/-1,956	0.62
Speak English "very well"	5,335	+/-2,406	1,810	+/-1,140	0.28
Speak English less than "very well"	5,027	+/-1,823	2,243	+/-1,469	0.35
Yoruba, Twi, Igbo, or other languages of Western	22,946	+/-4,978	2,920	+/-1,547	0.45
Speak English "very well"	14,726	+/-3,792	1,584	+/-849	0.24
Speak English less than "very well"	8,220	+/-2,621	1,336	+/-870	0.21
Swahili or other languages of Central, Eastern,	18,834	+/-4,493	660	+/-535	0.10
Speak English "very well"	14,130	+/-3,702	356	+/-406	0.05
Speak English less than "very well"	4,704	+/-1,949	304	+/-383	0.05
Navajo:	0	+/-210	0	+/-210	0.00
Speak English "very well"	0	+/-210	0	+/-210	0.00
Speak English less than "very well"	0	+/-210	0	+/-210	0.00
Other Native languages of North America:	415	+/-394	0	+/-210	0.00
Speak English "very well"	366	+/-360	0	+/-210	0.00
Speak English less than "very well"	49	+/-84	0	+/-210	0.00
Other and unspecified languages:	7,929	+/-1,932	1,932	+/-1,052	0.30
Speak English "very well"	6,026	+/-1,643	1,744	+/-981	0.27
Speak English less than "very well"	1,903	+/-911	188	+/-228	0.03

Behavioral Risk Factors

| Statistically higher than statewide rate |
| Statistically lower than statewide rate |

Source: Behavioral Risk Factor Surveillance System 2016 and 2017

	Massachusetts	Boston Metropolitan Division
Behavioral Risk Factors (percent of respondents)		
Alcohol and Tobacco/Smoking		
Binge drinking (2017)	20.1	20
Heavy drinking (2017)	6.9	7.7
Current smoker status (2017)	13.8	15.3
Current E-Cigarette User (2017)	3.6	4
Cholestoral Awareness		
Cholestoral checked in the last five years (2017)	86.4	87.3
Adults with high cholestoral (2017)	28.5	31.3
Chronic Health Indicators		
Arthritis		
Have arthritis (2017)	21.5	20.8
Have arthritis, have limited usual activites (2017)	10.3	9.9
Current asthma (2017)	11.6	12.4
Cardiovascular disease		
Angina/coronary heart disease (2017)	3	2.8
Ever had a heart attack (2017)	5.7	3
Ever had a stroke (2017)	2.7	3.4
COPD		
Ever told you have COPD (2017)	5	4.5
Depression		
Told had a form of depression (2017)	18.5	15.7
Diabetes		
Has diabetes (2017)	8.4	8.1
Has pregnancy-related diabetes (2017)	1.7	2.2
Kidney Disease		
Ever told had kidney disease (2017)	2.8	3.6
Screening		
Colorectal Cancer Screening		

Source: Behavioral Risk Factor Surveillance System 2016 and 2017

	Massachusetts	Boston Metropolitan Division
Behavioral Risk Factors (percent of respondents)		
Had a colonoscopy (2016)	73.2	72.7
Had a sigmoidoscopy (2016)	2.9	0
Had mammogram in past 2 years (Women 40+)(2016)	79	84.5
Women aged 21-65 who have had a pap test in the past three years(2016)	83.8	83.4
Ever tested for HIV (Adults 18-64) (2017)	39.4	42.5
Disability		
Difficulty concentrating, remembering, or making decisions (2017)	10.3	9.2
Difficulty walking or climbing stairs (2017)	10.8	11.1
Health Care Access/Coverage (2017)		
Unable to see Doctor due to cost (past 12 months) (2017)	9.6	10.8
Has healthcare coverage (2017)	94.5	93.1
Visited a doctor within the past year (2017)	74.9	72.9
Visited a dental provider within the past year for any reason (2016)	73.5	72.7
Reporting Fair or Poor Health (2017)	15.2	14.4
Adults with high blood pressure (2017)	25.7	24.2
Adults 65+ with flu vaccine in past 12 months (2017)	57.3	51.2
Weight Management		
Overweight/Obese (2017)	61.5	59.5
Participated in 150 minutes of aerobic activity per week (2017)	50.8	50.6

*age-adjusted prevalence

Notes:

All above estimates are crude prevalence rates. No age-adjusting was done

Binge drinking: Binge drinkers (males having five or more drinks on one occasion, females having four or more drinks on one occasion)

Heavy drinking: Heavy drinkers (adult men having more than 14 drinks per week and adult women having more than 7 drinks per week)

Had a colonoscopy: Aged 50-75 had a colonoscopy in the past 10 years

Had a sigmoidoscopy: Aged 50-75 had a sigmoidoscopy within the past 5 years

Clinical Indicators

Statistically higher than statewide rate
Statistically lower than statewide rate

		Areas of Interest						
	MA	**Boston**	**Brookline**	**Chelsea**	**Lexington**	**Needham**	**Newton**	*Source*
Demographics								
All cause								
Deaths, 2015	684.5	722.9	443.3	911.1	425.6	551.0	506.5	MDPH Registry of Vital Records and Statistics
Premature mortality for <75 yr population, 2015	279.6	341.7	150.3	399.4	146.5	156.6	161.7	MDPH Registry of Vital Records and Statistics
Injuries and Poisonings								
Deaths, 2015	58.0	57.6	28.2	88.2	37	21.7	29.9	MDPH Registry of Vital Records and Statistics
Motor Vehicle Related								
Deaths, 2015	5.4	4.0	--1	--1	0	0	0	MDPH Registry of Vital Records and Statistics
Assault								
Deaths, 2015	2.0	4.4	--1	--1	0	0	0	MDPH Registry of Vital Records and Statistics
Behavioral Health								
Admissions to BSAS Contracted/Licensed Programs FY17								
Number of people served	81,006	10664	117	747	0-100	0-100	253	MA Bureau of Substance Abuse Services (BSAS)
Number of admissions	109,001	15629	0-100	697	0-100	0-100	242	MA Bureau of Substance Abuse Services (BSAS)
% Male	67.8	74.2	65.3	72.3	50.9	63.3	63.2	MA Bureau of Substance Abuse Services (BSAS)
% Black of African American	7.3	21.1	7.7	8.6	*	0	4.1	MA Bureau of Substance Abuse Services (BSAS)
% Multi-Racial	6.3	9	*	8.9	0	*	3.3	MA Bureau of Substance Abuse Services (BSAS)
% Other	9.4	13.1	8.8	34.2	*	*	5.4	MA Bureau of Substance Abuse Services (BSAS)
% White	77.1	56.7	82.4	48.3	94.2	93.2	87.2	MA Bureau of Substance Abuse Services (BSAS)
% Hispanic	14.0	19.9	*	47.1	*	*	8.7	MA Bureau of Substance Abuse Services (BSAS)
% No Education/Less Than High School Education	25.5	29.7	22.9	31.4	20	*	12.1	MA Bureau of Substance Abuse Services (BSAS)
% College Degree or Higher	7.4	5.8	31.3	4.8	22.2	22.8	23.4	MA Bureau of Substance Abuse Services (BSAS)
% Less Than 18	1.3	0.5	6.3	1.6	*	*	2.9	MA Bureau of Substance Abuse Services (BSAS)
% 18 to 25	14.7	8.5	7.4	11	17	35	13.6	MA Bureau of Substance Abuse Services (BSAS)
% 26 to 30	21.7	17	17.9	13.9	45.3	26.7	29.3	MA Bureau of Substance Abuse Services (BSAS)
% 31 to 40	30.9	33.4	27.4	43.3	17	11.7	24	MA Bureau of Substance Abuse Services (BSAS)
% 41 to 50	17.6	22.5	12.6	15.5	*	*	16.5	MA Bureau of Substance Abuse Services (BSAS)
% 51 and older	13.9	18	28.4	14.6	*	18.3	13.6	MA Bureau of Substance Abuse Services (BSAS)
% Employed at Enrollment	44.9	33.9	66.7	49	50	60.5	54	MA Bureau of Substance Abuse Services (BSAS)
% Homeless at Enrollment	30.1	57.6	17.1	33	0	0	17.1	MA Bureau of Substance Abuse Services (BSAS)
% At Risk of Homelessness	38.1	66.1	22	40.9	17.3	0	24.5	MA Bureau of Substance Abuse Services (BSAS)
% Past Year Needle Use	47.6	52.9	31.8	41.3	46.2	27.1	43.3	MA Bureau of Substance Abuse Services (BSAS)
% Prior Mental Health Treatment	46.2	40.3	59.1	39.2	51.9	39	50.6	MA Bureau of Substance Abuse Services (BSAS)
Primary Substance of Use 2017								
Total Admissions	98,948	14784	0-100	676	0-100	0-100	233	MA Bureau of Substance Abuse Services (BSAS)
% Alcohol	32.8	29.9	47.7	31.4	26.9	50.8	44.2	MA Bureau of Substance Abuse Services (BSAS)
% Crack/Cocaine	4.1	4.5	*	4.3	*	*	3	MA Bureau of Substance Abuse Services (BSAS)

	MA	Areas of Interest						Source
		Boston	Brookline	Chelsea	Lexington	Needham	Newton	
Demographics								
% Heroin	52.8	56.9	31.8	53.3	48.1	30.5	41.2	MA Bureau of Substance Abuse Services (BSAS)
% Marijuana	3.4	3	10.2	7.1	*	*	4.7	MA Bureau of Substance Abuse Services (BSAS)
% Other	0.3	0.3	*	*	*	*	*	MA Bureau of Substance Abuse Services (BSAS)
% Other Opioids	4.6	2.4	*	204	*	*	4.3	MA Bureau of Substance Abuse Services (BSAS)
% Other sedatives/hypnotics	1.5	2.1	*	*	*	*	*	MA Bureau of Substance Abuse Services (BSAS)
% Other stimulants	0.5	0.9	*	*	*	*	*	MA Bureau of Substance Abuse Services (BSAS)
Mental Disorders (age adjusted per 100,000)								
Deaths, 2015	62.9	58.7	43.1	124.8	37.1	61.4	50.3	MDPH Registry of Vital Records and Statistics
Suicide Deaths, 2015	9.0	6.6	--1	0	13.5	--1	9.3	MDPH Registry of Vital Records and Statistics
Opioids (age adjusted per 100,000)								
Opioid-related overdose death count by city/town of residence for the decedent, 2014-2018	9,114.0	830	15	63	10	5	42	MDPH Registry of Vital Records and Statistics
Opioid-related overdose death count by city/town of death occurence, 2014-2018	9,443.0	1168	12	50	8	4	44	MDPH Registry of Vital Records and Statistics
Fatal Overdoses, 2015	24.6	24.4	--1	50	--1	--1	9.8	MDPH Registry of Vital Records and Statistics
Chronic Disease (age-adjusted rates per 100,000)								
Diabetes								
Deaths, 2015	16.8	21.6	8.7	56.6	9.6	--1	10.1	MDPH Registry of Vital Records and Statistics
Hypertension								
Deaths, 2015	6.9	8.9	10.4	--1	--1	--1	5.9	MDPH Registry of Vital Records and Statistics
Major cardiovascular disease								
Deaths, 2015	180.8	187.8	138.4	217.4	103.8	136.4	137.4	MDPH Registry of Vital Records and Statistics
Heart Disease								
Deaths, 2015	138.7	142	112.8	165.1	82.8	104.5	109.8	MDPH Registry of Vital Records and Statistics
Coronary Heart Disease								
Deaths, 2015	82.3	90.5	61.4	79.3	46	65.1	67.2	MDPH Registry of Vital Records and Statistics
Cerebrovascular								
Deaths, 2015	28.4	30.3	13.2	37.5	10.7	22.9	18.2	MDPH Registry of Vital Records and Statistics
Chronic lower respiratory diseases								
Deaths, 2015	33.0	28.6	13.4	47.2	13.1	18.1	16.7	MDPH Registry of Vital Records and Statistics
Asthma								
Deaths, 2015	1.0	2.6	0	--1	0	--1	0	MDPH Registry of Vital Records and Statistics
Chronic Liver Disease								
Deaths, 2015	8.1	7.2	0	--1	0	--1	--1	MDPH Registry of Vital Records and Statistics
Cancer (age-adjusted rates per 100,000)								
All-cause								
Deaths, 2015	152.8	170.5	100.7	120.3	101.9	136.5	137.2	MDPH Registry of Vital Records and Statistics
Breast (invasive, female)								
Deaths, 2015	9.8	19.5	15.8	--1	0	13.6	11.9	MDPH Registry of Vital Records and Statistics
Colorectal								
Deaths, 2015	12	14.1	--1	--1	10.3	--1	13.9	MDPH Registry of Vital Records and Statistics
Lung								

		Areas of Interest						
	MA	Boston	Brookline	Chelsea	Lexington	Needham	Newton	*Source*
Demographics								
Deaths, 2015	39	38	28.6	36.5	9.7	37.3	23.1	MDPH Registry of Vital Records and Statistics
Prostate								
Deaths, 2015	7	25.3	20.2	0	0	28.4	15.3	MDPH Registry of Vital Records and Statistics
Maternal and Child Health								
Infant Mortality, 2015 (rate per 1,000)	4.3	5.5	--1	--1	0	0	--1	MDPH Registry of Vital Records and Statistics
Preterm (<37 weeks) births (%), 2016	7.5	8.8	6.3			7.1		
Low Birth Weight (<2500 grams/5.5 lbs), 2016 (%)	7.5	8.7	6.3	8	10.9	3.2	7.1	MDPH, Annual reports on Massachusetts births
Births to female residents aged 15-19 (rate per 1000), 2016	8.5	7.6		32.6				
Adequate prenatal care (%)**	82.3	79.9	89.2				28-Mar	
Infectious Disease								
Chlamydia cases (lab confirmed), 2017	29203	5725		246	34	47	223	MDPH Bureau of Infectious Disease and Laboratory Services
Gonorrhea cases (lab confirmed), 2017	7307	1850		60	6	6	33	MDPH Bureau of Infectious Disease and Laboratory Services
Syphillis cases (probable and confirmed), 2017	1091	341		9	<5	<5	7	MDPH Bureau of Infectious Disease and Laboratory Services
Hepatitis A cases (confirmed), 2017	53	9		<5	0	0	2	MDPH Bureau of Infectious Disease and Laboratory Services
Chronic Hepatitis B (confirmed and probable), 2017	2023	387		7	13	<5	37	MDPH Bureau of Infectious Disease and Laboratory Services
Hepatitis C cases (confirmed and probable), 2017	7765	875		33	11	11	35	MDPH Bureau of Infectious Disease and Laboratory Services
Tuberculosis (rates per 100,000), 2017	3.1	7.1	6.8	11.4			1.2	MDPH Bureau of Infectious Disease and Laboratory Services
Pneumonia/Influenza								
Confirmed Influenza cases, 2017	24278	2822		235	102	95	259	MDPH Bureau of Infectious Disease and Laboratory Services
Deaths, 2015	17.1	14.5	--1	25.2	--1	11	7.3	MDPH Registry of Vital Records and Statistics
HIV/AIDS (age-adjusted rate per 100,000)								
Incidence, 2017	1870	422		22	0	0	14	MDPH Registry of Vital Records and Statistics
Deaths, 2015	1.1	3.6	0	0	0	0	--1	MDPH Registry of Vital Records and Statistics
Infectious and Parasitic Disease (age-adjusted rate per 100,000)								
Deaths, 2015	18.9	30.2	9.7	31.1	8.9	--1	11.9	MDPH Registry of Vital Records and Statistics
Elder Health (age-adjusted rate per 100,000)								
Alzheimers deaths	20.2	15.8	18.9	--1	12.9	24.6	19.6	MDPH Registry of Vital Records and Statistics
Parkinson's deaths	7.7	7.8	12.9	24.9	--1	--1	4.6	MDPH Registry of Vital Records and Statistics

*All other opioids includes non-prescription Methadone, Oxycodone, non-prescription Suboxone, prescription opiates, and non-prescription opiates

**Based on the Adequacy of Prenatal Care Utilization (APNCU) Index

Statistically higher than statewide rate
Statistically lower than statewide rate

Source: Massachusetts Vital Statistics, 2015

Cancer Mortality (Age-adjusted per 100,000), 2015	MA	Areas of Interest					
		Boston	Brookline	Chelsea	Lexington	Needham	Newton
All Types (invasive)	152.8	170.5	100.7	120.3	101.9	136.5	137.2
Bladder	4.7	3.8	--1	0	--1	--1	--1
Bone	0.3	--1	--1	0	--1	0	--1
Brain/Central Nervous System	4.7	3.5	--1	--1	--1	--1	4.5
Breast (female)	9.8	19.5	15.8	--1	0	13.6	11.9
Cervical	0.6	2.5	0	0	0	0	0
Colorectal	12.0	14.1	--1	--1	10.3	--1	13.9
Esophageal	4.9	3.5	--1	--1	0	--1	4.8
Kaposi's Sarcoma	0.0	0	0	0	0	0	0
Kidney	3.5	4.7	0	--1	0	--1	9
Larynx	0.8	--1	0	--1	0	--1	0
Leukemia	5.7	6.1	--1	0	--1	--1	11.1
Liver	6.0	10.4	--1	--1	0	--1	6.1
Lung	39.0	38	28.6	36.5	9.7	37.3	23.1
Lymphoma (Hodgkin)	0.2	--1	0	0	0	0	0
Lymphoma (Non-Hodgkin)	5.2	5.7	--1	--1	8.9	--1	6.9
Melanoma of Skin	2.3	1.4	0	0	--1	0	--1
Multiple Myeloma	3.1	4.2	0	--1	--1	--1	--1
Oral Cavity	2.4	2.9	0	0	--1	0	--1
Ovary	3.9	7.6	--1	--1	--1	--1	--1
Pancreatic	11.3	11.8	7.8	--1	15.4	--1	11.3
Prostate	7	25.3	20.2	0	0	28.4	15.3
Soft Tissue	1.5	2	--1	0	--1	--1	--1
Stomach	3.2	4.8	--1	--1	0	--1	5.9
Testis	0.1	--1	0	0	0	0	0
Thyroid	0.5	0	0	0	0	0	0
Uterine	2.7	7.4	--1	--1	--1	--1	--1

Massachusetts Healthy Aging Community Profile

Statistically higher than statewide rate
Statistically lower than statewide rate

	MA	Boston	Brookline	Chelsea	Lexington	Needham	Newton	Source
POPULATION CHARACTERISTICS								
Total population 65 years or older	1049751	73594	9233	3623	6236	5543	14874	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Population 65 years or older (% of total population)	15.5	11.0	15.6	9.2	18.7	18.2	16.8	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Population 65-74 years (% of total population)	8.7	6.2	9.4	4.8	9.7	9.4	9.4	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Population 75-84 years (% of total population)	4.5	3.2	4.0	2.9	5.3	5.2	4.3	US Census Bureau, 2013-2017 ACS 5-Year Estimates
Population 85 years or older (% of total population)	2.3	1.5	2.2	1.6	3.7	3.6	3.1	US Census Bureau, 2013-2017 ACS 5-Year Estimates
% of 65+ population living alone	29.9	39.8	31.5	40.8	23.0	29.0	26.5	US Census Bureau, 2013-2017 ACS 5-Year Estimates
% of only English speakers 65 years or older	17.7	11.7	17.7	19.9	23.0	20.2	19.0	US Census Bureau, 2013-2017 ACS 5-Year Estimates
% Language other than English over 65 years or older	11.9	11.4	13.5	6.1	12.3	14.8	13.9	US Census Bureau, 2013-2017 ACS 5-Year Estimates
% of Spanish at home speakers 65 years or older	7.0	7.7	7.0	5.3	9.7	3.9	7.9	US Census Bureau, 2013-2017 ACS 5-Year Estimates
WELLNESS & PREVENTION								
% 60+ injured in a fall within last 12 months	10.6	10.7	9.1	15.7	9.4	9.1	9.1	2018 Massachusetts Healthy Aging Community Profile
% 65+ had hip fracture	3.7	3.6	4.3	4.4	4.7	4.6	4.3	2018 Massachusetts Healthy Aging Community Profile
%60+ with self-reported fair or poor health status	18.0	24.4	9.9	29.8	13.5	9.9	9.9	2018 Massachusetts Healthy Aging Community Profile
% 60+ with physical exam/check-up in past year	89.3	88.2	88	90.1	87.8	88.0	88.0	2018 Massachusetts Healthy Aging Community Profile
BEHAVIORAL HEALTH								
% 60+ with 15+ days poor mental health last month	7.0	11	5.8	9	5.6	5.8	5.8	2018 Massachusetts Healthy Aging Community Profile
% 65+ with depression	31.5	34	35.2	42.1	30.6	29.5	31.6	2018 Massachusetts Healthy Aging Community Profile
% 65+ with anxiety disorders	25.4	23.7	26	32.4	21.9	22.7	23.3	2018 Massachusetts Healthy Aging Community Profile
% 65+ with substance use disorders (drug use +/or alcohol abuse)	6.6	8.7	4.7	12.5	4.9	4.7	4.7	2018 Massachusetts Healthy Aging Community Profile
CHRONIC DISEASE								
% 65+ with Alzheimer's disease or related dementias	13.6	15.8	14.2	18.8	15.1	15.1	13.5	2018 Massachusetts Healthy Aging Community Profile
LIVING WITH DISABILITY								
% 65+ with clinical diagnosis of deafness or hearing impairment	16.1	15.5	20.5	13.9	19.0	24.0	19.2	2018 Massachusetts Healthy Aging Community Profile
% 65+ with clinical diagnosis of blindness or visual impairment	1.5	2.1	1.8	2.2	1.5	1.4	1.4	2018 Massachusetts Healthy Aging Community Profile
% 65+ with clinical diagnosis of mobility impairments	3.9	4.9	3.3	5.5	4.0	3.3	3.4	2018 Massachusetts Healthy Aging Community Profile
ACCESS TO CARE								
% Medicare managed care enrollees	23.1	24.8	14.4	22	19.7	17.3	16.3	2018 Massachusetts Healthy Aging Community Profile
% dually eligible for Medicare and Medicaid	16.7	38	11.5	46.4	9.3	7.1	10.6	2018 Massachusetts Healthy Aging Community Profile
% 60+ with a regular doctor	96.4	94.5	98	94.9	98.3	98.0	98.0	2018 Massachusetts Healthy Aging Community Profile
% 60+ who did not see doctor when needed due to cost	4.1	4.8	1.4	5.4	2.3	1.4	1.4	2018 Massachusetts Healthy Aging Community Profile
# of nursing homes within 5 miles	399	13	18	14	6	12	18	2018 Massachusetts Healthy Aging Community Profile
# of home health agencies	299	140	55	71	32	34	50	2018 Massachusetts Healthy Aging Community Profile
# of adult day health centers	131	29	0	0	0	1	0	2018 Massachusetts Healthy Aging Community Profile
COMMUNITY VARIABLES & CIVIC ENGAGEMENT								
% of grandparents raising grandchildren	0.8	0.9	0	1.1	0.3	0.6	0.1	2018 Massachusetts Healthy Aging Community Profile
# of assisted living sites	238	11	2	2	1	3	3	2018 Massachusetts Healthy Aging Community Profile
Total of all crashes involving adult age 60+/town	132351	2851	337	509	714	642	1683	2018 Massachusetts Healthy Aging Community Profile
# of medical transportation services for older people	268	108	16	2	11	17	21	2018 Massachusetts Healthy Aging Community Profile
# of nonmedical transportation services for older people	252	221	49	5	29	45	44	2018 Massachusetts Healthy Aging Community Profile

Notes:

1. Demographics: Each American Community Survey (ACS) estimate is accompanied by the upper and lower bounds of the 90 percent confidence interval. A 90 percent confidence interval can be interpreted roughly as providing 90 percent certainty that the true number falls between the upper and lower bounds.

2. Clinical indicators: All data provided by MA DPH are estimates associated with some margin of error. Percentages are accompanied by 95% confidence intervals, meaning the true value of the measure falls within the range 95% of the time. The difference between two groups is statistically significant if the 95% confidence intervals surrounding these two estimates do not overlap

For CHIA data, confidence intervals for year over year reflect change within geography rather than difference from statewide benchmark

APPENDIX C:

Beth Israel Deaconess Medical Center
Community Health Needs Assessment
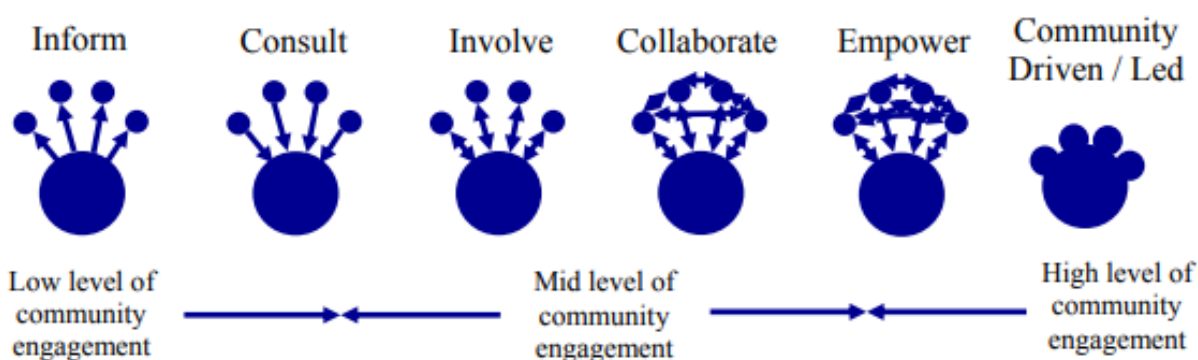## Overview of Community Engagement Activities

BIDMC recognizes the importance of collaborating with residents, advocates, service providers, Commonwealth and local public officials, representatives from community-based organizations, and other stakeholders when conducting assessment and planning projects of this kind. Community engagement is integral to BIDMC's mission and great efforts were taken to ensure that BIDMC's CHNA included substantial efforts to engage community residents and other community stakeholders across its Community Benefits Service Area (CBSA)[1]. As part of these efforts, special emphasis was made on reaching out to those who are hard-to-reach and often excluded from these types of assessments, including non-English speakers or those with limited English proficiency, racially/ethnically diverse, recent immigrants, LGBTQ populations, low income individuals/families, individuals and families impacted by incarceration, older adults, and youth. These engagement efforts spanned all phases of the assessment from assessment planning, to data collection, data analysis, prioritization, planning, and reporting, and finally to ongoing monitoring and evaluation.

In collaboration with its assessment and community engagement partners, BIDMC applied MDPH's Community Engagement Standards for Community Health Planning as a guide.[2] As a result, BIDMC employed a variety of strategies to ensure that community members were informed, consulted, involved, and empowered throughout the assessment process.

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[1] In addition to the Medical Center in the Longwood area of Boston, BIDMC operates licensed multi-specialty outpatient facilities in Chelsea, Lexington, and Chestnut Hill, as well as a cancer center in Needham and a pain center in Brookline. BIDMC also operates a licensed health center in Bowdoin/Geneva and has strong, long-standing partnerships with an additional four Boston Federally Qualified Health Centers within its Community Benefits Service Area (CBSA). The communities in which these facilities operate define BIDMC's CBSA. Accordingly, BIDMC's CBSA is defined as the city of Chelsea and the Boston neighborhoods of Allston/Brighton, Bowdoin/Geneva, Chinatown, Fenway/Kenmore, and Roxbury/Mission Hill, as well as the municipalities of Lexington, Needham, and Chestnut Hill. Since Chestnut Hill is not a registered municipality, data is reported for the communities that comprise it (Boston, Brookline, and Newton).

[2] https://www.mass.gov/files/documents/2017/01/vr/guidelines-community-engagement.pdf

Inform   Consult   Involve   Collaborate   Empower   Community Driven / Led

Low level of community engagement → ← Mid level of community engagement → ← High level of community engagement

Source: Adapted from International Association for Public Participation, 2014

As discussed in the body of this report, it would be difficult to overstate BIDMC's commitment to robust, collaborative, inclusive, transparent, and objective assessment and community engagement process. BIDMC's Community Benefits staff dedicated countless hours of their time and other resources, over nearly a year, to conduct this Community Health Needs Assessment (CHNA), including an extensive series of community engagement activities. Below is a summary table outlining the breadth of engagement activities. Following the table are specific details of the breadth of BIDMC's engagement activities.

BIDMC Assessment Activities 2018-2019

Methods	Summary of Community Engagement Methods Applied Across all Assessment Components
Key Informant Interviews	~ 70 interviews with health and social service providers, public health officials, advocates, residents, and other community Stakeholders
Community Health Survey Responses	~ 4,500 survey responses from community residents
Focus Groups	~ 16 focus groups with key population segments (e.g., Black/African Americans, Hispanics/Latinos, LGBTQ, or service provider groups)
Community Meetings	~ 15 community meetings open to the public in neighborhoods across Boston and Chelsea

There are two components of this summary. First is a detailed description of the community engagement activities that were conducted either directly by BIDMC or indirectly in partnership with other hospitals, hospital collaboratives, or other community partners. These descriptions include an explanation of the engagement activity, where it took place, and when the activity occurred, as well as an account of the number of individuals involved, meetings held, or focus groups conducted. For the activities that were conducted by BIDMC directly, the tools (e.g., key informant guides, focus group guides, or surveys) that were used to engage the community are also provided.

Second, there is a table at the end of this appendix that describes the activities and strategies that were applied as part of BIDMC's CHNA process that illustrate how community members were engaged in the

assessment across the continuum of different levels of engagement (e.g., informed, consulted, involved, and empowered) per MDPH's Community Engagement Standards for Community Health Planning.

1. Description of Community Engagement Activities Across Different Aspects of BIDMC's CHNA

Boston CHNA-CHIP Collaborative

The Boston CHNA-CHIP Collaborative conducted an extensive amount of engagement activities. Below is a table that provides a brief overview of the breadth of engagement activities that were conducted as part of the Boston CHNA-CHIP Collaborative's efforts. This description includes activities that were conducted by the Collaborative's Steering Committee or Workgroups as part of the assessment planning, data collection, analysis, prioritization, and reporting tasks. This description also includes activities that were conducted by the Collaborative and its partners to gather information directly from community residents and other stakeholders regarding community health need.

Following the table below are a series of appendices drawn directly from the Boston CHNA-CHIP Collaborative's Report, included in its entirety in Appendix H, that provide specific engagement related details, including the:

- Boston CHNA-CHIP Collaborative Steering Committee Members
- Boston CHNA-CHIP Collaborative Community Engagement Workgroup Members
- Organizations involved with Boston CHNA Survey Distribution
- Boston CHNA Survey Respondent Characteristics
- Boston CHNA-CHIP Collaborative Focus Group Participant Characteristics
- Focus Group Hosts or Recruiting Organizations that participated in the Focus Groups Activities
- List of Key Informant Interviewees

Overview of Engagement

Engagement Activity	Purpose	Audience	Timeline
Kick-off meeting	Provide an overview of the process ahead; invite people to be part of the Collaborative	Community members; organizational staff from across different sectors	September 17, 2018
Engagement in Data Collection Process	Assist in the coordination and collection of primary data including: recruiting and organizing focus groups, conducting interviews with stakeholders, disseminating community survey in-person and online	• 13 focus group with community members conducted (n=104) • 45 interviews with organizational and community leaders conducted • 2,404 community residents completed community survey	January-March 2019

		91 community organizations and leaders involved in helping with data collection (interviews, focus group recruitment, survey administration	
CHNA Trainings/Capacity Building	Virtual training/capacity building for Collaborative members on primary data collection: set of virtual trainings on key informant interview facilitation and set of virtual trainings on survey administration	36 community members and organizational staff from across different sectors Additional training for Healthy Community Champions (HCC) conducting survey administration	• Jan 29, 2019 (one training in a.m.; one in p.m. -KIIs only) • Jan 31, 2019 (one training in a.m.; one in p.m. – survey only) • Feb 13, 2019 (survey training, with HCCs only
Community Engagement Work Group	Overall goal: Provide Steering Committee with guidance on the approach to community engagement, input on primary data collection methods, and support coordinating and conducting primary data collection	54 members; open to anyone interested in joining	• Aug 16, 2018 • Oct 1, 2018 • Oct 31, 2018 (joint) • Nov 26, 2018 • Dec 10, 2018 • Jan 17, 2019 • April 5, 2019 (joint)
Secondary Data Work Group	Overall goal: Provide Steering Committee with guidance related to the secondary data approach, including identifying appropriate indicators, gaps in data, and new or alternative data sources and for the Boston CHNA	32 members; open to anyone interested in joining	• Sept 14, 2018 • Sept 21, 2018 • Oct 18, 2018 • Oct 31, 2018 (joint) • Nov 29, 2018 • Feb 11, 2019 • April 5, 2018 (joint)
Joint Work Group Meetings	Jointly come to a consensus on the proposed secondary data and primary engagement strategies; brainstorm population	• 29 work group members participated in Oct 31 joint meeting • 27 work group members participated in Data Day	Oct 31, 2018 April 5, 2019 (3-hour Data Day)

	groups and stakeholders to engage in CHNA plans.		
Early prioritization engagement meetings	Small group discussions across the city with community residents, organizational staff, and other stakeholders. Discussions included a data presentation of the draft CHNA key findings, overview of the 19 key issues that emerged, and the five criteria used for prioritization, and an interactive discussion with participants on what priorities rose to the top for them based on these criteria.	10 meetings with 121 participants • 3 community meetings (organized by BPHC) • Boston BoH meeting • Mass League of CHCs leadership meeting • 3 meetings with Boston city agency staff and leaders • 2 institutional-level Community Advisory Committee meetings (DFCI, BWH)	May-June 2019
Prioritization Refinement Meeting	Large in-person meeting for further engagement and refinement in the prioritization process; participate in a large group voting process to identify 2-4 priorities for collaborative planning.	Over 100 organizational staff from across different sectors; community members	May 29, 2019
CHIP Planning Session	To collaboratively identify goals and objectives for the 4 priority areas agreed upon (Housing, Finance, Behavioral Health, Access)	Approximately 105 organizational staff from across different sectors; community members	June 26, 2019
CHIP Action Planning	To further flesh out the CHIP with strategies and action planning steps for the each of the four priority areas	Smaller group of organizational staff from across different sectors; community residents; subject matter experts	To happen: Sept 2019

North Suffolk Integrated Community Health Needs Assessment (iCHNA)

From the onset, the intention of the North Suffolk iCHNA was to develop broad regional plans to guide the municipalities of Chelsea, Revere, and Winthrop, services providers, public and private organizations, and health systems that serve the area. To be effective, these plans would be:

- **Comprehensive:** involving a full range of stakeholders, data, and a broad definition of health and wellbeing to create a CHNA that would fulfill the needs of all

- **Inclusive:** ensure all segments of the population would have a voice in process, data collection, and implementation plan

- **Data-considered:** gathering as much primary and secondary data on the health, wellbeing, and quality of life of residents through qualitative and quantitative methods in order to prioritize health needs

- **Collaborative:** guiding and engaging stakeholders throughout the process for sound decision making, co-learning, and transparency

With this in mind, the Steering Committee for the iCHNA conducted an extensive amount of community engagement. The following is a description of these activities.

1. **Steering Committee:** The Steering Committee was a selected group of leaders, including a representative of each Board of Health, health and social service providers, other community stakeholders, and leaders of organizations in the community. The Steering Committee set direction and policy of the process; track progress toward completion of tasks; coordinate communication to key stakeholders and the public and make final decisions about priorities and implementation plans. The Steering Committee reviewed and informed CHNA findings and reports and determined the priorities for the CHIP. The Steering Committee met every other month throughout the roughly 10-month CHNA and CHIP process. The meetings were listed on the CHNA website, and subcommittee members were invited as well.

2. **Community Engagement Subcommittee:** Eighteen people represented a broad cross section of community stakeholders joined the subcommittee. The purpose of the subcommittee was to identify organizations who had access to populations who might not otherwise be engaged in this process without intentional outreach. They were also charged with recommending community engagement strategies, identifying potential community facilitators, reaching out to organizations and individuals for survey distribution and focus group coordination and supporting the communications of the process and final products. The subcommittee met 4 times, with the fourth meeting being a joint meeting with the Instrument Review subcommittee.

3. **Website & Cable Access Panel:** To promote the CHNA and CHIP process, ensure that the community had the opportunity to engage the process, keep community members up to date, and house the links to the survey, a website was created: www.northsuffolkassessment.com. The website was widely distributed through emails and flyers, with the website, emails, and flyers all available in English, Spanish, Portuguese, and Arabic.

4. **Quality of Life Survey**: The anonymous survey assessed community perceptions of quality of life, health problems in the community, community strengths, safety, community changes and demographic information (including perceptions of personal health, food and housing stability, and utilization of select local resources). The survey was translated into Spanish, Portuguese, and Arabic, and was distributed widely via the web and in-person within each participating organization. A total of 1,827 individuals across Revere, Chelsea, and Winthrop responded to the survey.

5. **Focus Groups**: Qualitative data were collected through focus groups with the help of a small group of volunteers from partner organizations and the CCHI Evaluation Team. Focus group guides were created for facilitators and note takers with standard questions regarding perceptions about the health of the community, community assets, and pressing health issues. Focus group participants were identified by the North Suffolk Integrated Community Health Needs Assessment Steering Committee using a segment inclusiveness worksheet to ensure that a variety of diverse individuals across multiple sectors and populations were included. A total of 22 focus groups were completed, 9 with staff from community-based organizations and 13 with community residents resulting in a combined total of 212 people engaged through this process. Each focus group lasted approximately 45 to 60 minutes. Community residents received a $15 gift card at the end of the focus groups as compensation for their time.

6. **Key Informant Interview**: In addition, qualitative data were collected through key informant interviews with the help of a small group of volunteers from partner organizations and the CCHI Evaluation Team. Interview and focus group guides were created for facilitators and note takers with standard questions regarding perceptions about the health of the community, community assets, and pressing health issues. Key informant interviews were conducted both in-person and on the phone based on facilitator and interviewee availability. Key informants were identified by the North Suffolk Integrated Community Health Needs Assessment Steering Committee using a segment inclusiveness worksheet to ensure that a variety of diverse individuals across multiple sectors and populations were included. A total of 28 interviews were conducted. Each interview lasted approximately 45 to 60 minutes.

Beth Israel Lahey Health (BILH) and Other Hospital Community Health Needs Assessments

BIDMC and numerous hospitals within the BILH system (i.e., New England Baptist Hospital, Beth Israel Deaconess Hospital – Needham, and Lahey Hospital Medical Center,) and other hospitals in Boston (i.e., Brigham and Women's Hospital, Dana-Farber Cancer Institute, Boston Children's Hospital) conducted meetings jointly and shared information to inform each other's assessments. These hospitals operate in BIDMC CBSA and, as a result, efforts were made to share information and align community engagement and assessment activities whenever possible.

Key Informant Interviews. Qualitative information from key informant interviews and meetings involving residents and key stakeholders in Lexington was shared by Beth Israel Deaconess Hospital –

Needham in Needham, Lahey Hospital Medical Center in Burlington (who serves Lexington), and New England Baptist Hospital in the Mission Hill Neighborhood of Boston.

LEXINGTON (Lahey Hospital Medical Center in Burlington)			
Name	**Title**	**Affiliation**	**Date/Time**
Kathy Fox	Environmental Health Agent	Lexington Department of Health	February 2019
Beatrice Ford	Director of Operations	BID HealthCare Lexington/Chestnut Hill	11/29/2018
Alicia Grunes	Human Services Nurse	Lexington Department of Health	2/13/2019
Melissa Interess	Director of Health and Human Services	Lexington Department of Health	February 2019
David Neylon	Community Health Nurse	Lexington Department of Health	2/4/2019
MISSION HILL NEIGHBORHOOD, BOSTON (New England Baptist Hospital)			
Name	**Title**	**Affiliation**	**Date/Time**
Sophie Deung	Community Member	Mission Hill Legacy Project and Roxbury Tenants Association	3/26/2019
Matilda Drayton	Staff Member	Alice Taylor Heyward Housing Development	3/28/2019
Patricia Flaherty	Executive Director	Mission Hill Neighborhood Housing Services	4/9/2019
Karen Gately	Executive Director	Roxbury Tenants of Harvard	4/17/2019
John Jackson	Executive Director	Tobin/Mission Hill Community Center	3/26/2019
Holly Oh	Medical Director	Dimmock Center	6/3/2019
Alexandra Oliver-Davila	Executive Director	Sociedad Latina	6/2/2019
David Welch	Community Member	Community Member	6/26/2019
Josh Zakim	Boston City Councilor	City of Boston	3/18/2019
NEEDHAM (Beth Israel Deaconess Hospital - Needham)			
Name	**Title**	**Affiliation**	**Date/Time**
Representative Denise Garlick	*State Representative*	*Massachusetts*	*3/15/2019*
Timothy Muir McDonald	*Director*	*Needham Department of Public Health*	*11/12/2018*
Jessica Tracy -	*Director*	*Dedham Department of Public Health*	*3/29/2019*
Linda Shea	*Director*	*Westwood Department of Public Health*	*11/19/2018*
Carol Read	*Director*	*Regional Substance Abuse Prevention Coalition*	*11/20/2018*
David Buckle, MD	*Medical Director*	*APG, Dedham*	*11/15/2018*

Marsha Medalie	VP and Chief Operating Officer	Riverside	11/20/2018
Latanya Steele	Director	Needham Council on Aging	1/28/2019
Janet Claypoole	Director	Dover Council on Aging	11/28/2018
Sheila Pransky	Director	Dedham Council on Aging	11/28/2019
Lina Arena DeRosa	Director	Westwood Council on Aging	11/13/2018
Sandra Robinson	Executive Director	Needham Community Council	11/13/2018
Dennis Cataldo		Cataldo Ambulance	1/8/2019

Focus Groups. Information was also gathered through focus groups. In total, New England Baptist Hospital organized two focus groups involving more than 30 people. Specifically, focus groups were held with the New England Baptist Hospital Patient Family Advisory Committee, which is comprised of community members and long-term patients from Mission Hill, and the Mission Hill Legacy Project, which is an organization of older adults from Mission Hill who come together to organize social events and community-oriented projects. The Mission Hill Legacy Project holds a Legacy Project Birthday Party approximately quarterly and a focus group was organized as part of one of the parties.

Name of group	Population/Sector Represented	Date	Location	Number of attendees
MISSION HILL / ROXBURY				
Mission Hill Legacy Project	This focus group was facilitated by staff at John Snow, Inc. (JSI) as part of NEBH's CHNA. The Mission Hill Legacy Project Meets quarterly to celebrate community members' birthdays. JSI took this opportunity to discuss NEBH's CHNA and obtain feedback on community health priorities, priority populations, and implementation strategy ideas. Participants included older adult residents from Mission Hill, which was identified by the NEBH CHNA Steering Committee as a critical population for the assessment to engage.	March 28, 2019	Action for Boston Community Development, Inc. in Mission Hill Neighborhood of Boston	22
NEBH PFAC	This focus group was held with the New England Baptist Hospital Patient Family Advisory Committee, which is dominated by patient, family members, and/or staff members who are long-term patients at NEBH and residents from Mission Hill.	June 18, 2019	New England Baptist Hospital	13

Community Meeting. Qualitative information was gathered through two community meetings. One in Mission Hill/Roxbury that was jointly hosted by BIDMC and New England Baptist Hospital (NEBH), along with Brigham and Women's Hospital, Boston Children's Hospital and Dana-Farber Cancer Institute. Another community meeting was held in Needham. This meeting was hosted by Beth Israel Deaconess – Needham as part of the Hospital's CHNA activities and this information was incorporated into BIDMC's CHNA. It is important to note that the community meeting in Mission Hill / Roxbury is the result of long-standing partnerships between BIDMC and Brigham and Women's Hospital, Boston Children's Hospital and Dana-Farber Cancer Institute, and New England Baptist Hospital, spanning numerous CHNA assessment rounds. In 2016, this group of hospitals also participated in community engagement activities in recognition of the fact that these hospitals all include Mission Hill and Roxbury in their CBSAs.

Name of Meeting	Population/Sector Represented	Date	Location	Number of attendees
MISSION HILL / ROXBURY				
Tobin/Mission Hill Community Meeting	One in Mission Hill/Roxbury that was jointly hosted by BIDMC and New England Baptist Hospital (NEBH), along with Brigham and Women's Hospital, Boston Children's Hospital and Dana-Farber Cancer Institute. 48 people participated in this meeting, held at the Tobin/Mission Hill Community Center.	March 6, 2019	Tobin/Mission Hill Community Center	48
NEEDHAM COMMUNITY MEETING				
Community Meeting at YMCA	A community meeting was held at the Charles River YMCA in Needham. This meeting was hosted by Beth Israel Deaconess Hospital – Needham and was attended by approximately 45 people, including health and social service providers, other community stakeholders, and residents from Needham.	March 27, 2019	Charles River YMCA, Needham	45

Needham Community Meeting – Marketing Details

JSI facilitated a community meeting with residents of BID-Needham's service area, service providers, and other stakeholders at the Charles River YMCA. This location was chosen as it represented a safe, neutral, and accessible location for community residents to share their thoughts. The forum was advertised via the following distribution channels:

- Local papers in Needham, Dedham, Dover, and Westwood
- Online through the BID-Needham social media channels
- Online through the Needham Department of Public Health

- Postings at local housing authorities, food pantries, and community/social service organizations (translated into Russian and Chinese)

JSI facilitated this session by presenting a high-level overview of quantitative data findings from the BID-Needham Community Health Needs Assessment. Translation/interpretation in Russian and Chinese were offered but were not needed. Transportation to/from the Needham Housing Authority to the session was offered, as was free childcare. A question and answer session was then facilitated.

Community Forum Discussion Topics

- What are the leading social determinants of health (e.g. transportation, housing, food insecurity, poverty/employment) that people struggle with in your community?
- What are the leading clinical health issues that people struggle with in your community? (e.g. mental health, substance use, chronic/complex conditions)
- What populations are particularly vulnerable or at-risk for poor health?
- Where are there opportunities for BID-Needham to improve community health?
- What services/programs provided by the Town of Needham are working well, and where are there opportunities to improve?

Community Health Survey. Qualitative information was gathered through community health surveys, conducted by New England Baptist Hospital and Beth Israel Deaconess – Needham as part of their CHNA activities, which collected information from more than 93 residents of Mission Hill and more than 300 residents in BID-Needham's CBSA (i.e., Dedham, Dover, Needham, and Westwood). The surveys captured information on what respondents thought were the leading health issues, social determinants of health, barriers to care, and service gaps.

Community Health Survey Questions
(Sample from Beth Israel Deaconess Hospital - Needham)

Beth Israel Deaconess Hospital - Needham is conducting a Community Health Needs Assessment to understand the most pressing health-related issues for residents in the communities they serve. It is important that the hospital gather input from people living, working, and learning in the community. The information gathered will help the hospital to improve its services.

Please take about 10 minutes to complete this survey. Your responses will be anonymous.

This survey has been shared widely. **Please complete this survey only once**.

Please email Madison MacLean (madison_maclean@jsi.com) with questions.

Question 1: Do you live, work, and/or learn in Dedham, Dover, Needham, or Westwood?

__ YES, I live, work, and/or learn in DEDHAM   __ YES, I live, work, and/or learn in DOVER

__ YES, I live, work, and/or learn in NEEDHAM   __ YES, I live, work, and/or learn in WESTWOOD

__ NO, I do not live, work, and/or learn in any of those towns.

Question 2: What is your age?

__ Under 18   __ 18 to 24   __ 23 to 34   __ 35 to 44

__ 45 to 54	__ 55 to 64	__ 65 to 74	__ 75 or older

Question 3: Are you Hispanic, Latino/a, or of Spanish origin? __Yes __No

Question 4: What race best describes you? Select all that apply.

__ White	__ Black or African American	__ Asian
__ Native Hawaiian or Pacific Islander	__ American Indian or Alaska Native	__ Other

Please answer Questions 5-7 with your community and/or the population(s) you serve in mind.

Question 5A: Choose the top three (3) challenges that prevent people in your community from achieving and maintaining good health. Rank your top three (3) answers, with 1 being the greatest challenge.

__ Lack of affordable/safe housing	__ Lack of access to transportation
__ Long commute to and from work or school	__ Crime or violence
__ Limited or no education	__ Lack of social support / social isolation
__ Physical inactivity or sedentary lifestyles	__ No or limited health insurance
__ High cost of health care	__ Food insecurity / unable to acquire healthy foods

__ Co-payments for medication

__ Social attitudes (e.g. discrimination, racism, distrust of providers)

__ Socioeconomic conditions (e.g. poverty, low wages, limited job opportunities)

__ Lack of health care providers that meet cultural, language, and/or social needs of patients

__ Limited access to health care (lack of providers or availability of appointments)

__ Inability to walk/ride a bike due to bad road conditions and/or no sidewalks

Question 5B: Are there other things that prevent people in your community from achieving and maintain good health? Please specify.

Question 6A: Choose the three (3) health conditions that have the greatest impact on your community. Rank your top three answers, with 1 being the condition that has the most impact.

__ Cancer

__ Cardiovascular conditions (e.g. hypertension/high blood pressure, heart disease, stroke)

__ Respiratory diseases (e.g. asthma, chronic obstructive pulmonary disease [COPD], emphysema)

__ Mental health (e.g. depression, anxiety, stress, trauma)

__ Substance use (e.g. alcohol, opioids, tobacco, e-cigarettes/vaping, marijuana)

__ Physical inactivity, nutrition, and/or obesity

__ Infectious disease (e.g. influenza, HIV/AIDS, sexually transmitted infections, hepatitis C)

__ Maternal and child health issues (e.g. prenatal care, teen pregnancy, infant mortality)

__ Diabetes

__ Oral health

__ Neurological disorders (e.g. Alzheimer's, Parkinson's, dementia)

__ Mobility impairments (e.g. falls, arthritis, fibromyalgia)

Question 6B: Are there other health conditions that impact your community? Please specify.

Question 7A: Choose the top three (3) populations that you think have the most significant health-related needs. Rank your top three (3), with 1 being the group with the most significant needs.

__ Young children (0-5 years of age)	__ School age children (6-11 years of age)
__ Adolescents (12-17 years of age)	__ Young Adults (18-24 years of age)
__ Older Adults (older than 65 years of age)	__ Immigrants/Refugees
__ Racially/Ethnically Diverse	__ Non-English Speakers
__ Homeless/Unstably housed	__ Low-income populations

__ Those with disabilities (physical, cognitive, development, emotional)

__ Lesbian, Gay, Bisexual, Transgender, Queer/Questioning (LGBTQ)

Question 7B: Are there other populations that have significant health-related needs?

Question 8: Which (if any) programs or services offered by Beth Israel Deaconess Milton have you attended? Check all that apply.

__ Diabetes Fair	__ Cancer screenings
__ Cholesterol/blood pressure screenings	__ Community education lectures
__ CPR courses	__ Support groups

Question 9: Which (if any) of these programs do you think works well to address the needs of your community? Check all that apply.

__ Diabetes Fair	__ Cancer screenings
__ Cholesterol/blood pressure screenings	__ Community education lectures
__ CPR courses	__ Support groups
__ None	

Question 10: Which health services in your community are hard to access? Check all that apply.

__ Primary care (e.g. family, general practice, internal medicine physicians)

__ Emergency care

__ Urgent care (e.g. immediate care centers, Minute Clinics)

__ Oral health care (e.g. dentists, oral surgeons)

__ Specialty care (e.g. cardiology, dermatology, oncology, endocrinology)

__ OB/GYN (e.g. female reproductive system, maternity care)

__ Pharmacies

__ Inpatient or residential drug and alcohol treatment (e.g. rehabilitation and detoxification)

__ Outpatient drug and alcohol treatment (e.g. medication-assisted treatment, outpatient clinics)

__ Inpatient mental health treatment (e.g. residential treatment, psychiatric hospitals, hospital inpatient units)

__ Outpatient mental health treatment (e.g. community mental health centers, mental health counseling)

__ Long term care (e.g. assisted living, skilled nursing facilities/nursing homes, convalescent homes)

Question 11: Are there other health services in your community that are hard to access? Please specify.

Question 12: What programs or services should Beth Israel Deaconess Milton offer or support to improve community health? Please specify.

Question 13: How did you hear about this survey?

__ Beth Israel Deaconess Milton

__ Blue Hills Community Health Alliance (CHNA 20)

__ Council on Aging or Senior Center

__Other (Please specify):

Question 14: Please provide any additional thoughts on how Beth Israel Deaconess Milton could improve health in your community.

Thank you for your input. Please contact Madison MacLean (Madison_Maclean@jsi.com) with questions.

BIDMC New Inpatient Building Community-based Health Initiative

In addition to the Boston CHNA-CHIP Collaborative, the iCHNA, and numerous hospital CHNA efforts, BIDMC conducted community engagement, assessment, and prioritization activities through its Determination of Need New Inpatient Building Community-based Health Initiative (CHI). Per Commonwealth DoN requirements, BIDMC is required to implement a robust community engagement

effort and facilitate a prioritization process with the BIDMC's Community Advisory Committee (CAC), which oversee the CHI, to identify the leading community health priorities as well as the communities and priority population segments that will be supported by BIDMC's CHI funds.

BIDMC's CAC is comprised of community residents and stakeholders, who inform and advise the NIB-CHI process, including community engagement efforts to collect data on neighborhood and community health priorities.

The findings from these activities were incorporated into BIDMC's CBSA CHNA.

Community Engagement Efforts

To engage the community and provide vital information to help the CAC to identify and prioritize community health issues to be funded through the NIB-CHI investment, a series of five (5) community meetings were held in the Boston neighborhoods that are part of BIDMC's CBSA, with approximately 185 total attendees (Table 2). Meetings were held between June 2 and June 17, 2019.

NIB-CHI Community Engagement Efforts

Neighborhood	Date/Time	Location	Languages available for Interpretation/Translation	# of Attendees
Allston/Brighton	June 11, 2019 6 – 8 PM	Charles River Community Health center	Cantonese, Portuguese, Russian, Spanish, Vietnamese	32
Chinatown	June 2, 2019 10 AM – 12 PM	South Cove Community Health Center	Cantonese, Mandarin	25
Bowdoin-Geneva (Dorchester)	June 10, 2019 6 – 8 PM	St. Peter's Teen Center	Cape Verdean Creole, Haitian Creole, Spanish	40
Fenway/Kenmore	June 12, 2019 6 – 8 PM	Morville House	Cantonese, Russian, Spanish	55
Roxbury/Mission Hill	June 17, 2019 6 – 8 PM	Bruce Bolling Building	Haitian Creole, Spanish	33

The primary goal of these meetings was to ensure that residents of the communities in Boston that are part of BIDMC's CBSA, as well as staff from community-based organizations that operate in those areas, were given the opportunity to:

- Learn about the CHI
- Share their ideas on how NIB CHI funds should be spent
- Vote on community health priorities and strategic ideas for funding.

Special emphasis was made to encourage non-English speaking residents and other hard-to-reach segments of the population who are often left out of community engagement activities, to participate. Below are characteristics of individuals who participated across the five meetings.

- **Race/Ethnicity:** Seventy-seven percent (77%) of participants reported as a non-White race. The largest racial/ethnic group reported as Asian, non-Hispanic (43%), followed by White, non-Hispanic (23%), Black/African American, non-Hispanic (16%), Other Race, non-Hispanic (8%),

Hispanic/Latino of any race (6%), multi-race, non-Hispanic (3%), and American Indian/Alaskan Native, non-Hispanic (1%)

- **Language:** Fifty-three percent (53%) of participants chose to take the survey in English, 22% in Mandarin, 8% in Haitian Creole, 7% in Vietnamese, 4% in Russian, 4% in Spanish, and 1% in Cantonese
- **Age:** Thirty-nine percent (39%) of participants reported that they were 65 years old or older, 32% reported that they were between the ages of 35 and 64, 19% reported that they were between the ages of 18 and 34, and 10% were under 18
- **Gender Identity:** Sixty-seven percent (67%) reported as female, 31% as male, and 2% as either genderqueer or an additional gender category
- **Resident/Non-resident:** Sixty-one percent (61%) reported that they were residents of the CBSA and 47% reported that they were a representative of a community organization

At the outset of the meetings, staff from BIDMC and JSI provided background information on the NIB CHI, discussed the six (6) community health priorities identified by the NIB CHI CAC (i.e., housing, education, jobs/financial security, mental health, substance use, and violence), and gave participants the opportunity to add additional priorities that were important to them and their communities. Participants were then split up into small groups and were given the opportunity to discuss the Community Advisory Committee priority areas. In the small group discussions, participants were asked to clarify leading concerns for each priority area and to provide input on how funds should be spent to address the issue. JSI staff then provided brief summaries of the key themes discussed in their respective group and meeting participants were asked to individually vote across the priority areas and strategic ideas to identify ones that they thought were most important.

NIB-CHI Community Health Priority Areas
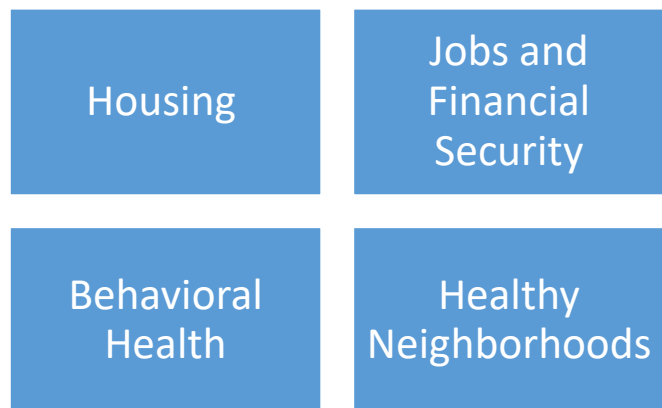
Housing	Jobs and Financial Security
Behavioral Health	Healthy Neighborhoods

From these community meetings, a set of community health priority areas emerged: housing, education, access to care, mental health, jobs and financial security, violence, substance use disorder, wellness and chronic disease, elder health, and environmental health. Considering the outcomes of these community meetings, along with experience and understanding of the relevant communities, the CAC arrived at four community health priority areas: housing, jobs and financial security, behavioral health, and healthy neighborhoods.

BIDMC's Independent Community Health Needs Assessment Activities

As mentioned above, in October of 2018, BIDMC hired John Snow, Inc. (JSI) to integrate the information gathered across the concurrent assessment and planning activities discussed above and augment the engagement and assessment activities where necessary. BIDMC's additional efforts ensured that

BIDMC's CHNA engaged the necessary community constituents, incorporated information from all of the communities in its CBSA, and fulfilled Commonwealth and Federal Community Benefits requirements.

Following is a more detailed description of the additional engagement efforts conducted independently by BIDMC to augment the activities of its partners.

Additional Community Engagement Activities.

Engagement through the BIDMC Community Benefits Committee (CBC) and the Community Care Alliance (CCA) Board of Managers and Medical Directors.

BIDMC's Community Benefits Committee (CBC) also supported BIDMC's engagement efforts. The CBC is made up of community members, service providers, and other key stakeholders that either live in or work in Chelsea and/or the neighborhoods in Boston that are part of the CBSA. The CBC oversaw every aspect of the needs assessment across all facets but they also provided expertise and guidance related to service area characteristics and community need. The CBC met quarterly during the course of the assessment, were updated extensively at each meeting, and provided important input. The assessment, including the community engagement activities, were also greatly informed and supported by staff and clinicians at the community health centers who are part of BIDMC's Community Care Alliance (CCA). These health centers are a major part of Boston's health care safety net and do excellent work on behalf of some of Boston's most underserved populations. Senior administrative and clinical staff from the health centers sit on two boards, the CCA Board of Managers and the CCA Board of Medical Directors. Like the CBC, these Boards met quarterly over the course of the CHNA activities and provided important information related to community need and helped BIDMC to engage residents from the communities they serve.

Key Informant Interviews

Three additional internal interviews were conducted along with 12 interviews with key stakeholders from communities in BIDMC's CBSA that are outside of Boston and Chelsea, namely Brookline, Chestnut Hill, Lexington, and Needham. Since Chestnut Hill is not a registered municipality, information in this case was gathered from the communities that comprise it (Boston, Brookline, and Newton).

BIDMC INTERNAL INTERVIEWS			
Name	**Title**	**Affiliation**	**Date**
Peter Healy	President	BIDMC	11/15/2019
Barbara Sarnoff Lee	Senior Director of Social Work and Patient/Family Engagement	BIDMC	11/21/2019
Dr. Anthony Wess	Chief Medical Officer	BIDMC	11/12/2019
CHESTNUT HILL INTERVIEWS (Brookline and Newton)			
Name	**Title**	**Affiliation**	**Date/Time**
Lynne Karsten	Director of Community Health	Brookline Department of Public Health	1/16/2019

Dr. Swannie Jett	Director of Health and Human Services	Brookline Department of Public Health	11/20/2019
Deborah Youngblood	Commissioner	Newton Department of Health and Human Services	12/21/2018

LEXINGTON INTERVIEWS			
Name	**Title**	**Affiliation**	**Date/Time**
Kathy Fox	Environmental Health Agent	Lexington Department of Health	February 2019
Beatrice Ford	Director of Operations	BID HealthCare Lexington/Chestnut Hill	11/29/2018
Alicia Grunes	Human Services Nurse	Lexington Department of Health	2/13/2019
Melissa Interess	Director of Health and Human Services	Lexington Department of Health	February 2019
David Neylon	Community Health Nurse	Lexington Department of Health	2/4/2019

NEEDHAM INTERVIEWS			
Name	**Title**	**Affiliation**	**Date**
Timothy Muir McDonald	Director	Needham Department of Public Health	11/12/18
Carol Read	Director	Regional Substance Abuse Prevention Coalition	11/20/18
Sandra Robinson	Executive Director	Needham Community Council	11/13/18
Latanya Steel	Director	Needham Council on Aging	3/21/19

Key Informant Interview Guide

The following is the interview verbatim, including the introduction to the interview questions.

Introduction: As you may know, BIDMC is conducting a Community Health Needs Assessment (CHNA) to understand the health needs of those living in its service area. This assessment, and a subsequent Implementation Strategy, is part of BIDMC's efforts to improve community health status and develop a sound population health plan for its service area. The assessment is also required of all non-profit hospitals to meet state Attorney General and Federal IRS requirements. The Implementation Strategy will outline how the hospital will work to address health needs and factors leading to poor health, as well as ways in which it will build on the community's strengths. It is therefore extremely important that the Hospital hear from a broad range of people living, working, and learning in the community. JSI has been contracted by the Hospital to conduct the assessment, which will include interviews, a Community Health Survey, and focus groups. This interview is part of the data collection and should take between 30-60 minutes. To ensure our data reflect your community or the community you serve, it is important that you speak openly and honestly. We will be taking notes during the conversation, but will not link your name or personal information to your quotes without your permission. Do you have any questions before I get started?

- Question 1: Could you tell me more about yourself? How long have you worked at [name of organization]? Are you also a resident of a community within the service area? *Probe for information on programs/services offered through their organization, populations they work with, etc.*
- Question 2: The assessment is looking at health defined broadly – beyond clinical health issues, we are also looking at the root causes most commonly associated with ill-health (e.g. housing, transportation, employment/workforce, etc.) What do you see as the major contributors to poor health for those in the service area? *Try to identify top 2-3*
- Question 3: What clinical health issues (e.g. substance use, mental health, cancer, overweight/obesity, etc.) do you think are having the biggest impact on those in the service area? *Try to identify top 2-3*
- Question 4: What segments of the population have the most significant health needs or are most vulnerable? (e.g. young children, low-income, non-English speakers, older adults, etc.) *Do you see this changing in the future? Improving? Getting worse?*
- Question 5: How effectively do you think [Hospital] is currently meeting the needs of the community? Are there specific programs offered by [Hospital] that stand out to you as working well to address the needs of the community?
- Question 6: Where do you see opportunities for [Hospital] to implement programs/services to address community health needs?
- Question 7: Are there programs or services offered by other community organizations that you think are working well to address the needs of the community? *Mention that we will be compiling a list of community organizations/resources for the Resource Inventory*
- Question 8: As we explained at the beginning of this interview, we will be making an effort to gather input from community residents as part of this assessment. Can you recommend any strategies to engage hard-to-reach populations? *Any coalitions or advocacy groups that work with hard-to-reach populations? Any existing meeting groups you think it would be appropriate to reach out to?*
- Question 9: Finally, we are working to gather quantitative data to characterize health status – this includes demographic and socioeconomic data, and disease-specific incidence, hospitalization, emergency department, and mortality data wherever it is available. Do you know of, or use, any local data sources (e.g. reports, other needs assessments, etc.)?

2. Community Engagement Activities Across MDPH's Engagement Continuum

As discussed above, BIDMC, in collaboration with its partners across the CBSA (e.g., the Boston CHNA-CHIP Collaborative, the iCHNA, other BILH and hospital partners), used MDPH's Community Engagement Standards for Community Health Planning as a guide. As a result, BIDMC employed a variety of strategies across all levels of engagement to ensure that community members were informed, consulted, involved, and empowered throughout the assessment process.

The table below includes 1) a description of the goal for each level of community engagement, 2) examples of activities and strategies within each level, and 3) a listing of the activities undertaken by BIDMC and its assessment partners for each level of engagement.

Community Engagement Activities across the Continuum

Inform: *Provide community with balanced and objective information to assist them in understanding the problem, alternatives, opportunities, and/or solutions*
Examples: Fact sheets, web sites, open houses
• **BIDMC CHI Engagement:** A web site was developed to inform the community on the CHI purpose, activities, and findings. Community Advisory Committee meeting agendas, materials, and minutes were posted for the public to access. • **Boston CHNA-CHIP Collaborative:** A web site was developed to keep the public informed of the assessment process and opportunities for involvement. • **iCHNA:** A web site was developed to keep the public informed of the assessment process and opportunities for involvement.
Consult: *To obtain community feedback on analysis, alternatives, and/or solutions*
Examples: Public comments, focus groups, surveys, community meetings
• **BIDMC CBSA Assessment:** Key informant interviews were conducted with BIDMC leadership and community stakeholders. • **BIDMC CHI Engagement:** Community meetings were held in each of the CBSA Boston neighborhoods. • **Boston CHNA-CHIP Collaborative:** Key informant interviews, focus groups, a survey, and community meetings were conducted to consult community residents and stakeholders on community health issues • **iCHNA:** Key informant interviews, focus groups, and a survey were conducted to consult community residents and stakeholders on community health issues
Involve: *To work directly with community throughout the process to ensure their concerns and aspirations are consistently understood and considered*
Examples: Workshops, deliberative polling, advisory bodies
• **BIDMC CHI Engagement:** At community meetings, participants were engaged to prioritize community health issues. The results of these prioritization processes were used to arrive at a set of final community health priorities. • **Boston CHNA-CHIP Collaborative:** An integrated analysis of findings from quantitative and qualitative data was done to arrive at a set of preliminary community health priorities. Through a series of meetings with community residents and stakeholders, a final set of priorities were developed. Community residents and stakeholders were also involved in determining goals, objectives, and strategies within each priority area. Additionally, the Boston Public Health Commission organized four Community Health Prioritization Meetings in Roxbury and Mattapan to gather information on the leading health-related issues. • **iCHNA:** At the focus groups, participants were engaged and asked questions regarding their perceptions about the health of the community, community assets, and pressing health issues.

- **BILH and other hospital partners:** Focus groups and community meetings were conducted by hospital within the BILH system (i.e., New England Baptist Hospital (NEBH), Beth Israel Deaconess Hospital – Needham, and Lahey Hospital Medical Center) and other hospital partners in Boston as part of hospital CHNA activities. Community and stakeholder participants were involved in discussions and engaged to prioritize community health issues. The results of these information gathering and prioritization processes were used to arrive at a set of final community health priorities.

Collaborate: *To partner with the community in each aspect of the decision including the development of alternatives & identification of the preferred solution*
Examples: Advisory groups, consensus building, participatory decision making

- **Community Care Alliance (CCA):** CCA works in close partnership with a network of private, independent, community health centers in Boston, called the Community Care Alliance. BIDMC created this network and supports their activities through technical assistance and direct financial support. BIDMC's Community Benefits Staff oversees the activities of the CCA and, relative to the assessment participated in monthly progress reports to get their input on the assessment and its findings.
- **BIDMC CBSA Assessment:** The assessment was overseen by a Community Benefits Committee, comprised of community residents and stakeholders. This body collaborated to make decisions regarding the assessment approach and priority health issues
- **BIDMC CHI Engagement:** Community residents and stakeholders were included on the CHI Community Advisory Committee. This body was tasked with making decisions regarding engagement approach and strategies, prioritization of issues, and allocation of funds.
- **Boston CHNA-CHIP Collaborative:** The CHNA used a participatory, collaborative approach that engaged the community through different avenues. Over 100 Collaborative members representing health care, public health, education, community development, social service, and community-based organizations provided input throughout the CHNA process and played an integral role in data collection efforts. Data collection efforts were focused on engaging hard-to-reach populations who are not typically engaged in these processes or represented in the secondary data.
- **iCHNA:** Focus group participants and key informants were identified by the North Suffolk Integrated Community Health Needs Assessment Steering Committee using a segment inclusiveness worksheet to ensure that a variety of diverse individuals across multiple sectors and populations were included. Kelina Orlando, Executive Director of BIDMC's Ambulatory Operations was a member of the iCHNA Steering Committee.
- **BILH and other hospital partners:** Focus groups and community meetings were conducted as part of hospital CHNA activities, participants were involved in discussions and engaged to prioritize community health issues. The results of these information gathering and prioritization processes were used to arrive at a set of final community health priorities. Specifically, BIDMC and NEBH, along with Boston Children's Hospital, Brigham and Women's Hospital, and Dana-Farber Cancer Institute, jointly hosted a forum in Mission Hill/Roxbury to involve and collaborate with the community on the identification of priorities.

Empower: *To place the decision making in the hands of the community*
Examples: Advisory bodies, volunteer stipends, ballots, delegated decisions

- **BIDMC CHI Engagement:** The Community Advisory Committee, made up of community residents and stakeholders, were tasked with making decisions regarding prioritization of issues and allocation of resources. During this process, a series of community engagement meetings were organized with community –based organizations and in a number of cases staff members from these organizations were trained and provided

stipends to guide discussions in facilitated sessions or "focus groups". Their participation enhanced discussions and built their capacity.

- **Boston CHNA-CHIP Collaborative:** Community members, residents and service providers, were empowered throughout the Boston CHNA-CHIP Collaborative's activities to participate and in many ways help facilitate and guide discussions. Focus group participants were also provided with stipends and childcare during data collection activities. Additionally, the organizing organizations of each focus group were compensated. Boston CHNA-CHIP Collaborative also paid the Healthy Community Champions to distribute the community survey.

Community Driven/Led: *To support the actions of community initiated, driven and/or led processes*

Examples: Community supported processes, advisory bodies, stipend roles for communities, funding for communities

- **Boston CHNA-CHIP Collaborative:** Focus group participants were provided a stipend and childcare during data collection. Additionally, organizations who hosted the event were compensated. Healthy Community Champions were also provided a stipend to help distribute the community survey. The Boston CHNA-CHIP Collaborative also conducted key informant interview and meeting facilitation trainings for representatives from organizations that are part of the Boston CHNA-CHIP Collaborative.
- **iCHNA:** Focus group participants were provided a $15 gift card - adults received Market Basket gift cards and youth received Amazon or Target gift cards.
- **BIDMC CHI Community Engagement:** CHI efforts included a series of community meetings hosted by community-based organizations in BIDMC's CBSA. Host organizations were if they were interested and able to help facilitate breakout sessions at the meetings. Those who agreed to participate were provided a Facilitators Guide and required to participate in a 1-hour training on facilitation and non-directive interview techniques. Participants were provided a stipend for their participation and assistance in these efforts.

APPENDIX D:

Beth Israel Deaconess Medical Center
Community Health Needs Assessment
Resource Inventory
2019

Advocacy

Health Care for All
Health Law Advocates
Jane Doe, Inc.
Network for Excellence in Health Innovation
Suffolk County District Attorney's Office, Victim Witness Advocates
Victim Rights Law Center

Behavioral Health

Brookline Community Mental Health Center
Massachusetts Association for Addiction Recovery

Business and Community Development

Bowdoin Geneva Main Streets Program
Codman Square Neighborhood Development Corporation
Dorchester Bay Economic Development Corporation
DotWell
Dudley Street Neighborhood Initiativ
Fenway Community Development Corporation
Greater Four Corners Action Coalition
Healthy Waltham
Jamaica Plain Neighborhood Development Corporation
Massachusetts League of Community Health Centers
Massachusetts Taxpayers Foundation
Mayor's Office of Neighborhood Services
Mission Hill Main Streets

Caregiver Support

Schwartz Center for Compassionate Healthcare

Community Cohesion (Violence, Crime, Witness Services, Incarceration/Re-Entry)

Boston Area Rape Crisis Center

Child Witness to Violence Project

Louis D. Brown Peace Institute

Massachusetts Office for Victim Assistance

Roca

Youth Options Unlimite

Violence Intervention and Prevention Initiative

Cultural Organizations

La Alianza Hispana

Latino American Health

Massachusetts Alliance for Portuguese Speakers

Sociedad Latina

Urban League of Eastern Massachusetts

Vietnamese American Civic Association

Disabilities

Boston Center for Independent Living

Massachusetts Commission for the Deaf and Hard of Hearing

Domestic Violence Services

Boston Regional Domestic Violence Providers

Casa Myrna

COBTH Domestic Violence Advisory Council

Education (Elementary, Secondary, Higher Education)

Boston Private Industry Council

Boston University Institute for Nonprofit Management

Bottom Line

Bunker Hill Community College

College Bound Dorchester

John D. O'Bryant School of Math and Science

Mary Lyon Schools

Roxbury Community College

YMCA Black Achiever's Program

Early Childhood, Youth, and Adolescent Services

Boston 10 Point Coalition (Black and Latino youth)

Boston Basics

Boston GLOW (Girls Leadership Organized Women)

Boston Public Schools

Children's Services of Boston

COMPASS (Also in Multi-Sector Collaboratives and Community Health Partnerships)

Dorchester Cares

Dorchester Youth Collaborative

Dream Big (also in Recreation and Community Centers)

Geneva Avenue Head Start

Gertrude E. Townsend Head Start

Healthy Kids Healthy Futures

Hyde Square Task Force

More than Words

St. Peter's Teen Center

Youth Connect

Youth Villages

Employment and Career Services

Artists for Humanity

Associated Industries of Massachusetts

Biomedical Sciences Career Program

Boston Career Link

Boston Healthcare Careers Consortium

Brookline High School Work Connections for Youth

Career Collaborative

Found in Translation

International Institute of New England

Massachusetts Workforce Investment Board

Mayor's Office of Workforce Development
The Partnership, Inc.
United for a Fair Economy
Urban Farming Institute of Boston
YearUP
YMCA Training, Inc.

Environmental Health/Sustainability

Alternatives for Community and Environment
Boston Green Ribbon Commission
Boston Natural Areas Network/Youth Conservation Corps
Dorchester Lead Safe Yard Project
Environmental Protection Agency EPA New England
Friends of Geneva Cliffs
Healthcare Without Harm
Massachusetts Department of Environmental Protection
Practice Green Health
The Trustees of Reservations (City Harvest and Powisset Farm)
US Environmental Protection Agency
WalkBoston

Faith-based Organizations

Black Ministerial Alliance
Combined Jewish Philanthropies
Greater Boston Interfaith Organization
Hebrew Senior Life
Jewish Community Centers of Greater Boston
Jewish Community Housing for the Elderly
Jewish Community Relations Council
Jewish Domestic Violence Coalition
Jewish Family Service of Metrowest
Jewish Vocational Services
Journey to Safety
Leventhal Sidman Jewish Community Center

Mayhim Hayim
Rose's Bounty/Strafford St United Church
Roxbury Presbyterian Church
Unitarian Universalist Urban Ministry

Family Support

Aid to Incarerated Mothers, Inc.
Dorchester North WIC Office
Family Nurturing Center
Journey to Safety a Program of the JFCS (also in Faith Based)
Massachusetts Department of Children and Families
St. Mary's Center for Women and Children
Victory Programs

Food Security

Community Servings
Daily Table
Dorchester Community Food Co-op
Fresh Truck
Greater Boston Food Bank
Massachusetts Department of Transitional Assistance
Mayor's Office of Food Initiatives
WIC Offices

Health Care Services

AIDS Action Committee
American Diabetes Association
American Heart Association
Boston ABCD Family Planning Division
Boston Medical Center
Brigham and Women's Hospital
Cambridge Health Alliance
Cape Verdean Adult Day Health Program
Charles River Community Health
Codman Square Community Health Center

Dimock Community Health Center
Dana Farber/Harvard Cancer Center
Dana-Farber Cancer Institute
Dorchester House Community Health Center
Fenway Health
Harvard Street Community Health Center
Joslin Diabetes Center
Massachusetts General Hospital
Mattapan Community Health Center
Mount Auburn Hospital
New England Baptist Hospital
Outer Cape Health Services
Partners HealthCare
Project Health CV Inc.
Sidney Borum Jr. Health Center
South Cove Community Health Center
Tufts Medical Center
Upham's Corner Health Center
Codman Square Community Health Center
Whittier Street Health Center

Healthy Aging/Older Adult Health

Boston Elder Services
Boston Senior Home Care
Boston Visiting Nurses Association
Brookline Senior Center
Evercare
Friendship Works
Kit Clark Senior Services
Massachusetts Senior Action Council
Multicultural Coalition on Aging
Elder Affairs, Commonwealth of Massachusetts
Elderly Affairs, City of Boston

Housing

Boston Tenants Coalition
City Life/Vida Urbana
ESAC Boston
Hospitality Homes
Inquilinos Boricuas Accion (IBA)
United Way of Massachusetts (also in multi-service)

Immigrants/Refugees

International Institute of New England
Massachusetts Immigrant and Refugee Advocacy Coalition

Law Enforcement and Emergency Services

Boston Emergency Medical Services
Boston Fire Department
Boston Police Department
Boston Public Health Commission
Massachusetts State Police
Mayor's Office of Emergency Management
Suffolk County District Sheriff's Department

LGBTQ

GLAD
Keshet
The Fenway Institute
The Network, La Red
Boston GLASS (Gay & Lesbian Adolescent Social Services)

Multi-sector Collaboratives and Community Health Partnerships

ABCD Health Services
Albert Schweltzer Fellowship Program
Centering Healthcare Institute
Community Care Alliance
Ethos
Massachusetts Executive Office of Health and Human Services
Medical Academic and Scientific Community Organization, Inc. (MASCO)

Medical Intelligence Center

Boston Community Health Worker Initiative

Multi-Service Agencies

Dorchester Neighborhood Service Center

ABCD Parker Hill/Fenway Neighborhood Service Center

Bay Cove Human Services

United Way of Massachusetts

YWCA Boston

Dorchester House MultiService Center

Philanthropy

The Boston Foundation

Public Health

Boston Public Health Commission

Massachusetts Department of Public Health

Recreation and Community Centers

Aerobics and Fitness Association of America/National Academy of Sports Medicine

Boston Athletic Association

Boston Community Centers

Boston Childrens Hospital's Fitness in the City

Community Centers

Healthworks at Codman Square

Holland Community Center

YMCAs/YWCAs

Sexual Health

Sexual Assault Nurse Examiner Program

Transportation

Boston Cyclists Union

Bowdoin Bike School

Massachusetts Department of Transportation

Appendix E:

Beth Israel Deaconess Medical Center
Community Health Needs Assessment
Director of Community Benefits Contact Information

Please contact Nancy Kasen, BIDMC's Director of Community Benefits, if you have any questions regarding BIDMC's Community Health Needs Assessment Report or the assessment, engagement and planning process that were conducted to develop the report and the Implementation Strategy

Nancy Kasen
Director, Community Benefits

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Beth Israel Deaconess Medical Center
Implementation Strategy
2020 - 2022

Between September 2018 and April 2019, Beth Israel Deaconess Medical Center (BIDMC) conducted a comprehensive Community Health Needs Assessment (CHNA) that included an extensive review of existing quantitative data as well as the collection of qualitative information through interviews, surveys, focus groups and community meetings. These efforts were done by BIDMC independently, and BIDMC also supported and participated in numerous other CHNA efforts being conducted across Boston and its Community Benefits Service Area (CBSA). The extensive array of assessment and community engagement activities allowed BIDMC to augment its assessment efforts, better engage the community, and collaborate with key health system partners across the region. A resource inventory was also completed to identify existing health-related assets and service gaps. A Community Benefits Evaluation was also completed to assess the impact of BIDMC's community benefits activities since the last CHNA. During the CHNA process, BIDMC made substantial efforts to engage administrative and clinical staff throughout the Medical Center (including senior leadership) and community health stakeholders throughout the Medical Center's entire CBSA, including the Boston Public Health Commission and other local health departments in in its CBSA. A detailed review of the CHNA approach, data collection methods, and community engagement activities are included in Appendix A as well as the body of BIDMC's 2019 CHNA Report.

Once BIDMC's CHNA activities were completed, BIDMC's Community Benefits staff convened BIDMC's Community Benefits Committee (CBC) and the BIDMC Community Benefits Senior Leadership Team (CBSLT) and conducted a series of strategic planning meetings. These meetings allowed Medical Center staff and a representative group of external community health stakeholders to review the quantitative and qualitative findings from the CHNA, prioritize the leading community health issues, identify segments of the population most at-risk (Priority Populations), review existing community benefits programming, and begin to develop BIDMC's 2020 – 2022 Implementation Strategy (IS). After these planning meetings, Community Benefits staff continued to work with the CBC and the CBSLT to develop a draft and a final version of BIDMC's 2020-2022 Implementation Strategy (IS). Below is a summary of BIDMC's IS.

CORE IMPLEMENTATION STRATEGY PLANNING PRINCIPLES AND STATE PRIORITIES

In developing the IS, care was taken to ensure that BIDMC's community health priorities were aligned with the Commonwealth of Massachusetts priorities set by the Commonwealth's Department of Public Health (MDPH) and the Massachusetts Attorney General's Office (MA AGO). The table below outlines the four Community Benefits focus issues identified by MDPH and the MA AGO. In addition to the four focus issues, MDPH identified six health

priorities to guide investments funded through Determination of Need processes. The MDPH and the MA AGO encourages hospitals to consider these priorities during the community benefits planning process.

Also included below is a brief discussion of a series of guiding principles that informed BIDMC's IS development process.

State Community Health Priorities

Community Benefits Priorities	Determination of Need Priority Areas
Chronic disease with a Focus on Cancer, Heart Disease, and Diabetes	Built Environment
Housing Stability/Homelessness	Social Environment
Mental Illness and Mental Health	Housing
Substance Use Disorders	Violence
	Education
	Employment

The following are a range of programmatic ideas and principles that are critical to community health improvement and have been applied in the development of the IS provided below.

- **Social Determinants of Health:** With respect to community health improvement, especially for low income and disadvantaged populations, there is growing appreciation for the importance of addressing the underlying social determinants of health. These social determinants have been defined as "the conditions in which people are born, grow, live, work and age that may limit access, lead to poor health outcomes, and are at the heart of health inequities between and within communities."[1] The leading social determinants of health include issues such as poverty, housing, food access, violence, racism/bigotry, and transportation. It is important that hospital implementation strategies include collaborative, cross-sector initiatives that address these issues.

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[1] O. Solar and A. Irwin, World Health Organization, "A Conceptual Framework for Action on the Social Determinants of Health," Social Determinants of Health Discussion Paper 2 (Policy and Practice), 2010, available at http://www.who.int/social_ determinants/corner/SDHDP2.pdf.

- **Health Education and Prevention:** Primary prevention aims to prevent disease or injury before it ever occurs by reducing risks, preventing exposures to hazards, or altering unhealthy behaviors that can lead to disease or injury. Secondary and tertiary prevention aims to reduce the impact of chronic disease or health conditions through early detection as well as behavior change and chronic disease management geared to helping people to manage health conditions, lessen a condition's impact, or slow its progress. Targeted efforts across the continuum to raise awareness about a particular condition, educate people about risk factors and protective factors, change unhealthy behaviors, and manage illness are critical to improving health status.

- **Screening and Referral:** Early identification of those with chronic and complex conditions following by efforts to ensure that those in need of education, further assessment, counseling, and treatment are critical to preventing illness before it takes hold or managing illness so as to lessen or slow its impacts. A critical component of screening and referral efforts is taking steps to ensure that people are fully engaged in treatment, including linkages to a primary care provider.

- **Chronic Disease Management:** Learning how to manage an illness or condition, change unhealthy behaviors, and make informed decisions about your health can help you live a healthier life. Evidence-based chronic disease management or self-management education (SME) programs, implemented in community-based setting by clinical and non-clinical organizations, can help people to learn skills to manage their health conditions, improve eating and sleeping habits, reduce stress, maintain a healthy lifestyle.

- **Care Coordination and Service Integration:** Efforts to coordinate care and integrate services across the health care continuum are critical to community health improvement. These efforts involve bringing together providers and information systems to coordinate health services, patient needs, and information. This helps better achieve the goals of treatment and care.

- **Patient Navigation and Access to Health Insurance:** One of the most significant challenges that people face in caring for themselves or their families across all communities is finding the services they need and navigating the health care system. Having health insurance that can help people to pay for needed services is a critical first step. The availability of health coverage/insurance enrollment support, patient navigation, and resource inventories are important aspects of community health improvement.

- **Cross-Sector Collaboration and Partnership:** When it comes to complex social challenges, such as community health improvement, there is a clear consensus that success will only be achieved through collective action, partnership, and collaboration across organizations and health-related sectors. No one organization or even type of organization can have a sustained impact on these types of issues on their own. Hospital implementation strategies need to be collaborative and include partnerships with service providers across multiple sectors (e.g., health, public health, education, public safety, and community health).

COMMUNITY HEALTH PRIORITY POPULATIONS AND NEEDS

BIDMC is committed to improving the health status and well-being of all residents living throughout its CBSA. However, in recognition of the considerable health disparities that exist in some communities, BIDMC focuses the bulk of its Community Benefits resources on improving the health status of low income and underserved populations living in the city of Chelsea and the Boston neighborhoods of Allston/Brighton, Bowdoin/Geneva, Chinatown, Fenway/Kenmore, and Roxbury/Mission Hill. While there are certainly segments of the populations in Brookline, Chestnut Hill, Lexington, and Needham that are vulnerable and underserved, the greatest disparities exist in Chelsea and Boston. In order to maximize the impact of its Community Benefits resources, BIDMC's Community Benefits Committee (CBC) voted to prioritize and focus BIDMC's attention on the more urban, high-need communities in BIDMC's CBSA.

Based on the findings from the breadth of BIDMC's assessment activities, further efforts were made to prioritize certain population segments by race/ethnicity, socio-economic status, and other factors. More specifically, the Community Benefits Committee (CBC) and the Community Benefits Senior Leadership Team (CBSLT) voted to prioritize 1) Youth and adolescents, 2) Older adults, 3) Low resource individuals and families, 4) LGBTQ populations, and 5) Racially/ethnically diverse populations, and limited-English speakers.

Youth and Adolescents	Older Adults	Low Resource Individuals and Families
LGBTQ	Racially and Ethnically Diverse Populations/non-English speakers	
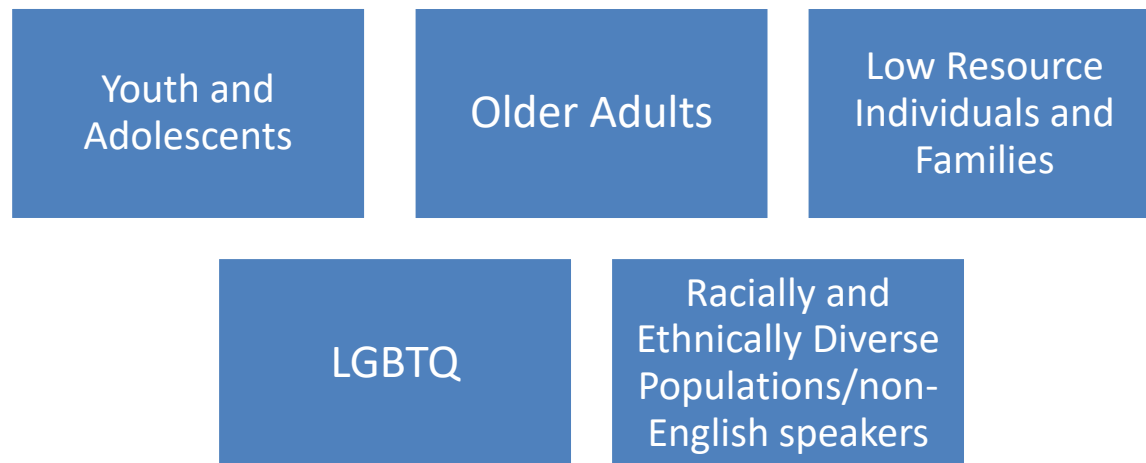
BIDMC's CHNA and strategic planning process provided many opportunities to vet the quantitative and qualitative data compiled during the assessment. Based on this process, the Medical Center's community benefits staff, the CBC, and the CBSLT identified four community health priority areas, which

together embody the leading health issues facing residents living in BIDMC's CBSA. These three strategic domains are: 1) Social Determinants of Health, 2) Chronic/Complex Conditions and Risk Factors, 3) Access to Care, and 4) Behavioral Health (Mental Health and Substance Use).

Social Determinants of Health	Chronic/Complex Conditions and Risk Factors	Access to Care	Behavioral Health (Mental Health and Substance Use)

Community Health Needs not Prioritized by BIDMC's CBC

It is important to note that there are community health needs that were identified by BIDMC's assessment that, due to the limited burden that these issues present and/or the feasibility of having an impact in the short- or long-term on these issues, were not prioritized for investment. Namely, transportation and education were identified as community needs but these issues were deemed by the CBC and the CBSLT to be outside of BIDMC's primary sphere of influence and have opted to allow others in its CBSA, the Greater Boston region, and the Commonwealth to focus on these issues. This is not to say that BIDMC will not support efforts in these areas. BIDMC remains open and willing to work with hospitals across Beth Israel Lahey Health's network, with COBTH, and other public and private partners to address these issues, particularly as part of a broad, strong collaborative.

The following is BIDMC's Implementation Strategy and provides details on BIDMC's goals, priority populations, objectives, strategic activities, and measures of performance by priority area. Also included, is a listing of the state priorities that align with the activities included in the IS as well as a listing of the core partners that BIDMC has been and will continue to work with to implement these activities. With respect to the core community partners listed, this is certainly not a complete list but rather many of its core partners. BIDMC collaborates and partners with dozens of public and private service providers, community-based organizations, and advocacy organizations spanning all sectors and CBSA communities. BIDMC is extremely appreciative of the efforts of all of its partners and looks forward to expanding this list as it implements its community benefits and CHI activities in the years to come.

Priority Area 1: Social Determinants of Health

Brief Description: Quantitative and qualitative data showed clear geographic and demographic disparities related to the leading social determinants of health (e.g., economic stability, housing, transportation, violence, food access, education, and community cohesion). These issues influence and define quality of life for many segments of the population in BIDMC's service area. A dominant theme from key informant interviews and community forums was the significant impact that the underlying social determinants, particularly housing, poverty, food access, violence, and transportation have on residents in the service area.

Resources / Financial Investment: BIDMC will commit direct, community health program investments, and in-kind resources of staff time and materials. BIDMC will also generate leveraged funds through grants from public and private sources on behalf of its own programs or services as well as on behalf of its community partners, such as the community health centers that are part of BIDMC's Community Care Alliance.

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
Promote Healthy Neighborhoods by Increasing Healthy Eating, Active Living, and Other Healthy Behaviors, as well as Promoting Other Health-related Programs and Policies	• Youth and adolescents • Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	• Increase the number of children in CCA clinics who are screened for BMI • Increase the number of children, youth, and adults who are physically active • Develop and update annually a strategic program plan for Bowdoin Street Wellness Center • Increase access to healthy and affordable foods in community • Improve nutritional quality of the food supply • Decrease the number of individuals and families who suffer from food insecurity • Others to be determined based on investments made through BIDMC CHI	• Promote universal screening for BMI along with appropriate counseling for physical activity and nutrition • Support and promote the development of walking and other physical activity groups (e.g., Zumba, tai chi, High Intensity Interval Training (HIIT), yoga, group fitness classes and tai chi) in schools, community-based and primary care-based settings (e.g., Bowdoin Street Wellness Center and Charles River Health) • Support and collaborate with BPHC and community-based organizations (e.g., Daily Table, GBFB, , etc.) to promote accessible/affordable healthy food including Rx food prescription, Farmers Markets, and • Pilot children fitness series (age 2-5) – play/ exercise with parents and their kids • Support Healthy Champions, a group of teenagers in healthy cooking and education workshops • Provide nutrition education and counseling (e.g., 5-2-1 Counseling recommended by AAP) • Support the Fitness in the City Program at BSHC • Others to be determined based on investments made through by BIDMC's CHI

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
Promote Violence Prevention (Safe Neighborhoods and Community Cohesion)	• Youth and adolescents • Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	• Increase access to mental health services at BSHC for affected victims • Increase participation in Advocate Education and Support Project • Provide counseling and other medical services to rape victims • Provide grieving support activities • Conduct neighborhood campaigns to engage community and create greater community cohesion Increase access to care and support to neighborhoods impacted by trauma through the Neighborhood Trauma Team	• Support and organize community meetings where residents share their concerns and discuss possible action steps (VIP/ Village in Progress – call to action) • Identify and empower community leaders through outreach activities to build community cohesion • Support programs in BSHC that integrate services provided by behavioral health specialists and monitor, assess, and treat those experiencing trauma from violence • Hold healing services when appropriate for community residents • Participate in community interventions that raise awareness about violence, engage the community, address factors associated with violence (e.g., "Broken Window" theory, Block Captains Program, etc.), and promote a sense of community • Support and promote the implementation of training programs, support groups for advocates and affected community members • Provide overnight stays for domestic violence and/or sexual assault victims without safe shelter • Conduct Public policy advocacy for safe shelters and long-term housing support • Empower youth to develop leadership skills, prevent violence and create change in their community through the Youth Leadership Program at Bowdoin Street Health Center • Respond to all incidents of homicide or violence within catchment area that meet criteria as established by the BPHC (VIP and NTT)
Promote Affordable Housing & Home Ownership	• Older adults • Low resource Individuals and Families • LGBTQ populations • Racial/Ethnic ally Diverse	• Increase access to affordable housing • Increase homeownership • Other to be determined based on investments made through BIDMC CHI	• Others to be determined based on investments made through BIDMC CHI

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
	and Limited English Speakers		
Support Workforce Development and Creation of Employment Opportunities	• Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	• Increase mentorship, training, and employment opportunities for youth, young adults, and adults residing from BIDMC CBSA as well as BIDMC employees • Promote workforce development and capacity building • Others to be determined based on investments made through BIDMC CHI	• Organize and support Pipeline Programs to enhance skills and career advancement • Provide opportunities through Employee Career Initiative (ECI) for college-level courses as well as counseling • Offer ESOL classes, GED classes, a basic computer skills course, citizenship classes, and a financial literacy class • Provide job and career introductory opportunities for community residents • Provide job and career introductory opportunities for middle and high school students • Implement and expand Train for Change • Implement and expand Learn and Earn Program through Bunker Hill Community College • Others to be determined based on investments made through BIDMC CHI
Promote Environ-mental Sustainability	• Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	Create a healthy future for our patients, their families, and ourselves by conserving natural resources, reducing our carbon footprint, and fostering culture of sustainability.	Promote recycling, composting, and other programs to divert waste from incineration. Increase BIDMC's spend on healthy beverages and local and sustainable food. Reduce consumption of water, energy, and greenhouse gases.

Priority Area 2: Chronic / Complex Conditions and their Risk Factors

Brief Description: Heart disease, stroke and cancer are by far the leading causes of death in the nation, the Commonwealth, and in BIDMC's service area. Roughly 7 in 10 deaths can be attributed to these three conditions. If you include respiratory disease (e.g., asthma, Congestive heart failure, and COPD) and diabetes, which are in the top 10 leading causes across nearly all geographies than one can account for all but a small fraction of causes of death. All of these conditions are generally considered to be chronic and complex and can strike early in one's life, quite often ending in premature death. In this category, heart disease, diabetes, and hypertension were thought to be of the highest priority, although cancer was also discussed frequently in the focus groups and forums. HIV/AIDS, other sexually transmitted diseases and Hepatitis C were also mentioned in the assessment's interviews and focus groups and should certainly be included in the chronic/complex condition domain. It is also important to note that the risk and protective factors for nearly all chronic/complex conditions are the same, including tobacco use, lack of physical activity, poor nutrition, obesity, and alcohol use.

Resources / Financial Investment: BIDMC will commit direct, community health program investments, and in-kind resources of staff time and materials. BIDMC will also generate leveraged funds through grants from public and private sources on behalf of its own programs or services as well as on behalf of its community partners, such as the community health centers that are part of BIDMC's Community Care Alliance.

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
Improve Chronic Disease Management	• Youth and adolescents • Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	• Increase the # of adults who receive education and counseling regarding risk factors, healthy behaviors to increase chronic disease health literacy • Increase the number of adults screened for diabetes, hypertension, HIV/AIDS, and asthma • Increase the number of adults with diabetes, hypertension, HIV/AIDS, and persistent asthma who receive evidence-based counseling/ coaching and treatment • Increase the number of adults with diabetes, hypertension, HIV/AIDS, and persistent asthma whose conditions are monitored and controlled	• Support programs in CCA clinics including Live and Learn Diabetes at CRCH that educate and screen patients for diabetes, hypertension, and persistent asthma. • Provide evidenced-based counseling/coaching and treatment, as well as appropriate referrals for specialty care services for those who screen positive for diabetes, hypertension, HIV/AIDS, and asthma • Provide screening, education/counseling, and treatment services HIV/AIDS and HIV/HCV co-infection • Support groups for men and women living with HIV/AIDS • Support primary care provider education at CRCH in the area of diabetes management

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
Reduce cancer disparities (access to screening and treatment)	• Youth and adolescents • Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	• Increase the number of low income and racial/ethnic diverse adults educated and screened for cancer • Increase the number of adults who screen positive for cancer who are referred for education, counseling and treatment • Increase the number of adults who screen positive for cancer who are linked to a cancer navigator • Increase the number of adults who participate in Cancer support Groups	• Support access to cancer screening and treatment for low income, uninsured adults (breast, prostate, colon, and lung, cancers), including mammograms, colorectal screening, and CT Scans. • Support and promote the city-wide cancer navigators program • Link patients screened positive for cancer to Cancer Patient Navigators • Support the implementation of Cancer Support Groups • Support survivor self-portrait and testimonies activities to reduce stigma in communities (Faces to Faith annual exhibit)
Support Older Adults to Age in Place	• Older Adults	• Reduce inappropriate readmissions for older adults • Reduce Elderly Falls • Reduce social isolation	• Increase strength and reduce the risk of falls • Offer health and wellness programming (BSHC) – Walking group, Tai Chi, cooking classes (not focused) • VIP work with the elder buildings to support Elder resident group providing them resources, address issues (55+)

Priority Area 3: Access to Care

Brief Description: The Greater Boston Area, including BIDMC's CBSA, has one of the strongest and most comprehensive healthcare systems in the world. This system is expansive and spans the full healthcare continuum, including outreach and screening services, primary care medical and medical specialty care services. There are no absolute gaps in services across the continuum, even for low income and racially/ethnically diverse populations that often struggle with access to health care services. This does not mean, however, that everyone in BIDMC's service area receives the highest quality services when they want it and where they want it. In fact, despite the overall success of the Commonwealth's heath reform efforts, data captured for this assessment shows that segments of the population, particularly low income, racially/ethnically diverse populations, and those with limited or no English language skills face significant barriers to care. These segments, and others too, struggle to access services or navigate the health system due to lack of insurance/health coverage, cost, transportation, cultural/linguistic barriers, the general complexity of the system, and shortages of providers willing to serve Medicaid enrolled or low income, uninsured patients.

Resources / Financial Investment: BIDMC will commit direct, community health program investments, and in-kind resources of staff time and materials. BIDMC will also generate leveraged funds through grants from public and private sources on behalf of its own programs or services as well as on behalf of its community partners, such as the community health centers that are part of BIDMC's Community Care Alliance.

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
Increase Access to Quality Medical Services, Including Primary Care, OB/GYN, and Specialty Care, as well as Urgent, Emergent, and Trauma Care	• Youth and adolescents • Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-	• Increase access to primary medical care services, including OB/GYN services, at BIDMC's CCA clinic sites and BIDMC's Chelsea Service Site, as well as at its APG and HCA practices • Increase the number of patients receiving specialty care medical services • Increase the number of uninsured or underinsured patients receiving needed medications • Increase access to appropriate, timely urgent, emergent, and trauma care services	• Support primary medical care services, including OB/GYN services at BIDMC's CCA clinic sites and BIDMC's Chelsea service site, as well as at BIDMC's APG and HCA practices • Support resident rotations into CCA clinic sites • Facilitate referrals to specialty care through Care Connection's Inpatient Discharge Follow Up program • Provide free pharmacy medications to eligible, low income patients • Support the provision of appropriate, timely urgent care services at BIDMC urgent care locations in Chelsea, Chestnut Hill, and the Bowdoin/Geneva neighborhood of Boston, as well as at some of BIDMC's APG practices • Support Med-Flight and coordinated EMS in Boston • Support the Commonwealth's Health Safety Net (HSN)

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
	English speakers	• Increase the number of residents who are screened and enrolled for health insurance • Increase patient satisfaction • Continue to support for HSN Trust Fund. • Advocate for policies supporting public health, mental health and substance abuse and anti-poverty programs	• Support activities of the Boston Healthy Start Initiative (BHSI), administered at Bowdoin Street Health Center (BSHC), including case management, nutrition counseling, prenatal education, and parenting support • Support the van (Transportation) with Kit Clark for Seniors • Support clinical operations at CCA clinics • Conduct "Mystery Shopping" to address quality improvement • Support care integration through information sharing, including participation in Mass HIWay and Health Information Exchange • Integrate social justice topics into resident curriculum • Support institutional and community emergency preparedness
Increase Access to Quality Oral Health Services	• Youth and adolescents • Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	• Maintain and increase the number of patients receiving primary dental care services at CCA Clinic; •	• Support clinical operations at CCA clinics • Support HSN
Promote Equitable Care and Support for those who face cultural and	• LGBTQ populations • Racially/ ethnically diverse populations,	• Maintain or increase the number of non-English speaking patients or residents served by the interpreter services program • Educate staff/clinicians in health equity principles	• Increase understanding of cultural impacts on health care delivery, health status and health outcomes • Make available tools and resources to facilitate cross-cultural communication • Increase access to interpreter services

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
linguistic barriers	and limited-English speakers	• Promote health equity, health literacy, cultural humility across CCA clinics	
Promote Greater Health Equity and Reduce Disparities in Access for LGBT Populations	• LGBTQ Population	• Reduce disparities • Promote health equity	• Work to implement SOGI appropriate policies and procedures • Collaborate with Fenway on Joint Residency Program • Support PRIDE celebration • Support efforts achieve Health Care Quality Index recognition (e.g., signage and patient self-identification of sexual orientation)

Priority Area 4: Behavioral Health (Mental Health and Substance Use)

Brief Description: There is a growing appreciation for the impact that mental health and substance use are having on individuals, families and communities. These issues impact all segments of the population across BIDMC's service area and across all demographic segments. With respect to mental health, a review of the quantitative and qualitative data, highlights the impact of depression, anxiety, and stress as well as bipolar disorder and other serious mental illnesses. With respect to substance use, the data highlights the impact of alcohol, opioids, and marijuana. The prevalence, incidence, and service utilization rates (inpatient hospitalization, emergency department visits, and public program utilization) are higher in a number of communities in BIDMC's service area when compared to benchmark data. Large proportions of the population are substantially impacted by mild to moderate mental health and substance use issues such as mild/moderate depression, anxiety and acute stress or alcohol and marijuana misuse, while smaller segments struggle acutely with severe mental illnesses or opioid addiction and alcoholism. Stigma and the impacts of racism and discrimination have also been shown to play a substantial role with respect to mental illness and substance use disorders and access to preventive, treatment, and recovery services. Trauma is also a major factor with respect to mental health and substance use. Many of those who have experience trauma suffer acutely from formally diagnosed post-traumatic stress disorder (PTSD), while others either have milder, less substantial impacts, or have undiagnosed PTSD. Substance use or misuse is often a byproduct of mental illness. Isolation and depression in older adult segments was brought up in nearly every discussion that touched on elder health. Finally, there is a dramatic gap in capacity when it comes to mental health and substance use services, particularly for those who are non-English speakers, low income, Medicaid enrolled, uninsured, or underinsured. Even for those who are insured and have comprehensive benefits, can find it challenging to find professionals willing to take insurance. As a result, people often go without needed care due to linguistic access, cost, and/or provider shortages.

Resources / Financial Investment: BIDMC will commit direct, community health program investments, and in-kind resources of staff time and materials. BIDMC will also generate leveraged funds through grants from public and private sources on behalf of its own programs or services as well as on behalf of its community partners, such as the community health centers that are part of BIDMC's Community Care Alliance.

Goal	Target Population	Programmatic Objectives	Community Activities / Strategies
Increase Access to Quality Mental Health Care and Substance Abuse Services	• Older adults • Low resource individuals and families • LGBTQ populations • Racially/ ethnically diverse populations, and limited-English speakers	• Increase patient awareness and knowledge of Behavioral Health Services • Increase the number of patients receiving integrated mental health and substance use services at BIDMC's CCA clinic sites and BIDMC's Chelsea service site, as well as at BIDMC's APG and HCA practices • Increase access to behavioral health inpatient services at BIDMC inpatient locations • Advocate for health policy that promotes primary care and behavioral health integration	• Support primary care medical and behavioral health integration at BIDMC's CCA clinic sites and BIDMC's Chelsea service site, as well as at BIDMC's APG and HCA practices • Continue to provide case management support services for residents with CCA patients with complex physical and behavioral health issues • Advocate for health policy that promotes integration • Support telephonic and onsite psychiatric consultation for primary care providers serving those with BH conditions • Provide OB/Gyn services for women with chronic substance abuse issues • Provide culturally appropriate mental health services for the Hispanic/Latino community • Support educational opportunities on cultural psychiatry for Spanish speaking mental health providers • Continue SBIRT in BIDMC's Emergency Department • Provide training for clinical providers on how to better integrate and coordinate behavioral health services across the system
Reduce burden of opioid use	• Older adults • Low resource individuals and families • LGBTQ populations • R/E Diverse and LEP	• Increase the number of adults with substance issues who are appropriately monitored, assessed, and treated in CCA Clinics • Increase the number of patients receiving inpatient detox services	• Support the development of a BIDMC Bridge Clinic to promote access to services for those identified with SUD in hospital setting • Continue the suboxone clinics in HCA and the "bridging" clinic for non-HCA patients (2 sessions each) • Support the development of a BIDMC addictions advisory group • Support the expansion of the Dimock Impatient Detox facility • Support/host Narcotic Anonymous at BSHC

APPENDIX G:

Beth Israel Deaconess Medical Center
Community Benefits Evaluation
2019

Multi-component initiatives (MCIs) such as those implemented and supported by Beth Israel Deaconess Medical Center – Community Benefits Program (BIDMC CBP) are comprehensive in nature and show promise of being effective, equitable, and sustainable.[1-8,9] Yet, the varying timelines, priorities, implementing departments and organizations, targeted populations, and available resources make evaluations challenging. Further complicating the assessment of an MCI is that population-level health behaviors and outcomes take time to achieve. While it may be hard to detect the impact of MCIs on the desired long-term outcomes, it is important to assess whether the initiative has the attributes known to support and sustain population health in due time.
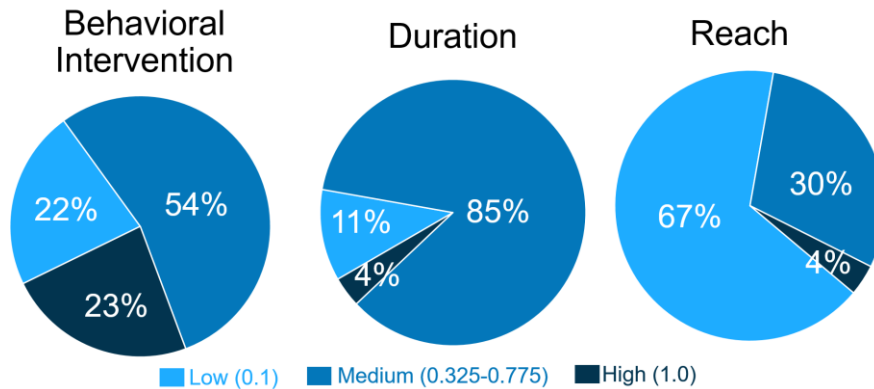
John Snow Inc. (JSI) employed an evidence-informed approach to evaluate the BIDMC CBP. Systematically, JSI scored three attributes found to be predictors of population health—the behavioral intervention, duration, and reach for each activity summarized in the *Fiscal Year 2017 Community Benefits Report to the Attorney General (AG Report)*. Intention is important because evidence suggests that when an activity improves access, reduces barriers, or changes broader conditions, there is a greater likelihood that individual behavior change will be sustained (compared to simply enhancing an individual's knowledge or skills).[10-12] Reach and duration are significant because research has found that when more people are exposed to a strategy, and for longer periods of time, there is a greater likelihood that the strategy will support the desired behaviors and outcomes.[10-12]

JSI abstracted and scored all activities defined as an action undertaken in accordance to the community benefits, and reported in the AG Report. An evaluation team member rated each activity attribute as low (0.1), medium (0.55), or high (1.0), and calculated an intensity score ($\sum$ behavioral value + duration value + reach value). Scores could range from 0.3 (lowest intensity and least likely to impact long-term outcomes) to 3.0 (highest intensity and most likely to impact long-term outcomes). All activity scores where then summed to create a total composite score.

Findings

Among the BIDMC CBP's activities (n=81), 23% had a high intention score, 4% were scored high in duration, and 4% had a high reach score. The majority of BIDMC CBP activities were of medium intensity in regards to behavioral intervention and duration; they intended to enhance services and occurred more than once (Figure 1).

Figure 1. Activity Intensity Scores by Attribute

Behavioral Intervention: 22% Low, 54% Medium, 23% High

Duration: 11% Low, 85% Medium, 4% High

Reach: 67% Low, 30% Medium, 4% High

Low (0.1)　Medium (0.325-0.775)　High (1.0)

There were five priority areas within which these 81 activities were implemented: 1) Social Determinants of Health (SDH); 2) Access to Care; 3) Physical Health and Chronic Disease Management and Prevention; 4) Behavioral Health and Substance Use; and 5) Equitable Care – Office of Diversity. SDH and Access to Care had the highest number of reported activities (29 and 25, respectively). Although there were slightly more SDH activities compared to Access to Care, the average score was lower (1.14 vs. 1.43, respectively. This indicates that the activities implemented either aimed to increase awareness/enhance skills, were shorter in duration, and/or reached a smaller percentage of the total population (Table 1).

Table 1. Summary of Activities by Priority Area

Goal/Priority Area	Number of Activities	Average Score	Total Score
Social Determinants of Health	29	1.14	33.00
Access to Care	25	1.43	35.85
Physical Health and Chronic Disease Management and Prevention	17	1.08	18.38
Behavioral Health and Substance Use	8	1.03	8.25
Equitable Care – Office of Diversity	2	0.64	1.28

The composite intensity score of the 81 activities was 96.75; the lowest possible score for all activities was a 24.3 (if all activities scored a 0.3) and the highest possible intensity score was a 243.0 (if all activities scored a 3.0). Each individual activity score ranged from 0.3 to 2.55; with a 1.19 average intensity score (Figure 2). About half (51%) of the activities had a low score (0.3 – 1.1), 47% had a medium score (1.2 – 2.1), and 2% had a high score (2.2 – 3.0) (Figure 3).

Figure 2. Individual Activity Intensity Score

Figure 3. Percentage of Activities with a Low, Medium, High Intensity Score
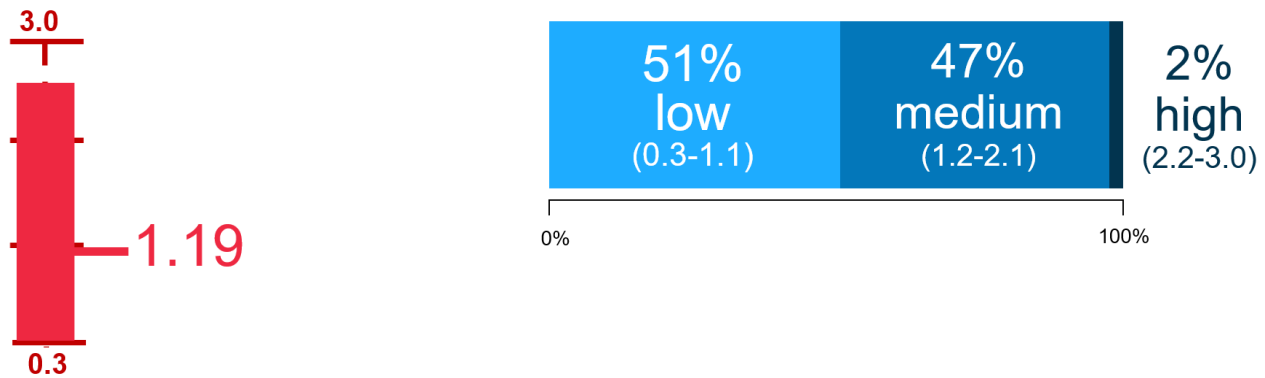
Recommendations
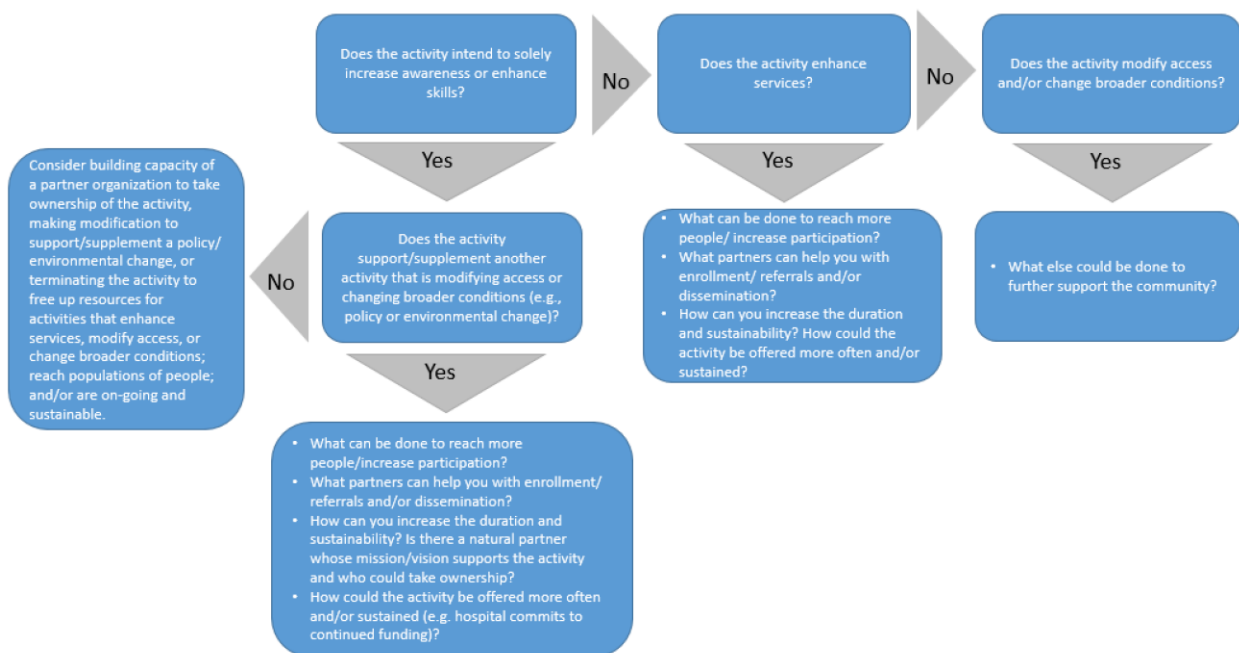
Per the requirements of the AG, BIDMC CBP contracted with JSI to evaluate the FY17 CBP. The purpose of the evaluation was to understand the likely impact of each of the reported activities on long-term behaviors and outcomes related to the five priority areas, and to identify opportunities to ensure the CBP supports population health most effectively. Using intention, reach, and duration to score the various activities provides a systematic way of assessing the dynamic and evolving activities implemented as part of the BIDMC CBP. It also provides a platform for documenting progress toward the long-term goal of improved health, and differentiating between activities that may have more or less influence on long-term outcomes.

Intensity scores should inform how resources are used most effectively in the future, provide direction for strengthening efforts individually or collectively, and serve as a baseline for measuring change overtime. During FY2017, BIDMC CBP activities included a number of activities that, based on the medium intensity scores, have potential to support the desired long-term behavior changes and improved health outcomes. Lower scoring activities: 1) intended to increase awareness and/or educate/enhance the knowledge or skills of individuals, 2) were offered once or a few times (versus ongoing); and 3) reached a small percentage of the population. Adjusting the medium-scoring activities would increase the overall strength and likelihood of impact. For example, BIDMC could take steps to increase the number of people reached/served by a strategy as one approach to increasing intensity.

In general, it is recommended that each priority have multiple activities that work simultaneously to increase awareness and improve skills; enhance services; modify access; and change broader conditions for populations of people. CBP staff and partners should assess each activities' contribution to the overall priority area, and use Figure 4 to make modifications to increase the intensity within which all activities are implemented. Finally, in order to fully assess the intensity of future activities, it is important that the purpose, duration, and reach of each activity be documented.

Figure 4. Flow chart for increasing the intensity of the community benefits program

Does the activity intend to solely increase awareness or enhance skills?

No →

Does the activity enhance services?

No →

Does the activity modify access and/or change broader conditions?

↓ Yes

Does the activity support/supplement another activity that is modifying access or changing broader conditions (e.g., policy or environmental change)?

← No

Consider building capacity of a partner organization to take ownership of the activity, making modification to support/supplement a policy/ environmental change, or terminating the activity to free up resources for activities that enhance services, modify access, or change broader conditions; reach populations of people; and/or are on-going and sustainable.

↓ Yes

- What can be done to reach more people/increase participation?
- What partners can help you with enrollment/ referrals and/or dissemination?
- How can you increase the duration and sustainability? Is there a natural partner whose mission/vision supports the activity and who could take ownership?
- How could the activity be offered more often and/or sustained (e.g. hospital commits to continued funding)?

↓ Yes

- What can be done to reach more people/ increase participation?
- What partners can help you with enrollment/ referrals and/or dissemination?
- How can you increase the duration and sustainability? How could the activity be offered more often and/or sustained?

↓ Yes

- What else could be done to further support the community?

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Appendix H:
Beth Israel Deaconess Medical Center
Community Health Needs Assessment
Boston CHNA-CHIP Collaborative Report
2019

2019
**Community Health
Needs Assessment**

Boston CHNA-CHIP Collaborative

2019 Community Health Needs Assessment

EXECUTIVE SUMMARY

Background

The Boston CHNA-CHIP Collaborative is a new initiative created by a number of stakeholders—community organizations, health centers, community development corporations, hospitals, and the Boston Public Health Commission. It aims to undertake the first large-scale collaborative city-wide Community Health Needs Assessment (CHNA) and Community Health Improvement Planning (CHIP) process.

The goals of the CHNA are to:

- Systematically identify the health-related needs, strengths, and resources of a community to inform future planning,
- Understand the current health status of Boston overall and its sub-populations within their social context, and
- Meet regulatory requirements for a number of institutions, organizations, and agencies (e.g., IRS requirements for non-profit hospitals, PHAB for health departments).

To support this effort, the Collaborative hired Health Resources in Action (HRiA), a non-profit public health organization, as a consultant partner to provide strategic guidance and facilitation of the process, collect and analyze data, and develop the report deliverables.

Approach and Methods

This CHNA focuses on the social determinants of health using a health equity lens. The influences of race, ethnicity, income, and geography on health patterns are often intertwined. In the United States, social, economic, and political processes ascribe social status based on race and ethnicity, which may influence opportunities for educational and occupational advancement and housing options, two factors that profoundly affect health. Institutional racism, economic inequality, discriminatory policies, and historical oppression of specific groups are many of the root factors that drive the health inequities we see in the U.S. today.

Social Determinants of Health Framework
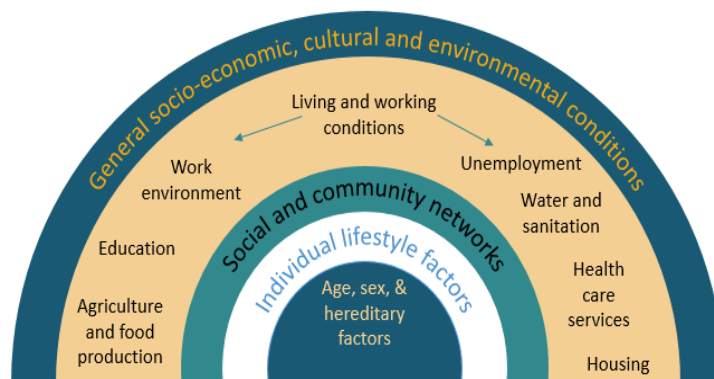
World Health Organization, Commission on the Social Determinants of Health, Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health, 2005.

The CHNA used a participatory, collaborative approach that engaged the community through different avenues. Over 100 Collaborative members representing health care, public health, education, community development, social service, and community-based organizations provided input throughout the CHNA process and played an integral role in data collection efforts. Data collection efforts were focused on engaging hard-to-reach populations who are not typically engaged in these processes or represented in the secondary data.

Existing data were drawn from national, state, and city sources, such as the U.S. Census, Massachusetts Department of Public Health, and Boston Public Health Commission, including datasets such as the Boston Behavioral Risk Factor Surveillance System (BBRFSS). For new data collection, over 91 organizations and 2,500 individuals were engaged in a CHNA community survey (N=2,404) administered online and in-person in seven languages, 13 focus groups with community residents (N=104), and 45 interviews with organizational and community leaders to gauge their perceptions of the community's needs, strengths, and opportunities.

Like all data gathering efforts, there are limitations to the CHNA data. Secondary data have a time lag, and various sources may use different definitions for similar topics. Data may be aggregated across time, geographies, or population groups to provide large enough sample sizes. More granular analysis for specific neighborhoods or ethnic groups within larger racial/ethnic categories is not possible. Primary data such as the survey and focus groups use a convenience sample which may not be representative of the larger population.

Population Characteristics

Who lives in Boston?

Boston is a young, diverse city that continues to experience population and economic growth that varies by neighborhood and race/ethnicity. Despite an economic upturn in recent years, residents experience disparities in employment and financial security – particularly residents of color and those with lower levels of education – resulting in greater economic inequality.

Racial, Ethnic, Cultural, and Language Diversity

Understanding the racial, ethnic, cultural and language profiles of Boston helps to provide context for health status and the structural, discriminatory, and social factors that contribute to health inequities. Boston is a diverse city with 23% of residents identifying as Black, nearly 20% identifying as Latino, and nearly 10% identifying as Asian. Boston also has a large immigrant community. One-third of Boston residents speak a language other than English at home, the most prevalent language being Spanish. Diversity among younger residents is greater than among older residents, and population composition by neighborhood varies substantially. Black residents comprise a larger portion of the population in Mattapan, Dorchester, Roxbury, and Hyde Park; Latino residents comprise over half the population in East Boston and experienced the largest population growth of all racial and ethnic groups; the South End, Fenway, and Allston/Brighton have the highest proportion of Asian residents.

Education

Education affects health in multiple ways because it increases economic and social resources. Education was seen by Boston CHNA survey respondents as a key component of a healthy community (45% of survey respondents reported access to good education as an important factor that defines a healthy community). While statistics point to a well-educated community (48% of Boston adults have a college degree or more), there are substantial differences across racial and ethnic groups, whereas a higher proportion of White and Asian adults have college degrees or more (70% and 57%, respectively), while one in five Black and Latino adults do. It was noted that current school-age children have multiple needs that affect their educational achievement. Echoing comments shared in focus groups and interviews, data from Boston Public Schools show that over three-quarters of students are deemed high needs (76%), defined as either being low income, economically disadvantaged, being a current or former English Language Learner, or having a disability.

> "Real wages have been going down for low income people [for decades]. This is at the heart of all of it: people have no time because they are working four jobs to get the same salary they used to get from one [job]. If you can't rest, how can you be healthy? … Some people have to work 70 hours to make ends meet." — Key informant interviewee

Employment and Workforce

Employment can confer income, benefits, and economic stability – factors that promote health. Boston, like much of the rest of the nation, has experienced an economic upturn in recent years. In 2018, Boston's unemployment rate was 3.0%, according to the Bureau of Labor Statistics; however, when examining unemployment data over the past several years, which can be analyzed by neighborhood and other subgroups, data show that, compared to Boston overall, unemployment rates have been significantly higher in Roxbury, Dorchester, Fenway, and Mattapan, primarily communities of color that experience disproportionate economic challenges. Boston's largest employers are in the health care and education sectors; these sectors have experienced substantial employment gains over the past 15 years, while manufacturing and utilities have experienced substantial decreases. Focus group participants discussed the challenges of securing a job including the importance and barrier of meeting education requirements/credentials for a new job, job application processes moving online, limited technology skills, and having a criminal record.

Income and Financial Security

Income is a powerful social determinant of health that influences where people live and their ability to access resources which affects health and well-being. Across all indicators of income and financial security, there are substantial differences across Boston neighborhoods and racial and ethnic groups. The median household income in Boston is $62,021 but ranges from $27,964 in Dorchester to $170,152 in South Boston. In four communities—Dorchester, Fenway, Roxbury and the South End— approximately 25%-37% of residents live below the federal poverty level.

Percent Boston CHNA Survey Respondents Reporting Having Trouble with Finances, by Type of Finances, 2019

Type of Finances	Percent
Saving money (N=1,810)	56.5%
Paying credit card bills (N=1,722)	24.2%
Buying groceries (N=1,832)	22.9%
Paying your monthly utilities (N=1,762)	21.7%
Paying your rent/mortgage (N=1,755)	19.5%
Paying medical bills (N=1,749)	19.3%
Paying for transportation (N=1,836)	16.7%
Paying for medication (N=1,773)	14.6%
Paying for child care (N=1,542)	10.8%
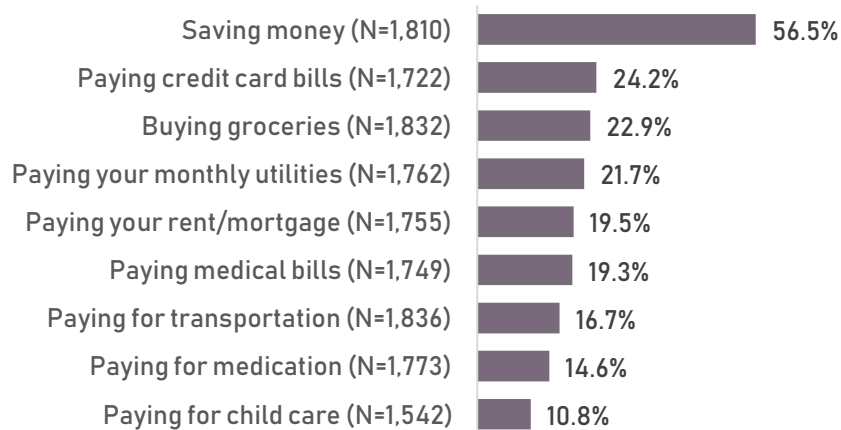
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "don't know/prefer not to answer"

Median household income is highest for White residents ($98,317) and lowest for Latino residents ($36,998); median value of total assets and net wealth for White residents far exceeds that for any other racial/ethnic group. Poverty and economic instability were key themes in focus groups and interviews, with participants sharing the challenges of meeting basic needs and the negative effects this has on personal health. As shown in the graph on the right, CHNA survey results indicate that a substantial number of respondents face challenges saving money, paying their mortgages, utility, credit card and medical bills, buying groceries and paying for childcare. These challenges are experienced by a higher proportion of non-White respondents and those without a college degree.

Food Insecurity

Food insecurity is directly linked to financial insecurity. Being able to afford food for their family was a concern shared by many CHNA participants. According to the BBRFSS, the proportion of Boston adults experiencing food insecurity has declined from 2010 to 2017 (25% compared to 17%); however, food insecurity experiences varied across sub-groups, with Latino (39%), Black (35%), and foreign-born (26-27%) residents being more likely to experience food insecurity.

> "I'm working three jobs and I can barely afford food; I buy whatever I need to feed my kid and that's it." — Focus group participant

Social and Physical Environment

What is the community context for Boston residents?

Boston has several strengths it can leverage to address community health, including proximity to and abundance of health care services, diversity and multiculturism, a strong network of collaborative social service organizations, and engaged and connected residents. However, Boston's expensive housing market is placing an economic burden on residents; housing development and the resulting gentrification is changing the social and physical environment – including access to green space and community cohesion – which is disparately affecting seniors, non-English speakers, and residents of certain neighborhoods.

Housing

Where people live is integral to their daily lives, health, and well-being. The high and rising cost of housing in Boston was a main theme that emerged in focus group and interview discussions; these perceptions are mirrored in the statistics: from 2011 to 2016, median single-family house prices increased by 48% in Boston overall, according to the U.S. Census American Community Survey.

Percent Housing Units Where 30% or More of Income Spent on Monthly Housing Costs by Housing Tenure, by Boston and Race/Ethnicity, 2017
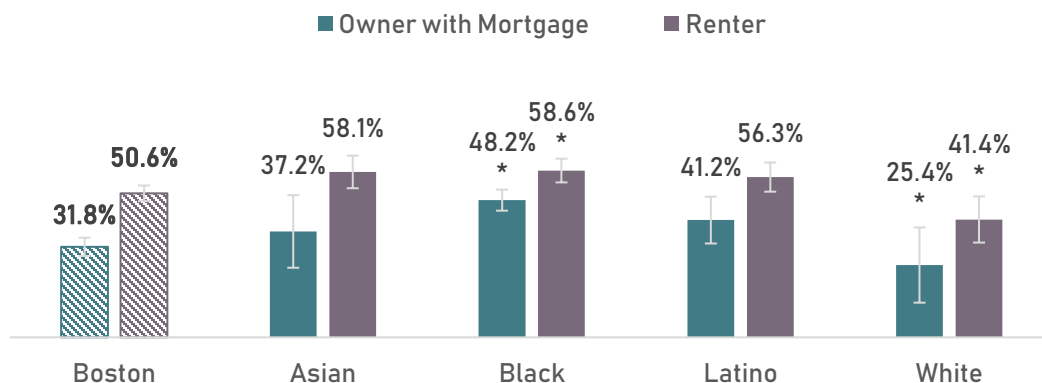
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017
NOTE: Asterisk (*) denotes race/ethnicity estimate was significantly different compared to the Boston estimate (p < 0.05)

Focus group and interview participants reported that housing costs comprise a large and ever-increasing portion of household budgets, leaving few resources for other needs such as health care, medicine, or nutritious food. The majority of housing units across Boston are renter-occupied (65%), and renter households spend an average of $1,445 per month on housing. More than half of those in renter-occupied units are housing cost-burdened, meaning they spend more than 30% of their income on housing. A significantly higher proportion of households in East Boston (59%), Fenway (59%), Roslindale (62%), and South Boston (60%) are cost-burdened than those in other neighborhoods; additionally, as shown in the graph, Black home owner (48%) and renter households (59%) are significantly more likely to spend 30% or more of their income on housing, compared to Boston owner (32%) and renter households (51%)

overall. Additional pressures include gentrification, long wait lists for housing assistance, overcrowding, poor housing quality, and for some, housing discrimination.

In 2018, there were an estimated 6,188 residents counted as experiencing homelessness in Boston, according to the U.S. Department of Housing and Urban Development, Continuums of Care Report. Nearly one-third of homeless households included at least one child. Key informants in the field noted that those with mental illness or substance use, LGBTQ youth and seniors, immigrants, those with criminal records, single mothers, and residents who have experienced trauma as being especially vulnerable to becoming homeless.

Transportation

Transportation connects people with and between where they live, learn, play, and work. Though many focus group participants perceived improvements in transportation in recent years, others expressed concerns about cost, timeliness, and accessibility of public transportation, especially for the elderly, those with limited English proficiency, and residents of neighborhoods with limited access to transportation. According to the American Community Survey, slightly over one-third of Boston residents use a personal vehicle to get to work (39%), and another one-third use public transportation (34%). On average, Bostonians spend about 11% of household income on transportation-related expenses, according to the Bureau of Labor Statistics. Focus group participants cited challenges with public transit and transportation programs – including reliability, navigating the system, overcrowding, and the need to schedule in advance – making it difficult to keep appointments.

> "Most [residents] rely on public transportation, and it is difficult when the signs are not in their language. They may not understand announcements about delays or emergencies, and it makes them feel insecure about how to navigate." — Key informant interviewee

Green Space and the Built Environment

Slightly over 8% of land in Boston is comprised of parks, playgrounds, and athletic fields and about 7% is parkways, reservations, and beaches. While Boston is considered a very walkable city by national standards, focus group members and interviewees shared that the built environment varies across neighborhoods. Those from Allston/Brighton, Chinatown, and Dorchester perceived insufficient green space across their neighborhoods, which they attributed to the growth in new housing developments.

Social Environment

Focus group and interview participants identified examples of strong social networks in Boston, citing cohesion across different immigrant groups and among others who share similar racial, cultural, linguistic and religious backgrounds. Two-thirds of CHNA community survey respondents believed that people in their neighborhoods help each other and three-quarters perceived that they and their neighbors want the same thing for their neighborhoods. Survey respondents also indicated strong civic engagement, as evidenced by high levels of self-reported involvement in community organizations and voting. At the same time, focus group participants also mentioned a decline in community social ties, brought on by lack of time and generational differences; gentrification has likewise changed the "feel" of some neighborhoods, specifically Roxbury, East Boston, and Dorchester. CHNA community survey results and conversations in

focus groups indicate that subtle and overt discrimination is an issue in Boston, particularly for immigrants and non-English speakers, LGBTQ residents, and older residents and youth, substance users, and the homeless.

> "Regardless of the changing face of the community, there is still a real sense of community here. People looking out for each other… and the amount of services and variety of services is incredible. We hope to keep that richness within the community."
> — Focus group participant

Community Assets

Understanding the resources and services available in a community—as well as their distribution—helps to elucidate the assets that can be drawn upon to address community health, as well as any gaps that might exist. Boston has numerous strengths according to focus group participants, interviewees, and CHNA community survey respondents. Neighborhoods were described as being "tight-knit" with substantial cultural diversity and strong faith communities. Sixty-eight percent of community survey respondents identified racial and cultural diversity as a top strength of their community. Activism and resiliency are other notable characteristics of Bostonians. Proximity and abundance of health care was also a key strength. Across the city, there are 22 hospitals and 33 health center access sites. Community survey respondents identified proximity to medical services as the top strength of their communities, with 69% of respondents identifying this a top strength. Other assets include services and supports for students at Boston Public Schools, and positive strides in the city for LGBTQ residents, including within the school system through Gay Straight Alliances. Finally, the social services network in Boston was perceived to be large, strong, and collaborative, although some suggested more could be done to enhance cooperation across institutions and reduce duplication.

Community Health Issues

What is the health status of Boston residents?

Health-related concerns that were identified as most pressing among CHNA participants were housing, substance use and mental health, community violence, the environment (including air quality and effects of climate change), and chronic conditions and their related risk factors such as obesity. The disparities seen in these issues mirror the historical patterns of structural, economic, and racial inequities experienced for generations across the city and the U.S.

Community Perceptions of Health

Percent Boston CHNA Survey Respondents Reporting Top Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health (N=2,053), 2019

Concern	Percent
Housing quality or affordability	50.5%
Alcohol/drug abuse	49.0%
Mental health	42.1%
Community violence	31.1%
Environment	27.7%
Obesity	24.5%
Homelessness	24.1%
Smoking	23.1%
Poverty	22.8%
Diabetes	22.8%
Employment/job opportunities	22.3%
Elder/aging health issues	22.1%
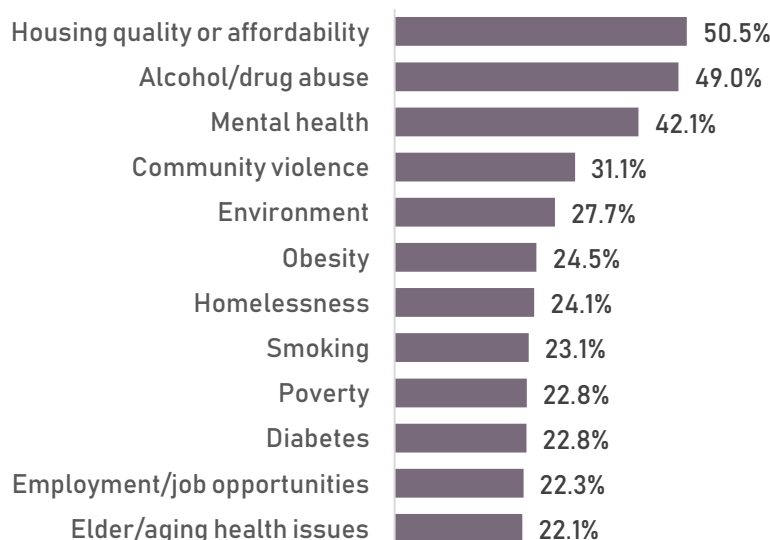
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: The figure above only presents the concerns that over 20% of survey respondents selected

Understanding residents' perceptions of health is a critical step in the CHNA process, providing insights into lived experiences, including key health concerns and facilitators and barriers to addressing health conditions. As seen in the graph on the right, the top community health concerns among Boston CHNA survey respondents were housing quality or affordability (51%) and alcohol/drug abuse (49%), followed by mental health (42%) and community violence (31%); these were also top concerns by neighborhood, race/ethnicity, age group, gender, and sexual orientation, with the addition of chronic diseases and related behaviors as well as the environment.

However, there were some notable differences in responses by race/ethnicity and age. Asian respondents were more likely to identify smoking (37%) and elder/aging health issues (32%), Black respondents were more likely to identify diabetes (35%), Latino respondents were more likely to identify obesity (37%), and White respondents were more likely to identify the environmental health issues (e.g., air quality, traffic, climate change) (39%) as one of their top five community health concerns.

Overall Morbidity and Mortality

Cancer (all types combined) and heart disease are the leading causes of death in Boston. For cancer, Black (175.3 deaths per 100,000 residents) and White residents (173.1 deaths per 100,000 residents) experience higher rates of death compared to Latino (109.4 deaths per 100,000 residents) and Asian residents (127.0 deaths per 100,000 residents). Similar racial/ethnic patterns are seen with heart disease mortality. Accidents are the third leading cause of death among all racial/ethnic groups - except for Asian residents, where the third leading cause of death was cerebrovascular disease (i.e., stroke). In 2016, unintentional opioid overdoses accounted for 69% of all accidental deaths. Since 2011, the death rate due to accidents has nearly doubled from 28.9 deaths to 54.6 deaths per 100,000 residents in 2016.

Cancer, accidents, and heart disease are also the leading causes of premature mortality (death before age 65); notably, accidents have surpassed heart disease as the second leading cause of premature death.

Leading Causes of Mortality in Boston, by Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents, 2014–2016 Combined

Rank as Cause of Mortality	Population			
	Asian	Black	Latino	White
1	Cancer (127.0)	Cancer (175.3)	Cancer (109.4)	Cancer (173.1)
2	Heart Disease (64.6)	Heart Disease (133.9)	Heart Disease (87.8)	Heart Disease (149.3)
3	Cerebrovascular Diseases (21.5)	Accidents (38.3)	Accidents (41.6)	Accidents (56.5)
4	Alzheimer's Disease (18.1)	Cerebrovascular Diseases (39.9)	Diabetes (25.1)	Chronic Lower Respiratory Diseases (32.7)
5	Hypertension/Renal Disease (16.1)	Diabetes (38.6)	Cerebrovascular Diseases (20.2)	Cerebrovascular Diseases (26.6)

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Death Files, 2014-2016 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

Obesity, Nutrition, and Physical Activity

Obesity is the second leading cause of preventable death in the United States and increases the likelihood of chronic conditions among adults and children. Concerns related to obesity were frequently discussed among focus group and interview participants. More than half of Boston adults (57%) and one-third of Boston Public high school students (33%) reported being overweight or obese; Black and Latino adults (68% for both groups) and high school students (36% and 37%, respectively) were more likely to be overweight or obese than White adults (51%) or students (23%). The prevalence of obesity and overweight also follows a socioeconomic gradient; residents who are renters, have lower levels of education, and lower income were more likely to be obese or overweight compared to their counterparts.

As shown below, at the neighborhood level, the percent of adults in Mattapan, Hyde Park, Dorchester, West Roxbury, East Boston, and Roslindale who were obese or overweight was significantly higher than the prevalence of obesity for the rest of Boston.

Percent Adults Reporting Obesity or Overweight, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
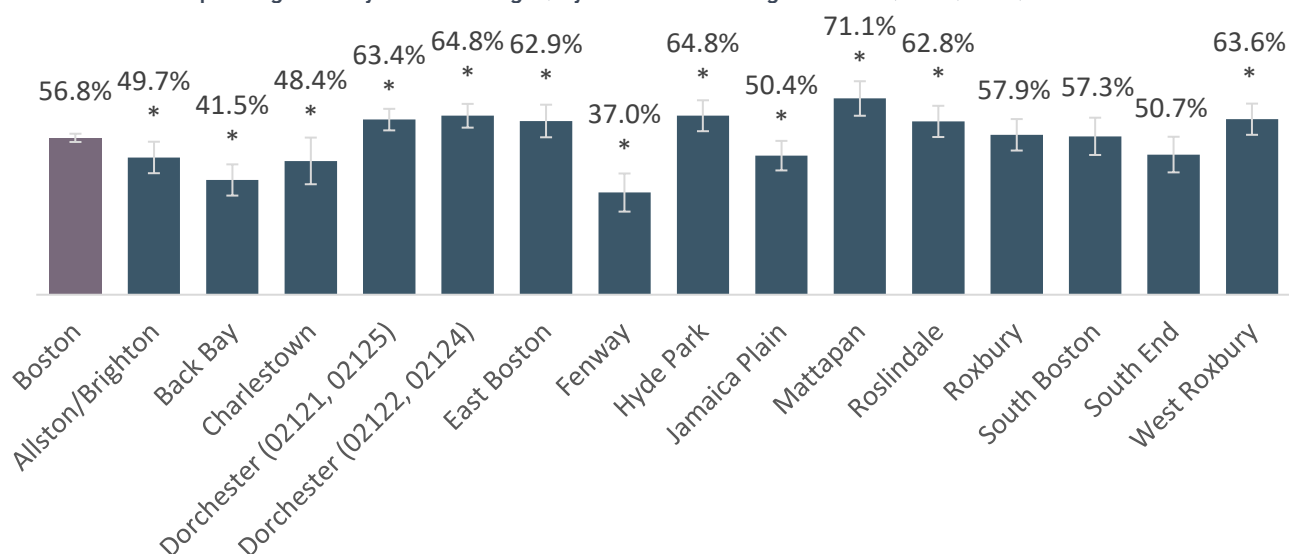
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Focus group and interview participants described healthy eating and physical activity as ways to prevent obesity but cited challenges affording and accessing healthy food and recreational opportunities in their community due to their income and limited community resources.

Chronic Disease

Although chronic diseases are among the most common and costly health problems, they are also among the most preventable through changes in behavior such as reduced use of tobacco and alcohol and improved diet and physical activity. In 2013-2017, one-quarter (25%) of Boston adults reported being diagnosed with hypertension, one of the most significant risk factors for heart disease and stroke. However, among focus group and interview participants, diabetes was frequently mentioned as a community concern that impacts both adults and children, followed by pediatric asthma. While there is a low prevalence of diabetes and asthma in Boston (9% and 11% respectively), there were significant differences across the population. Black and Latino residents have a higher prevalence of diabetes and experience higher diabetes-related hospitalization and death rates than White residents.

Similar to diabetes, there were disparities in the distribution of asthma across the population, including by race/ethnicity, socioeconomic status, and neighborhood. Black and Latino adults and children experience significantly higher asthma-related emergency department visits compared to White adults and children, as seen below in the graph of pediatric asthma emergency department visits. Participants shared that young children living in poverty are disproportionally affected by pediatric asthma as a result of poor environmental factors and/or poor living conditions including exposure to air pollutants, rodents, mold, and tobacco smoke. Also disproportionately affected by diabetes and asthma are residents of Roxbury and Dorchester, who experience diagnoses and hospitalizations at significantly higher rates than residents in the rest of Boston.

Pediatric Asthma Emergency Department Visit Rate, by Boston and Race/Ethnicity by Age, Age–Specific Rate per 10,000 Residents, 2016–2017 Combined

Legend: ■ Boston ■ Asian ■ Black ■ Latino ▨ White

0-2 years
- Boston: 182.6
- Asian: 43.2
- Black: 343.5 *
- Latino: 204.8 *
- White: 73.1

3-5 years
- Boston: 321.6
- Asian: 144.5 *
- Black: 510.2 *
- Latino: 348.9 *
- White: 89.0

6-12 years
- Boston: 210.5
- Asian: 41.1 *
- Black: 342.9 *
- Latino: 199.6 *
- White: 82.8

13-17 years
- Boston: 96.5
- Asian: 25.6
- Black: 144.4
- Latino: 87.9 *
- White: 45.1

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Asian in the 0-2 years, 6-12 years, and 13-17 years are ≤ 20 and rates should be interpreted with caution; Bars with pattern indicate reference group within each age category; Asterisk (*) denotes where estimate was significantly different compared to reference group within each specific age category (p <0.05)

Mental Health

Mental and physical health are intricately connected, and mental illness is among one of the leading causes of disability in the United States. Mental health issues were described as a priority concern across almost all focus group and interviews, and often discussed in connection with trauma. Stress, anxiety, and depression were the most frequently-cited challenges among Boston residents, especially those who identify as LGBTQ, low-income residents, seniors, children, immigrants, and communities of color.

Percent Boston Public High School Students Reporting Persistent Sadness, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

- Boston: 30.1%
- Asian: 24.1%
- Black: 30.1%
- Latino: 32.1%
- White: 28.1%
- Female: 36.8% *
- Male: 23.3%
- LGBTQ: 48.4% *
- Heterosexual/non-transgender: 27.1%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Students were asked in the past 12 months if they felt sad or hopeless every day for 2 weeks or more; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Surveillance and survey data indicate that anxiety and depression are somewhat common across Boston residents, with one in eight Boston adults reporting persistent sadness (12%) and one in five reporting that they felt persistent anxiety (21%).

Furthermore, the proportion reporting persistent anxiety has increased over time; a higher proportion of females (24%), lower income individuals (28%), younger (24%), LGBTQ (33%), and unemployed residents (33%) reported persistent anxiety than their counterparts.

Concern for mental health issues among children and youth was also a prominent theme in focus groups and interviews and this is validated through quantitative data: as shown on the right, about one-third of Boston public high school students reported feeling persistent sadness; the rate is even significantly higher among female students and students who identify as LGBTQ. While statistics indicate that the proportion of people receiving treatment for depression has grown, barriers such as stigma, cultural and lingustic differences, and lack of sufficient providers constrain access to services for many. Access to mental health services, especially to providers that understand different cultures and languages, was cited as a challenge by several interviewee and focus group participants.

Substance Use

Substance use was considered a priority health issue in many focus group and interview discussions. Participants mentioned a variety of substances including marijuana, prescription drug use, and opioids as being among the most concerning. Co-occurring mental health and substance use issues were frequently discussed among key informants, as well as the interrelationship between trauma, mental health, and substance use. Smoking among adults and youth, as well as e-cigarette and marijuana use among youth, have significantly decreased in Boston; however, there are significant differences by population groups. Notably, LGBTQ adults and youth are more likely to use tobacco (22% and 12%, respectively), e-cigarettes (18% of LGBTQ youth), and marijuana (34% and 39%, respectively), compared to heterosexual/non-transgender adults and youth.

Approximately one-quarter of Boston adults reported engaging in binge drinking behavior, although LGBTQ adults were significantly more likely than heterosexual/non-transgender adults (24.0%) and males (29.8%) were significantly more likely than females (19.8%) to report this. For alcohol-related hospitalizations, White residents had the highest rates of hospital patient encounters for alcohol poisoning, while Black residents had the highest rates of hospital patient encounters for alcohol dependence/abuse.

The rate of opioid overdose deaths in Boston has significantly increased since 2013 and was highest among Latino residents (50.5 deaths per 100,000 residents), followed by White residents (45.1 deaths per 100,000 residents) in 2016.

Unintentional Opioid Overdose Mortality Rate, by Boston and Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample size for Black and Latino for 2013 and 2014 are ≤ 20 and rates should be interpreted with caution; Data not shown for Asian due to insufficient sample size; Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time), Latino (increase over time), and White (increase over time)

The majority of focus group participants and key informants who discussed substance use as a concern identified opioids as a persistent issue in Boston. They noted that there were several barriers to treatment and recovery services, including cost, availability of different options, and limited cultural and language competencies of providers to treat immigrant communities.

Violence and Trauma

Violence and trauma are important public health issues affecting physical and mental health and were frequent concerns reported by focus group and interview participants. Many focus group participants expressed concern about personal safety in their communities, noting that they saw communities of color and children as being disproportionately affected.

Percent Boston CHNA Survey Respondents Reporting Considering Their Neighborhood Unsafe or Extremely Unsafe, by All Respondents and Selected Indicators, 2019 (n=1,920)
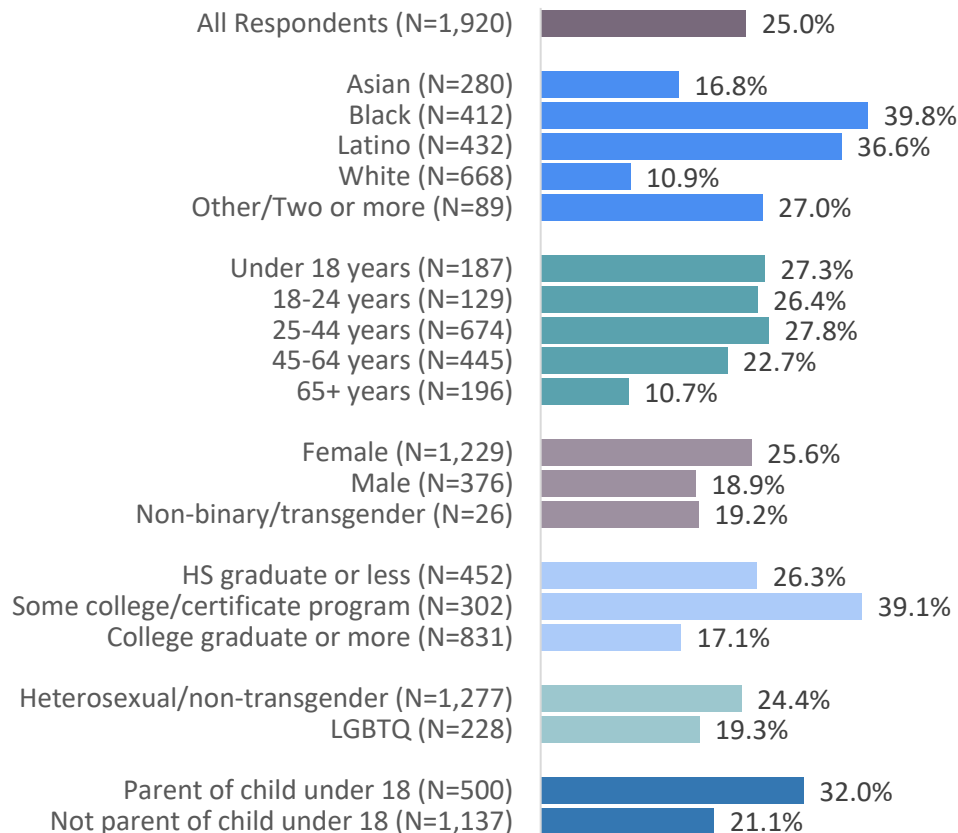
Group	Percent
All Respondents (N=1,920)	25.0%
Asian (N=280)	16.8%
Black (N=412)	39.8%
Latino (N=432)	36.6%
White (N=668)	10.9%
Other/Two or more (N=89)	27.0%
Under 18 years (N=187)	27.3%
18-24 years (N=129)	26.4%
25-44 years (N=674)	27.8%
45-64 years (N=445)	22.7%
65+ years (N=196)	10.7%
Female (N=1,229)	25.6%
Male (N=376)	18.9%
Non-binary/transgender (N=26)	19.2%
HS graduate or less (N=452)	26.3%
Some college/certificate program (N=302)	39.1%
College graduate or more (N=831)	17.1%
Heterosexual/non-transgender (N=1,277)	24.4%
LGBTQ (N=228)	19.3%
Parent of child under 18 (N=500)	32.0%
Not parent of child under 18 (N=1,137)	21.1%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups ($p < 0.05$): race/ethnicity, age, gender identity, educational attainment, and parent status

Similarly, one quarter of respondents to the CHNA community survey described their neighborhoods as unsafe or extremely unsafe; Black and Latino respondents were more likely than other respondents to describe their communities this way (40% and 37%, respectively). Intimate partner violence was also mentioned in focus groups and interviews, with women of color and non-English speaking immigrants identified as particularly vulnerable populations. Populations varied on their experience of violence overall. According to the BBRFSS, respondents who identified as female, 35-49 years of age, 50-65 years of age, residents of the Boston Housing Authority, renters or tenants receiving housing assistance, and LGBTQ-identified respondents were significantly more likely than their counterparts to report experiencing violence in their lifetime.

Exposure of children and youth to unhealthy relationships and violence (adverse childhood experiences) is also of concern: nearly one in five Boston adults (19%) reported experiencing at least one adverse childhood experience such as living with a caregiver with mental health concerns or who was a problem drinker, having parents who were physical violent towards each other, or living with a caregiver who had been in prison. Focus group and interview participants noted that trauma from community violence, poverty, and, more recently, fear of deportation and family separation, are growing issues of concern.

Maternal and Child Health

Quantitative data indicate that the overall birth rate in Boston has significantly declined for women 15-44 years old since 2011 to 41.6 births per 1,000 female residents in 2017. However, current birth rates are significantly different by neighborhood compared to the rest of Boston; female residents in Hyde Park, Charlestown, Roslindale, Mattapan, East Boston, Dorchester, and West Roxbury had significantly higher birth rates. Rates of infants with low birthweight and preterm births—both important risk factors for infants—are less than 10% and have generally remained steady from 2011 to 2017; however, rates for both are significantly higher among Black (13% and 12%, respectively) and Latino mothers (9% and 11%, respectively). Access to prenatal care has improved over time, and currently more than eight in ten mothers in Boston receive adequate or adequate plus prenatal care (83%). However, Asian, Black, and Latino mothers are significantly less likely than White mothers to receive adequate or adequate plus prenatal care (84%, 76%, 79%, and 89% respectively). CHNA participants tended to discuss maternal and child health in the context of economics and parenting concerns. Childcare was frequently discussed, with expensive or inconvenient childcare, long waitlists, and lack of summer childcare as primary issues. Difficulty paying for childcare was also an issue for respondents to the Boston CHNA community survey (11% of survey respondents reporting having trouble paying for childcare).

> "People are always working and giving all of their money to child care. I'm working my life away to pay someone else to take care of my children." — Focus group participant

Sexual Health

Sexually transmitted infections (STIs) remain a public health problem in the United States, despite the fact that they are preventable. While sexual health was not a prominent theme discussed across focus groups or interviews; the Youth Risk Behavioral Survey provides helpful insights into sexual behaviors among youth, such as condom use, to inform STI prevention strategies. This is particularly important given that young adults experienced the highest rates of chlamydia (1,737.8 cases per 100,000 residents). Boston has experienced a significant increase in cases of chlamydia and gonorrhea over time with disparities by neighborhood, age, and sex. While the incidence of HIV among Boston residents has decreased over time, disparities persist by neighborhood, race/ethnicity, age, and sex.

Environmental Health

A healthy environment is important for a high quality of life and good health. Boston CHNA survey respondents cited their top environmental health concerns as: outdoor noise pollution from vehicles, outdoor air pollution from vehicles, and dangerous traffic. Overall, these top three concerns were similar across neighborhoods, except for East Boston which cited airport noise as a top concern. Air pollution and quality was a concern discussed in focus groups in Chinatown and East Boston where residents perceived that lower-income neighborhoods were more vulnerable to pollutants and litter due to proximity to highways, airports, and train stations. BBRFSS data show secondhand smoke exposure was significantly higher among Boston residents of color and lower socioeconomic status.

Multiple key informants explained how more extreme weather, heat, and rising seas from climate change are increasing health problems, particularly for mental health, respiratory, cardiovascular and vector-borne disease. Boston emergency department utilization rates and costs for climate-driven health issues are expected to rise in the future. Community health and resilience efforts can reduce such threats and costs, and help the city prepare for Climate Ready Boston's estimate that 7% of our land will experience frequent storm water flooding by 2050.

Health Care Access and Utilization

Access to comprehensive, quality health care services is important for promoting and maintaining health, preventing and managing disease, and reducing the chance of premature death. Boston is a city with many health care resources and a high proportion of residents have health insurance. Focus group participants, interviewees, and Boston CHNA survey respondents all indicated satisfaction with health care in their community. Residents most commonly obtain health care from a private doctor's office or a public health clinic/community health center, and BBRFSS results show that approximately eight in ten respondents have at least one person as their personal doctor.

Percent Boston CHNA Survey Respondents Reporting Factors That Made It Harder for Them to Get Health Care Services They Needed in Past Two Years (N=1,014), 2019

Factor	Percent
Long wait for an appointment	43.6%
Lack of evening or weekend services	38.0%
Cost of care	33.7%
Lack of transportation	18.9%
Office not accepting new patients	18.2%
Lack of providers who accept my insurance	15.0%
Unfriendly doctors, providers, or office staff	12.9%
Don't have health insurance that covers what I need	12.3%
Don't know what types of services are available	11.1%
Afraid to ask questions or talk to doctors/medical…	10.8%
Afraid if I take the time off to get care, I'll lose my job	10.1%
I have no regular source of health care	8.8%
Felt discriminated against	7.0%
Language problems/could not communicate	4.1%
Instruction/directions are not in my language	2.5%
Health information is not kept confidential	1.9%
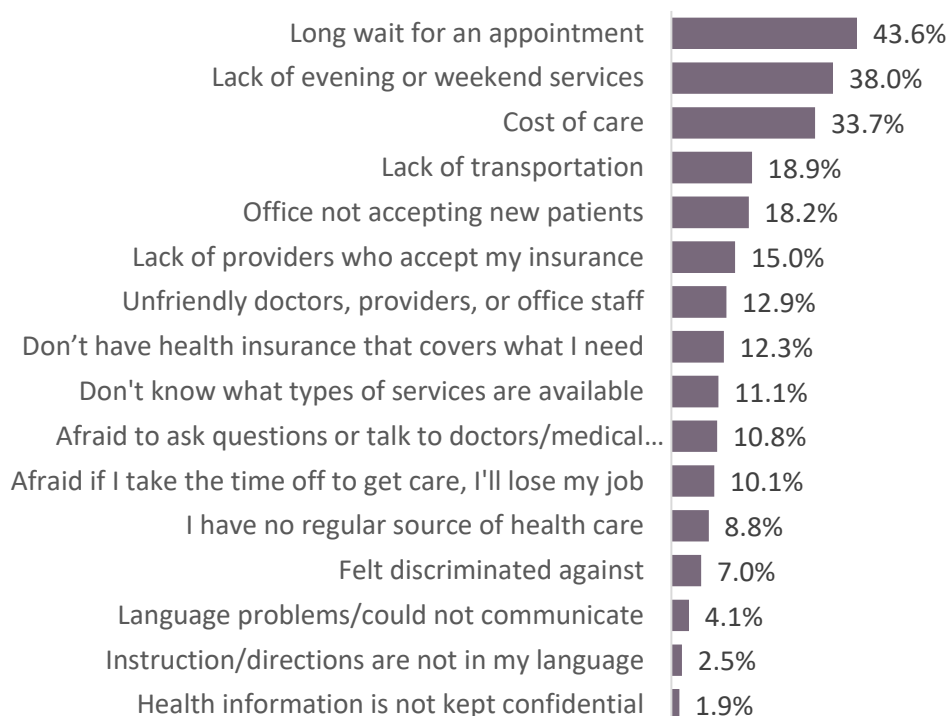
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Data arranged in descending order; Percentage calculations do not include respondents who selected "prefer not to answer/don't know" or "none of the above;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

According to focus group members, interviewees, and community survey respondents, several barriers to accessing health care in Boston exist. The most common barriers mentioned by interviewees and focus group participants included underinsurance; language and immigration status; navigation and care coordination challenges; transportation; and lack of culturally-

sensitive approaches to care. As seen in the graph, for CHNA community survey respondents, long wait times for appointments and lack of evening or weekend services were the top two factors that made it difficult for them to access health care (44% and 38% of survey respondents, respectively). Cost of care, especially dental care, was also cited as a challenge for some Boston residents.

Community's Vision and Opportunities

Participants in interview and focus group discussions were asked for their suggestions for addressing identified needs and their vision for the future. Suggestions included the following:

- **Employment and Workforce-** Reduce employment barriers by addressing minimum education requirements to be more inclusive of those with valuable lived experience; subsidizing the cost of childcare so low-income parents can work towards upward mobility through education and job training; and increasing youth employment opportunities.
- **Education-** Focus resources on early childhood education; increase social supports in public schools; train educators on trauma-informed approaches to recognize trauma symptoms and respond accordingly; use restorative justice approaches to discipline and behavior issues; and address chronic absenteeism by bolstering wrap around services.
- **Food Insecurity-** Increase opportunities to access healthy and affordable food through: urban farming and community gardens; farmer's markets that accept SNAP benefits; and strengthening initiatives that address food access from a clinical perspective, where practitioners can prescribe services and are reimbursed as part of Accountable Care Organizations.
- **Housing-** Mitigate the negative impacts of gentrification and displacement by creating more opportunities for home ownership in non-White communities to build generational wealth; and pushing for long-term renewable leases for nonprofits and social services agencies that are being strained by rising operating costs. Further leverage the partnerships between housing and health care for more place-based services.
- **Transportation-** Focus on transportation equity in lower income communities that tend to have longer commuting times; reduce traffic by investing in speedy bus lanes; continue making the city more bikeable; and explore fee structures for ride share programs to generate revenue for operational costs at the local level.
- **Chronic Disease-** Focus on prevention strategies and chronic disease management— particularly to prevent diabetes and obesity; and increase more affordable gym and healthy food options.
- **Mental Health**- Invest in more mental health supports in public schools; reduce cultural stigma around mental health services, and recruit clinicians who reflect the diversity of Boston.
- **Substance Use-** Focus on prevention efforts, especially related to marijuana use and prescription drug use among adolescents.
- **Violence and Trauma**- Restore trust among government, police, and health care institutions by strengthening community linkages and improving community cohesion.
- **Maternal and Child Health**- Provide more supports to learn positive parenting skills; and subsidize the cost of childcare for low-income families, especially for single-headed households.

- **Environmental Health**- Address environmental health concerns in a systemic way and in partnership across sectors and disciplines, especially as new developments increase across the city; and invest in a centralized data repository to track environmental health data.
- **Health Care Access**- Increase supports for navigating the complex health system and delivering culturally-sensitive care and linguistically appropriate services to diverse groups.
    - ▶ Greater collaboration and information or data sharing to better serve patients and clients, especially related to the roll out of Accountable Care Organizations (ACOs).
    - ▶ Pursuing multi-year funding that allow organizations to respond to crisis and opportunities, and to build internal and external capacity.

Key Themes and Conclusions

Overarching themes that emerged from this synthesis that cut across multiple topic areas include the following:

- **Health disparities across most issues show similar patterns by racial/ethnic group and socioeconomic status, and mirror the historical inequities brought about by generations of institutional racism, structural barriers, and discriminatory policies.** Whether differences in cancer mortality or asthma prevalence – or unemployment rates and housing instability – similar patterns can be seen in the data, with communities of color, immigrant communities, lower income individuals, and residents of low resourced neighborhoods, among others, experiencing a disproportionate burden across nearly all areas. Although current data sources are not currently designed to be able to examine intersecting identities more deeply, this disproportionate burden is likely even worse when considering intersectionality—that is, the complex, cumulative way in which the effects of multiple forms of discrimination (such as racism, sexism, and classism) combine, overlap, or intersect, especially in the experiences of marginalized groups. These issues are dynamically intertwined and reflect the cumulative and current challenges residents face resulting from historical and structural inequities across multiple systems.
- **With a current population of nearly 670,000 residents, Boston has experienced—and is expected to continue to experience—population growth across every neighborhood in the city, though growth rates across neighborhoods vary.** Overall, Boston is a young city, with about one-third of residents under the age of 25, that continues to experience population growth. The greatest increases in population have occurred in Roxbury, South Boston, Hyde Park, East Boston, and Charlestown.
- **Boston is a richly diverse city in terms of racial, ethnic, and linguistic population groups, though data show this diversity is not similar across neighborhoods.** Boston's large immigrant and non-English speaking communities were identified as facing unique challenges related to social and economic factors as well as navigating the health care system. The wide-ranging diversity of Boston residents presents challenges when delivering health and social services that aim to meet the multitude of needs across the city. Additionally, CHNA community survey results and conversations in focus groups indicated that subtle and overt discrimination is an issue in Boston, particularly for immigrants and non-English speakers, LGBTQ residents, youth and older residents, substance users and the homeless.
- **Although unemployment rates are low and there is economic opportunity for many residents across the city, there are substantial differences in financial security across neighborhoods and racial and ethnic groups.** The median household income in Boston is

$62,021 but ranges from $27,964 in Dorchester to $170,152 in South Boston. In four communities—Dorchester, Fenway, Roxbury, and the South End— approximately 25-37% of residents live below the federal poverty level. Focus group and interview participants discussed the role poverty plays in exacerbating health challenges, particularly among vulnerable groups. Quantitative data show that risk-related behaviors and health outcomes generally continue to have inverse relationships with socioeconomic factors.

- **Housing affordability and its implications emerged as a key theme that arose across secondary data, the community survey, and focus groups and interviews.** Of all social determinants identified as imperative to health and well-being, housing stability emerged as a top priority among participants. More than half of those in renter-occupied units across the city are housing cost-burdened, meaning they spend more than 30% of their income on housing. Residents frequently discussed issues of gentrification, long wait lists for Section 8 housing, housing discrimination, overcrowding, and poor housing quality as consequences of a tight and expensive housing market.

- **The impact of chronic diseases and their risk factors—especially diabetes, obesity, and pediatric asthma—emerged as a priority concern among residents.** Residents of color, as well as residents who live in Roxbury and Dorchester are disproportionately affected by chronic diseases. Assessment participants frequently discussed a number of social determinants that presented challenges to the prevention and management of these chronic conditions. In addition to poverty and high housing costs that force individuals to prioritize their spending, a lack of affordable recreational programming and access to nutritious food were described as barriers to health and well-being. Lower income neighborhoods were described as having fewer affordable gyms, grocery stores, and fast food and convenience stores compared to affluent areas.

- **Behavioral health, specifically mental health and substance use among young people are growing concerns among community residents; opioids, prescription medication, and marijuana use were reported as most concerning.** Co-occurring mental health and substance use issues were frequently discussed, as well as the interrelationship between trauma, mental health, and substance use. Quantitative data show that one in five Boston residents report persistent anxiety and this proportion has increased over time. The rate of opioid overdose deaths in Boston has also significantly increased, particularly among Latinos. Specific population groups are disparately affected by mental health and substance use, especially residents who are younger, LGBTQ, lower income, and of communities of color.

- **Violence-based trauma was identified as a major factor of negative community health outcomes, and there is a need for more trauma-informed approaches to care, particularly for children and communities of color.** One in four Boston CHNA community survey respondents described their neighborhoods as unsafe or extremely unsafe, with Black and Latino respondents more likely to describe their communities this way. Apart from community violence and intimate partner violence, assessment participants identified poverty, and more recently, the fear of deportation and family separation, as a growing issue. Exposure of children and youth to unhealthy relationships and violence (adverse childhood experiences) is also of concern: nearly one in five Boston adults reported experiencing one adverse experience over their lifetime.

- **Environmental health risk factors are a particular concern in relation to air quality, effects of climate change, and the built environment.** Poor environmental health quality has the greatest impact on low-income communities. Issues such as noise and air pollution

and dangerous traffic were prominent concerns among survey respondents. Indoor air quality is also an issue, and more than one in ten Boston adults on the BBRFSS reported exposure to secondhand smoke, with Asian, Black, and Latino residents all significantly more likely than White residents to report exposure. The effects of climate change were also noted, with flooding being one of the most significant issues. Boston emergency department utilization rates and costs for climate-driven health issues are expected to rise in the future. Climate change projections estimate that 7% of Boston's land area could be exposed to frequent stormwater flooding by 2050.

■ **Boston has many health care and social service assets that can be leveraged, but access to those services is a challenge for some residents.** Proximity of health care services and education institutions, diversity and multiculturalism, and engaged residents were noted as key strengths among Bostonians that can be leveraged in future planning. Barriers to care were multifaceted and included underinsurance, language and immigration status, navigation and care coordination challenges, transportation, and lack of culturally-sensitive approaches to care.

■ **Strengthening partnerships and infrastructure for collaborative data gathering and sharing can facilitate greater coordination and identify specific population groups most in need.** Undertaking this collaborative CHNA demonstrated that organizations can leverage their strengths and resources for collaborative assessment and planning. However, as extensive as the data gathering was for this effort, it also identified current limitations. Large datasets are not necessarily available on some population groups such as residents who speak specific languages or on particular topics such as child health ages 0-14 years old. As the Collaborative engages in further planning, there is opportunity ahead to strengthen the relationships, practices, and infrastructure to address these data limitations. In the future, potentially more granular analyses by neighborhood, topic, or population group can be conducted to help tailor strategies for action.

Priorities for Collaborative Action

During May-June 2019, an engagement process was undertaken through an online survey, small group discussions with residents and organizational staff across the city, and a large inclusive prioritization meeting to identify the priorities for collaborative action. The final priorities selected were:

■ **Housing** (including affordability, quality, homelessness, ownership, gentrification, and displacement)
■ **Financial Security and Mobility** (including jobs, employment, income, education, and workforce training)
■ **Behavioral Health** (including mental health and substance use)
■ **Accessing Services** (including health care, childcare and social services)

The cross-cutting and overarching focus of the planning process will be around **Achieving Racial and Ethnic Health Equity** recognizing that institutional racism and structural inequities are what drive the health disparities we see around race, ethnicity, and language in the city for nearly all issues.

From June-September 2019, the Boston CHNA-CHIP Collaborative, in conjunction with key stakeholders and community residents, will develop a community health improvement plan that

outlines next steps to address the prioritized health needs from the CHNA. The CHIP development process will commence with a full-day planning session in late June 2019 to develop the initial output for the goals, objectives, and strategies within each priority area. Further refinement and development of the CHIP will occur during the summer 2019, with a final CHIP report and Year 1 Action Planning to be completed by September 2019.

Boston CHNA-CHIP Collaborative

2019 COMMUNITY HEALTH NEEDS ASSESSMENT

Background

Overview of Boston CHNA–CHIP Collaborative

The Boston CHNA-CHIP Collaborative is a new initiative created by a number of stakeholders—community organizations, health centers, community development corporations, hospitals, and the Boston Public Health Commission. It aims to undertake the first large-scale collaborative city-wide Community Health Needs Assessment (CHNA) and Community Health Improvement Planning (CHIP) process. While community health assessment and planning have been long-standing endeavors among individual organizations across the city, the Boston CHNA-CHIP Collaborative intends to leverage, align, and coordinate efforts and resources across multi-sector stakeholders in Boston.

Learn more about the Collaborative at http://www.bostonchna.org/

Prior to launching the first joint community health needs assessment and planning process, the Collaborative undertook an eight-month planning process to define its scope (mission, vision, values, etc.), identify needs for stakeholder representation to outreach to other collaborative partners, define roles and relationships among collaborative partners, establish a recommended governance structure, design an organizational structure, and outline a budget and member contributions.

The Collaborative's **vision** is *a healthy Boston with strong communities, connected residents and organizations, coordinated initiatives, and where every individual has an equitable opportunity to live a healthy life.* Our **mission** is to achieve sustainable positive change in the health of Boston by collaborating with communities, sharing knowledge, aligning resources, and addressing root causes of health inequities. The Collaborative's **goals** are to achieve this mission by engaging with the community to:

- Conduct a joint, participatory community health needs assessment (CHNA) for Boston every three years discussing the social, economic, and health needs and assets in the community.
- Develop a collaborative community health improvement plan (CHIP) for Boston to address issues identified as top priority and identify opportunities for shared investment.

- Implement efforts together where aligned and track individual organizational activities related to those aligned efforts.
- Monitor and evaluate CHIP strategies for progress and impact to continuously inform implementation.
- Communicate about the process and results to organizational leadership, stakeholders, and the public throughout the assessment, planning, and implementation time period.

The work of the Collaborative is guided by the following **shared values:**

Equity

Focus on inequities that affect health with an emphasis on race and ethnicity

Inclusion

Engage diverse communities and respect diverse viewpoints

Data driven

Be systematic in our process and employ evidence-informed strategies to maximize impact

Innovative

Implement approaches that embrace continuous improvement, creativity, and change

Integrity

Carry out our work with transparency, responsibility, and accountability

Partnership

Build trusting and collaborative relationships between communities and organizations to foster sustainable, community-centered change

What is a Community Health Needs Assessment and Community Health Improvement Plan?

This report presents findings from the joint Community Health Needs Assessment (CHNA), which was conducted September 2018–June 2019, and will inform discussions and priority areas for the upcoming CHIP. Figure 1 provides an overview of the CHNA-CHIP process.

A CHNA identifies health-related needs, strengths, and resources of a community through systematic, comprehensive data collection and analysis. A Community Health Improvement Plan (CHIP) is the response to needs identified in the CHNA. The CHIP process involves creating a detailed, evidence-based improvement plan to address the prioritized needs of the community. The Boston CHIP, to be completed by September 2019, will be a three-year plan to identify strategies for action, leverage shared resources, and support policy change to improve the health of Boston residents, especially those most in need.

Figure 1. Community Health Needs Assessment and Community Health Improvement Plan Process
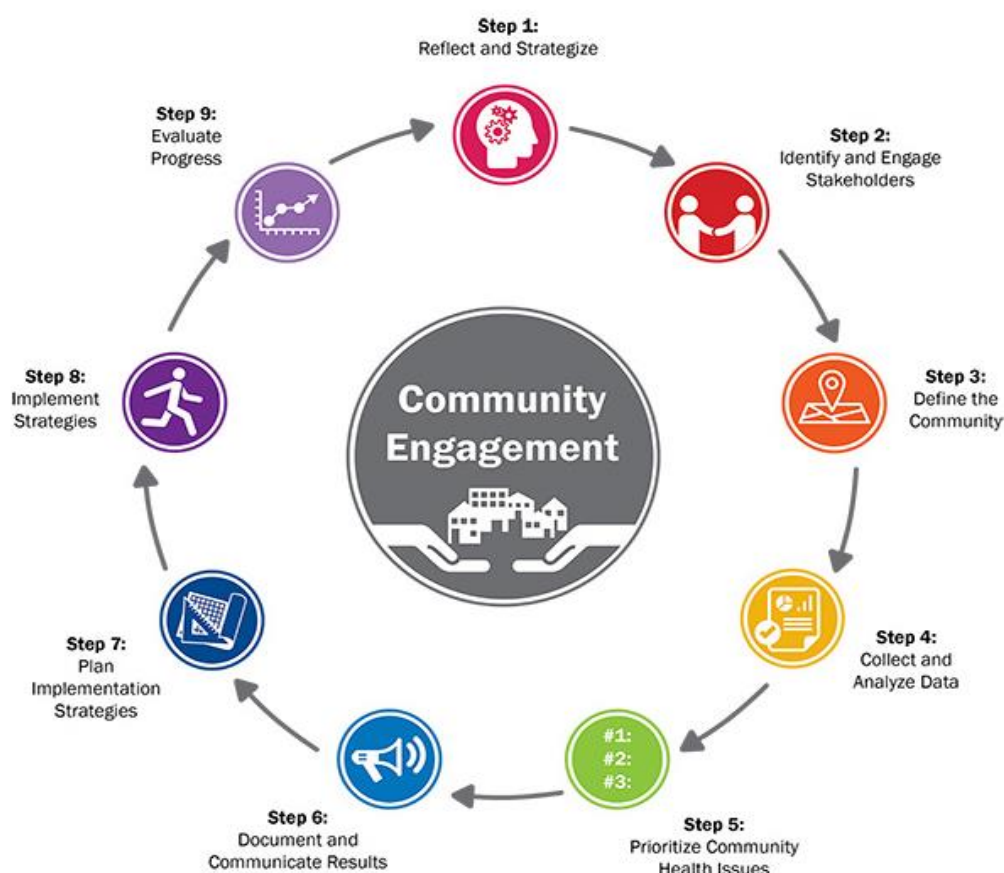
SOURCE: Association for Community Health Improvement, 2017. Community Health Assessment Toolkit. Accessed at www.healthycommunities.org/assesstoolkit

Purpose and Scope of the 2019 Community Health Needs Assessment

In 2018-2019, the Boston CHNA-CHIP Collaborative undertook a city-wide Community Health Needs Assessment to:

- Systematically identify the health-related needs, strengths, and resources of a community to inform future planning,
- Understand the current health status of Boston overall and its sub-populations within their social context, and
- Meet regulatory requirements for a number of institutions, organizations, and agencies (e.g., IRS requirements for non-profit hospitals, PHAB for health departments).

Definition of Community Served

The 2019 Boston CHNA focused on the geographic area of the City of Boston (Figure 2). While Boston is a city of neighborhoods, CHNA data are presented for Boston overall and by different sub-populations where appropriate and available. This includes by neighborhood but also by race/ethnicity, gender, LGBTQ status, income, and other defining characteristics.

Figure 2. Map of Boston Neighborhoods
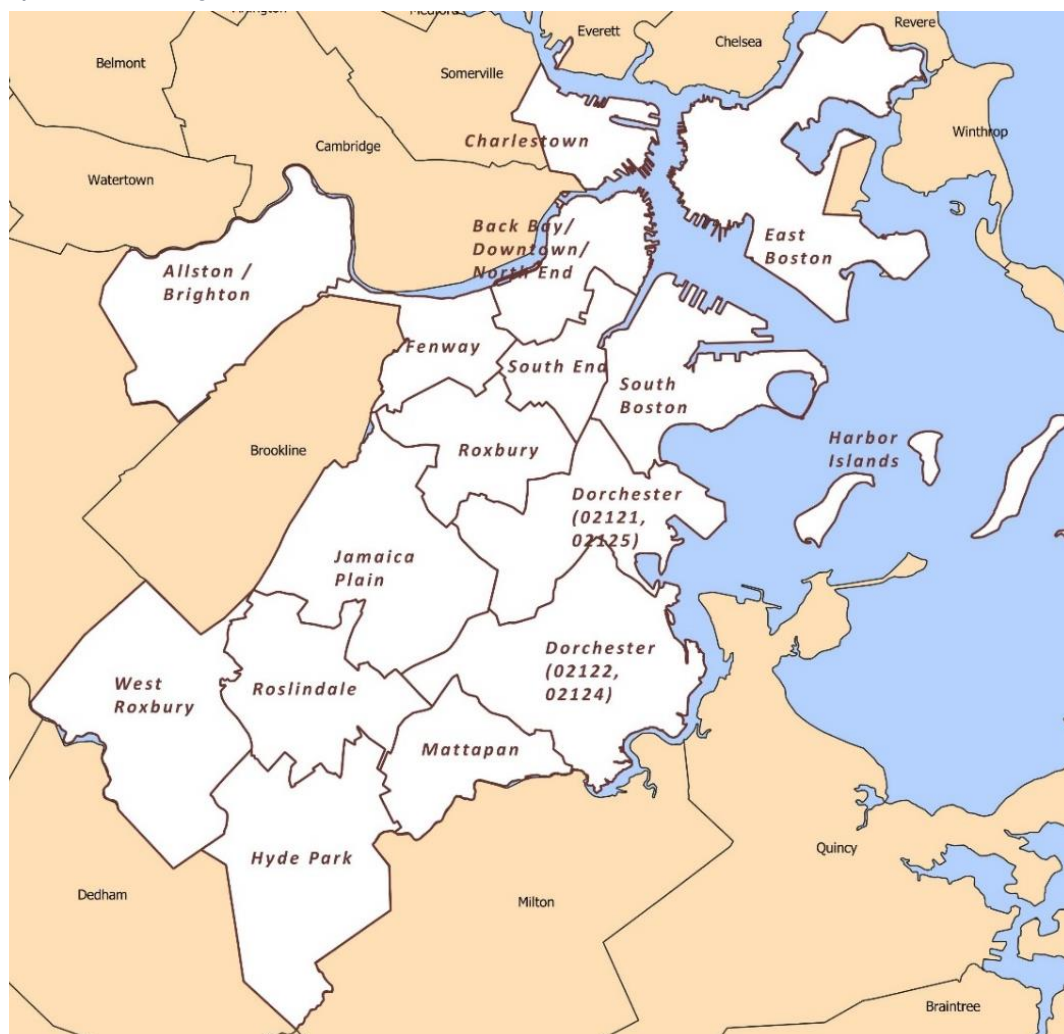
The map above delineates the neighborhood boundaries used in this report. Neighborhoods can be identified in several ways. In this report, consistent with the *Health of Boston 2016-2017*, zip codes are used to identify neighborhood boundaries since this information is collected with health data, and it allows us to standardize data to rates using population estimates which can change over time.

The zip codes used in this report for identifying neighborhoods are those currently used by the United States Postal Service (USPS). USPS zip codes are not based on geography, demographics, or population size; they are collections of mail delivery routes that are defined at the convenience of the U.S. Postal Service and may change from time to time. Data from the U.S.

Census Bureau comes in the form of Zip Code Tabulation Areas (ZCTAs), generalized areal representations of USPS zip code service areas. ZCTA is a trademark of the U.S. Census Bureau whereas ZIP Code is a trademark of the U.S. Postal Service.

With this approach, some neighborhoods are combined to provide a larger area for analysis. Please note that the zip code neighborhood definitions used in this report may differ from those used by other organizations and agencies.

METHODS

The following section details how data for the CHNA were compiled and analyzed, as well as the broader lens used to guide this process.

Social Determinants of Health Framework

Upstream Approaches to Health

Having a healthy population is about more than delivering quality health care to residents. Where a person lives, learns, works, and plays all have an enormous impact on health. Health is not only affected by people's genes and lifestyle behaviors, but by upstream factors such as employment status, quality of housing stock, and economic policies. Figure 3 provides a visual representation of these relationships, demonstrating how individual lifestyle factors, which are closest to health outcomes, are influenced by more upstream factors such as employment status and educational opportunities.

Figure 3. Social Determinants of Health Framework
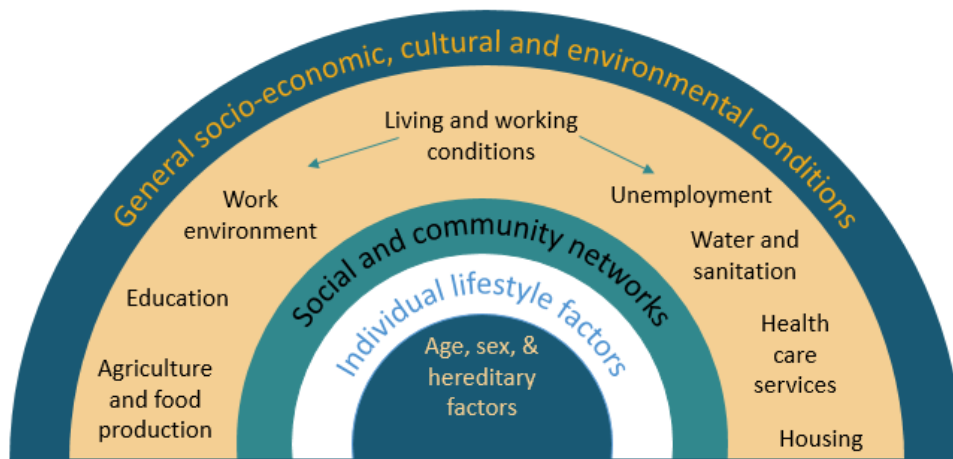
SOURCE: World Health Organization, Commission on the Social Determinants of Health, Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health, 2005.

The data to which we have access is often a snapshot in time, but the people represented by that data have lived their lives in ways that are constrained and enabled by economic circumstances, social context, and government policies. To this end, much of this report is dedicated to discussing the social, economic, and community context in which Boston residents live. Throughout the report, there are descriptions at the beginning of each section discussing why these issues are important and how they affect health (entitled "Why is This Important?"). As such, we hope to understand the current health status of Boston residents and the multitude of factors that influence health to enable the identification of priorities for community health planning, existing strengths and assets upon which to build, and areas for further collaboration and coordination.

Health Equity Lens

When compared to many cities across the country, Boston is a healthy city, with numerous successes to celebrate. However, this is not uniformly the case for all neighborhoods or population groups in Boston, and specific groups consistently experience poor health outcomes. Barriers to the opportunities to live a healthy life may be disproportionately concentrated among certain populations, such as communities of color, low-income populations, homeless persons, persons with disabilities, and the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community.

The influences of race, ethnicity, income, and geography on health patterns are often intertwined. In the United States, social, economic, and political processes ascribe social status based on race and ethnicity, which may influence opportunities for educational and occupational advancement and housing options, two factors that profoundly affect health. Institutional racism, economic inequality, discriminatory policies, and historical oppression of specific groups are a few of the factors that drive health inequities in the U.S.

In the present report, we describe health patterns for Boston overall and areas of need for particular population groups. Understanding factors that contribute to health patterns for these populations can facilitate the identification of data-informed and evidence-based strategies to provide all residents with the opportunity to live a healthy life.

Approach and Community Engagement Process

Collaborative and Work Group Structure

The CHNA aimed to engage agencies, organizations, and residents in Boston through different avenues. As described below, the Collaborative's structure provided the guiding decision-making framework for this work.

Steering Committee

Comprises of 19 members representing hospitals, health centers, Boston Public Health Commission, a public health organization focused on community, community development corporations, and community representatives. Its role is to provide strategic direction and oversight of the process (See APPENDIX A for list of Steering Committee members).

Operations Committee

Comprises of Steering Committee co-chairs and the Collaborative's Coordinator. This Committee resolves operational issues requiring immediate actions.

Work groups

Comprises of general membership. The two Work Groups for the CHNA were open to anyone who was interested in being involved. They provided input and assistance on implementing activities. For the Boston CHNA, these two Work Groups were:

Secondary Data Work Group

Secondary Data Work Group – included 32 members representing a range of organizations, including hospitals, health centers, local public health, and community-based organizations, among others. The Work Group's charge is to provide guidance on secondary data approach and indicators and foster connections with key networks and groups to provide relevant data (See APPENDIX B for list of members).

Community Engagement Work Group

included 54 members representing a range of organizations, including hospitals, health centers, local public health, education, community development, social services, and community-based organizations, among others. The Work Group's charge is to provide guidance on the approach to community engagement, input on primary data collections methods, and support with logistics for primary data collection (See APPENDIX B for list of members).

General Membership

Attends events, shares information, and participates in work groups.

The Collaborative hired Health Resources in Action (HRiA), a non-profit public health organization, as a consultant partner to provide strategic guidance and facilitation of the process, collect and analyze data, and develop the report deliverables.

Work Groups, Engagement, and Outreach

As noted, two work groups—the Community Engagement Work Group and Secondary Data Work Group—provided input and support throughout the CHNA process. The Community Engagement group identified the goals of the community engagement process as 1) to ensure that diverse community voices are represented throughout the CHNA-CHIP process; and 2) to involve community members and stakeholders in the development and implementation of the CHNA-CHIP process to achieve shared ownership of the process and product.

During the CHNA process, the **Community Engagement Work Group** was instrumental in developing the goals and methods for the primary data and the community engagement approach for the CHNA, identifying topics to explore for data collection and population groups that were highest priority, reaching out to community groups and residents for engagement, providing feedback on the survey instrument and focus group and interview guides, and pilot-testing the survey instrument. Members met seven times in a series of virtual and in-person meetings over eight months and were also engaged by email and telephone between meetings to provide feedback throughout the process.

In addition to providing guidance and input on methods, members played an integral role in data collection efforts. Work group members volunteered to conduct interviews, recruit for focus groups, facilitate focus groups, promote surveys through social media and their networks, and administer surveys to respondents. As part of this effort, orientation sessions were offered to work group member volunteers to provide an overview of data collection protocols, including logistics, roles, and best practices.

The **Secondary Data Work Group** members identified the goals of the secondary data as: 1) to examine inequities by population group: by race/ethnicity, gender, age, sexual orientation, socioeconomic status (SES), etc.; 2) to provide a baseline for community health level data to track over time; and 3) to present trends to identify emerging issues or whether there have been changes over time for issues of concern. The Secondary Data Work group approach to the secondary data focused on diving delve deeply into topic areas identified from previous assessments and frame the discussion around the social determinants of health.

The Secondary Data Work Group was instrumental in developing and providing feedback on list of data indicators, identifying potential data sources, and making connections to those sources. Members met six times in a series of virtual and in-person meetings over eight months and were also engaged by email and telephone between meetings to provide feedback throughout the process. The Secondary Data Work Group and Community Engagement Work Group met collaboratively in October 2018 to ensure alignment across methods, and again in late April 2019 for a large-group synthesis of preliminary data. This April 2019 three-hour "Data Day" meeting provided an opportunity to reflect on preliminary data by topic area and collaboratively interpret preliminary data in the form of data placements to inform the draft CHNA report.

Methods: Review of Existing Secondary Data

Secondary data are data that have already been collected for another purpose. Examining secondary data helps us to understand trends, provide a baseline, and identify differences by sub-groups. It also helps in guiding where primary data collection can dive deeper or fill in gaps. While the secondary data for this CHNA cover a wide range of issues, there is a particular focus to dive more deeply into areas already identified in previous assessments (e.g., housing, transportation, income, employment, education, mental health, substance, chronic conditions and their risk factors, violence and trauma, and access to services) as well as frame the discussion comprehensively around the social determinants of health.

Data Sources

Secondary data for this CHNA were from a variety of sources, including the Boston Behavioral Risk Factor Surveillance Survey (BBRFSS), Youth Risk Behavior Survey (YRBS), U.S. Census American Community Survey (ACS), vital records, Acute Hospital Case Mix Database from the Center for Health Information and Analysis, and a number of other agencies and organizations. Please see Appendix C for more technical notes about the most frequently common datasets cited in this report.

Analyses

All secondary data on birth and death records, BBRFSS, YRBS, and Acute Hospital Case Mix were analyzed by the Research and Evaluation Office of the Boston Public Health Commission. Other data were analyzed by the organizations cited in the data source. Analyses are presented as frequencies (percentages) and rates throughout the report. Data from the ACS and surveillance systems, such as the BBRFSS and YRBS, are presented with confidence intervals (or error bars in the figures), where possible. When statistical significance testing was conducted, it is noted in figures or in text. Specifically, when the word "significantly" is used in the text it

connotes statistical significance (p<0.05). Additional information on confidence intervals and significance testing can be found in the Reporting Notes in this section.

Limitations

Each data source for the secondary data has its own set of limitations. Overall, for the data in this report it should be noted that different data sources use different ways of measuring similar variables (e.g., different questions to identify race/ethnicity; different boundaries for neighborhoods). There may be a time lag for many data sources from the time of data collection to data availability. Some data are not available by specific population groups or at a more granular geographic level due to small sub-sample sizes. In some cases, data from multiple years may have been aggregated to allow for data estimates at a more granular level or among specific groups.

It should also be noted that for the datasets used, it is not always possible to examine data in a more granular way. For example, data are examined by race/ethnicity and by neighborhood, but the sample sizes are not large enough to look at data by race/ethnicity within neighborhood in many cases. Additionally, while data are examined by major categories of races and ethnicities (e.g., White, Black, Latino, Asian), it is not possible for many of these data sources to examine data of sub-population groups within these categories (e.g., Chinese descent, Vietnamese descent). Please contact the Boston Public Health Commission Research and Evaluation Office for further consideration of custom health data analysis of specific Boston resident sub-population groups.

Methods: Primary Data Collection

Primary data are new data collected specifically for the purpose of the CHNA. Goals of the Boston CHNA primary data were: 1) to delve deeply into people's perceptions, lived experiences, challenges, and facilitators around certain issues; and 2) to fill in gaps on specific topic areas or population groups where limited data were available. Primary data were collected using three different methods for the Boston CHNA: a community survey, focus groups, and key informant interviews.

Boston CHNA Community Survey

A community survey was developed and administered over six weeks in February-March 2019. The survey focused on a range issues related to the social determinants of health, community perceptions, and access to care and was developed with extensive input from the Community Engagement Work Group and guided by existing validated questions from the field or used in other studies. The survey was pilot-tested in late January 2019, and the final instrument was launched in February 1, 2019 with wider dissemination starting the following week. The survey was administered on-line and via hard copy in seven languages (English, Spanish, Portuguese, Haitian Creole, Chinese, Vietnamese, and Arabic). Extensive outreach was conducted by Collaborative members to disseminate the survey via social media, institutional e-newsletters, e-mails to large networks, waiting rooms, 13 Boston Public Library neighborhood branches, community events, and large apartment buildings. Over 35 organizations assisted with survey dissemination (See APPENDIX D for list of organizations). Additionally, Healthy Community Champions (an initiative of grassroots ambassadors) conducted targeted survey administration in specific neighborhoods.

The final sample of the CHNA Community Survey comprises 2,404 respondents who were Boston residents. Table 1 provides the breakdown of those respondents by self-identified neighborhood of residence and compares the percent distribution of that neighborhood in Boston.

Table 1. Boston CHNA Survey Respondents Distribution by Neighborhood Compared to % of Population in Boston

Neighborhood	# of Survey Respondents (N=2,404)	% of Survey Respondents	% of Population in Boston†
Allston/Brighton	243	10.1%	9.5%
Back Bay	36	1.5%	8.4%
Beacon Hill	24	1.0%	‡
Charlestown	93	3.9%	2.8%
Chinatown	71	3.0%	‡
Dorchester	535	22.3%	21.6%
Downtown	15	0.6%	‡
East Boston	199	8.3%	7.0%
Fenway	80	3.3%	8.2%
Hyde Park	101	4.2%	5.0%
Jamaica Plain	203	8.4%	5.9%
Mattapan	102	4.2%	4.4%
Mission Hill	18	0.8%	‡
North End	10	0.4%	‡
Roslindale	157	6.5%	4.9%
Roxbury	185	7.7%	6.6%
South Boston	85	3.5%	6.0%
South End	120	5.0%	5.2%
West End	30	1.3%	‡
West Roxbury	97	4.0%	4.3%

†DATA SOURCE: U.S. Census, American Community Survey, 5-Year Estimates, 2013-2017
‡NOTE: For ACS data, neighborhoods were defined by Boston Public Health Commission using ZCTAs; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Roxbury includes Roxbury and Mission Hill

Additional data on survey respondent characteristics such as age, education, primary language, gender identity, and other demographic characteristics can be found in APPENDIX E.

Analyses

Frequencies were calculated for each survey question. Not all respondents answered every question; therefore, denominators in analyses reflect the number of total responses for each question and varied by question. Additionally, denominators excluded respondents who selected "prefer not to answer/don't know." For questions that allowed for multiple responses

(i.e., questions that asked respondents to check all that apply), the denominator was out of the total number of respondents who selected at least one response option for the question. Stratified analyses were conducted for select questions by specific sub-groups that had large enough sample sizes. Responses by neighborhood are presented for neighborhoods that had 100 or more respondents to the survey. Chinatown respondents (n=71) were also included in neighborhood-level analyses because secondary data combine Chinatown and South End together in analyses, and thus neighborhood-specific data for Chinatown are not found elsewhere. Sub-group analyses by primary language spoken are also presented in the report; these sub-groups represent respondents who either completed the survey in the specific language or indicated on the survey that it was a primary language that they spoke at home.

Limitations

While strong efforts were made to conduct outreach across the City with a deeper dive within neighborhoods and population groups who experience disproportionate health burden, the community survey used a convenience sample. Because a convenience sample is a type of non-probability sampling, there is potential selection bias in who participated or was asked to participate in the survey. Due to this, results cannot necessarily be generalized to the larger population. Additionally, some sub-group analyses consist of very small sub-sample sizes, these sub-group analyses are still presented in the report for population groups where data are limited from other sources (e.g., Haitian Creole speakers, non-binary and transgender individuals, etc.); however, given the small sub-sample sizes and convenience sampling methodology, results should be interpreted with caution.

Focus Groups and Key Informant Interviews

Focus Groups

Thirteen focus groups were conducted with specific populations of interest: 12 focus groups conducted specifically for the collaborative CHNA and one additional focus group conducted by work group members who submitted notes for the CHNA. Focus groups were 90-minute semi-structured conversations with approximately 8-12 participants per group and aimed to delve deeply into community's needs, strengths, and opportunities for the future. Focus groups were conducted with the following population groups, including residents of specific neighborhoods:

- Female low-wage workers (e.g. housekeepers, child care workers, hotel service workers, etc.)
- Male low-wage workers (e.g. janitorial staff, construction, etc.)
- Seniors (ages 65+) with complex, challenging issues (e.g. homebound, medical complications)
- Residents who are housing insecure (no permanent address or close to eviction)
- Latino residents in East Boston (in Spanish)
- LGBTQ youth and young adults at risk of being homeless
- Immigrant parents of school age children (5-18 years)
- Survivors of violence; mothers who have been impacted by violence
- Parents who live in public housing in Dorchester
- Chinese residents living in Chinatown (in Chinese)
- Haitian residents living in Mattapan (in Haitian Creole)
- Residents in active substance use recovery
- Additional focus group with notes provided: Chinese residents living in Chinatown

A total of 104 community residents participated in focus groups, representing 13 neighborhoods across the city. Nearly half of focus group participants identified as Black or African American (45%), a third of participants identified as Hispanic or Latino (34%), and 10% identified as White. The majority of participants identified as female (57%), 36% identified as male, and 7% identified as transgender or genderqueer. Additional data on focus group participant characteristics can be found in Appendix F. Fifteen community and social service organizations located throughout Boston assisted with recruiting participants and/or hosting focus groups (See APPENDIX G for list of organizations).

Key Informant Interviews

A total of 45 key informant interviews were completed, six of which were additional interviews submitted by work group volunteers. Interviews were 45-60-minute semi-structured discussions that engaged institutional, organizational, and community leaders and front-line staff across sectors. Discussions explored interviewees' experiences of addressing community needs and opportunities for future alignment, coordination, and expansion of services, initiatives, and policies. Sectors represented in these interviews included: public health, health care, housing and homelessness, transportation, community development, faith, education, public safety, environmental justice, government, workforce development, social services, food insecurity, business organizational staff that work with specific population such as youth, seniors, disabled, LGBTQ, and immigrants. See APPENDIX H for a list of key informant interviewees.

Analyses

The collected qualitative information was coded using NVivo qualitative data analysis software and then analyzed thematically by data analysts for main categories and sub-themes. Analysts identified key themes that emerged across all groups and interviews as well as the unique issues that were noted for specific populations. Throughout the qualitative findings included in this report, the term "participants" is used to refer to focus group and key informant interview participants. Unique issues that emerged among a group of participants are specified as such (e.g., Spanish-speaking focus group participants, etc.). Frequency and intensity of discussions on a specific topic were key indicators used for extracting main themes. While neighborhood differences are noted where appropriate, analyses emphasized findings common across Boston. Selected paraphrased quotes—without personal identifying information—are presented in the narrative of this report to further illustrate points within topic areas.

Limitations

There were multiple moderators for the focus groups—particularly for non-English language groups—and interviews were conducted by both HRiA and work group members. Therefore, there is likely variation in how interview and focus group protocols were interpreted and implemented. Focus groups also ranged in size and varied in group dynamics. Additionally, while focus groups and interviews provide valuable insights and important in-depth context, due to their small sample size and non-random sampling methods, results are not necessarily generalizable.

Reporting Notes

Confidence Intervals

For Boston Behavioral Risk Factor Surveillance Survey data, which represents a sample of residents, many graphs provide 95% confidence intervals to give a sense of how accurate the result is considered as a measurement for the entire population (i.e., how much sampling error exists for a given percentage or point estimate). Smaller confidence intervals indicate less sampling error and greater data precision than larger confidence intervals. Error bars are used in the graphs to show the confidence intervals, indicating the range in which we believe the true value of the population lies.

Testing for Significant Difference

Tests for statistical significance were conducted to compare different data points by sub-groups or over time. The tests for statistical significance were conducted either against a reference group (e.g., Asian, Latino, and Black residents compared to White residents), against the Boston average or for a neighborhood against the rest of Boston (Boston overall minus the population of that specific neighborhood), comparing the difference in distribution of responses to question categories among sup-populations, or examining differences in time points. If there is a statistically significant difference between groups or data points, where the p<0.05, then this indicates that there is less than a 5% chance that there is no difference between the data points, providing stronger evidence that any differences we see are not just due to chance.

In this report, tests for significance are noted in the table or graph notes, while the narrative uses the words "significant" or "significantly" to note where there are statistically significant differences when testing has been completed.

Terminology

Numerous terms are used throughout the report for different population groups. For race/ethnicity, the terms White, Black, Latino, and Asian are used for brevity in graphs and narrative. Since Latino is considered an ethnicity, when the terms White, Black, and Asian are used, this indicates residents identifying as White, Black, or Asian who do not also identify as Latino. For the terms used for different racial/ethnic groups, Asian refers to individuals in the data that, if asked for more specific designations, self-identified as Asian Indian, Cambodian, Chinese, Filipino, Japanese, Korean, Vietnamese or of other Asian descent. Black refers to individuals in the data that self-identified as African American, Barbadian, Cape Verdean, Ethiopian, Haitian, Jamaican, Nigerian, Somali, or other sub-Saharan African descent. Latino refers to individuals in the data that self-identified as Mexican or Mexican American, Salvadoran, Puerto Rican, Dominican, Cuban, Colombian, Guatemalan, Honduran, or other Central or South American descent. White refers to individuals in the data that self-identified as European, Middle Eastern, or North African descent.

The term LGBTQ is used in the report to refer to individuals that self-identified as lesbian, gay, bisexual, transgender, or queer.

POPULATION CHARACTERISTICS – WHO LIVES IN BOSTON?

Population Overview

Why is This Important?

The population profile of a community, including density, patterns of growth and age distribution, are important factors that inform our understanding of a community's health and health care needs. A neighborhood in which many aging baby boomers reside, for example, will have different health challenges and needs than one populated predominantly by college students or young families.

Key Findings in This Section

With a current population of nearly 670,000 residents, Boston has experienced—and is expected to continue to experience—population growth. Growth rates across neighborhoods vary. Roxbury, South Boston, Hyde Park, East Boston, and Charlestown, for example, have all experienced double digit increases in population over the past five years, while Fenway and the South End have seen far more modest growth. Overall, the city is a young one, with about one-third of residents under age 24. There is substantial variation in age profiles across neighborhoods however: Dorchester, Hyde Park, Mattapan, and Roslindale have the highest proportion of residents under age 18, while Back Bay and West Roxbury have the highest proportion over age 65.

Population Count and Characteristics

The most current figures from the 2013-2017 American Community Survey show that Boston has 669,158 residents (Table 2), a population that has grown 8% in the last several years. According to the Boston Planning and Development Agency (BPDA), Boston's population is projected to continually grow at that rate—to 723,500 people by 2030.[1] In the last several years, the population of the city has increased in all neighborhoods. While the population increase citywide has been about 8%, population increases in Roxbury, South Boston, Hyde Park East Boston, and Charlestown were more than double digits, ranging from almost 11%-17%, from 2008-2012 to 2013-2017.

Table 2. Total Population, by Boston and Neighborhood, 2008–2012 and 2013–2017

	2008–2012	2013–2017	% population change 2012 to 2017
Boston	619,662	669,158	8.0%
Allston/Brighton	61,159	63,270	3.5%
Back Bay	51,735	55,635	7.5%
Charlestown	17,052	18,901	10.8%

	2008–2012	2013–2017	% population change 2012 to 2017
Dorchester (02121, 02125)	58,797	63,733	8.4%
Dorchester (02122, 02124)	75,304	79,717	5.9%
East Boston	41,680	46,655	11.9%
Fenway	52,897	54,267	2.6%
Hyde Park	29,219	33,084	13.2%
Jamaica Plain	36,866	39,435	7.0%
Mattapan	27,335	29,141	6.6%
Roslindale	30,370	32,819	8.1%
Roxbury	37,454	43,871	17.1%
South Boston	34,452	39,866	15.7%
South End	34,395	34,777	1.1%
West Roxbury	27,163	28,505	4.9%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2008-2012 and 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Boston population count includes some areas that are not covered by neighborhood definitions per ZCTAs

Boston's population represents a range of age groups, but the distribution of these ages varies across neighborhoods. Hyde Park, Dorchester, East Boston, Mattapan, Roslindale, and West Roxbury have the largest population proportions (over 20%) of children under 18 years old (Figure 4). Fenway has a smaller percentage of children, but nearly six in ten of its population is 18-24 years old. West Roxbury is the neighborhood with largest distribution of older residents 65+ years old at 18.7%. (See APPENDIX I for further granular breakdowns of the under 18 year old and 65+ year old categories within each neighborhood.)

Figure 4. Age Distribution, by Boston and Neighborhood, 2013–2017
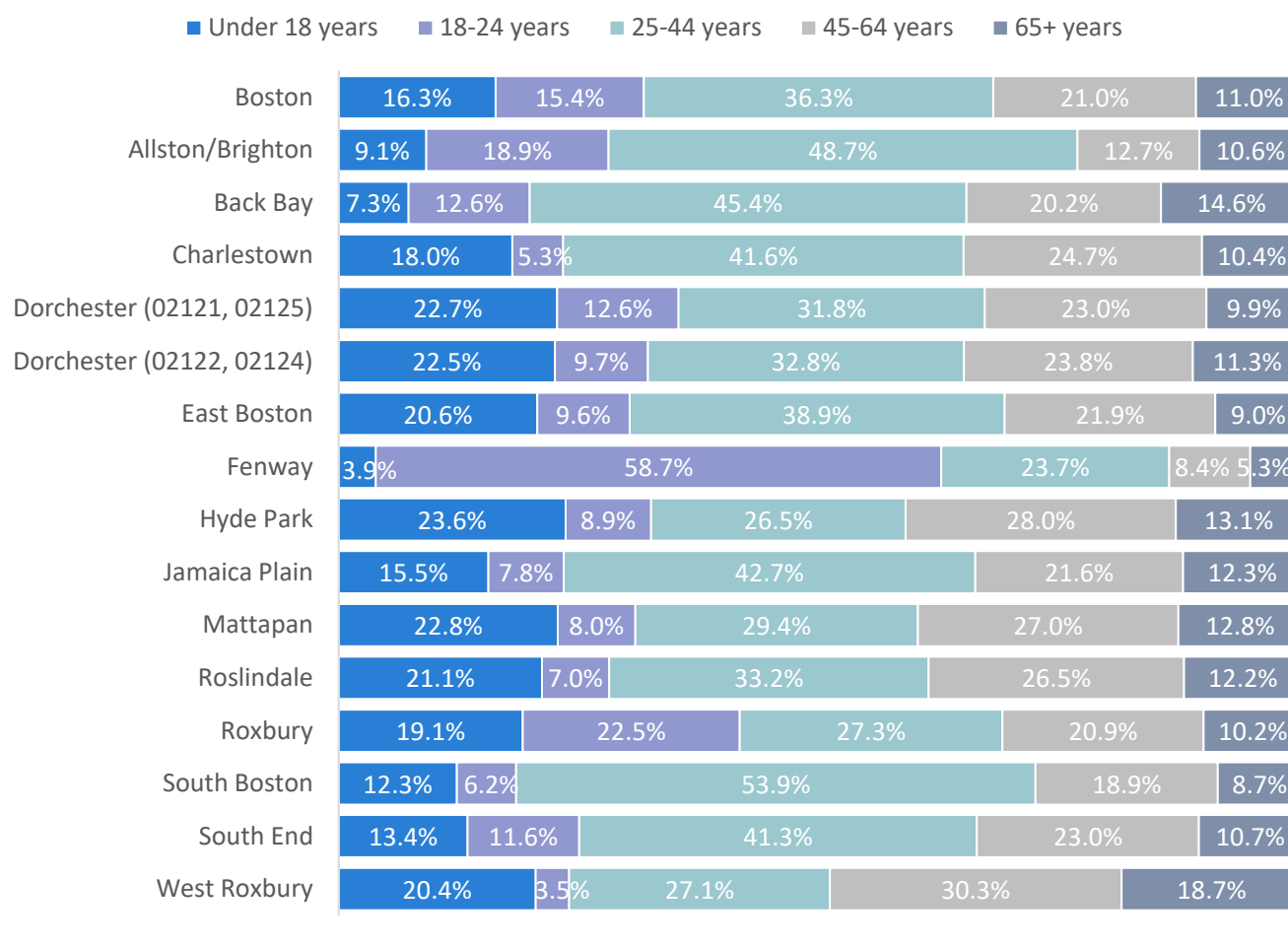
■ Under 18 years ■ 18-24 years ■ 25-44 years ■ 45-64 years ■ 65+ years

Neighborhood	Under 18 years	18-24 years	25-44 years	45-64 years	65+ years
Boston	16.3%	15.4%	36.3%	21.0%	11.0%
Allston/Brighton	9.1%	18.9%	48.7%	12.7%	10.6%
Back Bay	7.3%	12.6%	45.4%	20.2%	14.6%
Charlestown	18.0%	5.3%	41.6%	24.7%	10.4%
Dorchester (02121, 02125)	22.7%	12.6%	31.8%	23.0%	9.9%
Dorchester (02122, 02124)	22.5%	9.7%	32.8%	23.8%	11.3%
East Boston	20.6%	9.6%	38.9%	21.9%	9.0%
Fenway	3.9%	58.7%	23.7%	8.4%	5.3%
Hyde Park	23.6%	8.9%	26.5%	28.0%	13.1%
Jamaica Plain	15.5%	7.8%	42.7%	21.6%	12.3%
Mattapan	22.8%	8.0%	29.4%	27.0%	12.8%
Roslindale	21.1%	7.0%	33.2%	26.5%	12.2%
Roxbury	19.1%	22.5%	27.3%	20.9%	10.2%
South Boston	12.3%	6.2%	53.9%	18.9%	8.7%
South End	13.4%	11.6%	41.3%	23.0%	10.7%
West Roxbury	20.4%	3.5%	27.1%	30.3%	18.7%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

Racial, Ethnic, Cultural, and Language Diversity

Why is This Important?

The United States is becoming increasingly diverse racially and ethnically. The nation is projected to become a "minority-majority" society by 2043, one in which White (non-Latino) residents will be the largest racial and ethnic group, but will constitute less than half of the population.[2] At the same time, disparities in health and health care access across different racial and ethnic groups are persistent challenges. People of color experience poorer health outcomes and greater barriers to accessing health care compared to whites and have lower utilization of health care resources.[3] Understanding the racial, ethnic, cultural and language profiles of Boston residents helps to provide context to data about health status and the structural, discriminatory, and social factors that contribute to health inequities.

Key Findings in This Section

Boston is a diverse city with 23% of residents identifying as Black, nearly 20% identifying as Latino, and nearly 10% identifying as Asian. Boston has a large immigrant community, with most immigrants in the city having been born in the Caribbean or Asia. One-third of residents speak a language other than English at home, the most prevalent language being Spanish. Diversity among younger residents is greater than among older residents, and at the neighborhood level, diversity varies substantially. Black residents comprise a larger portion of the population in Roxbury, Hyde Park, and Dorchester and Mattapan, while Latino residents comprise over half the population of East Boston; the South End, Fenway, and Allston/Brighton have the highest proportion of Asian residents in the city. Between 2012 and 2017, Latino residents experienced the largest population growth of all racial and ethnic groups.

Boston Language Diversity

Nearly 4 in 10 Boston residents speak a language other than English at home.

Racial and Ethnic Composition

Focus group and interview participants engaged in the assessment described their communities as richly diverse, mentioning wide racial, cultural, and linguistic diversity. As one key informant interviewee noted, *"Multiculturalism is one of Boston's strengths; it facilitates connections and bridges gaps in an organic way."* Focus group participants, particularly those from non-English groups—identified diversity as a strength of their communities, but also noted that new communities faced barriers with social and economic factors as well as navigating the health care system. These themes are discussed at greater length in other sections of this report.

Multiculturalism is one of Boston's strengths; it facilitates connections and bridges gaps in an organic way. — From a key informant interviewee

Data show that Boston is a diverse city, but population composition by race and ethnicity varies by neighborhoods (Table 3). While more than one in five Boston residents (22.7%) identify as Black, in neighborhoods such as Roxbury, Hyde Park, and Dorchester the percentage is 40-50%, while Black residents comprise 77.2% of the population of Mattapan. Nearly 20% of the Boston population identifies as Latino, yet 57.4% of East Boston's population and 27.3% of Roxbury's population is Latino. Additionally, while Boston's overall population increased by 8% in the last several years, Latino residents experienced a growth of 20.1% (See APPENDIX I for data over time). Asian residents are nearly 10% of Boston's population, but 23% of the population in the South End (which also includes Chinatown here), and approximately 18% of both Fenway and Allston/Brighton's populations.

Table 3. Racial and Ethnic Distribution, by Boston and Neighborhood, 2013–2017

	Asian	Black	Latino	White	Other
Boston	9.4%	22.7%	19.4%	44.9%	3.6%
Allston/Brighton	17.7%	4.9%	11.7%	61.7%	8.6%
Back Bay	10.6%	4.1%	6.8%	76.1%	2.4%
Charlestown	7.2%	5.8%	11.8%	73.2%	2.0%
Dorchester (02121, 02125)	6.7%	44.8%	24.6%	17.5%	6.5%
Dorchester (02122, 02124)	9.9%	49.0%	14.8%	21.6%	4.7%
East Boston	3.8%	2.6%	57.4%	32.6%	3.7%
Fenway	18.3%	5.6%	12.9%	60.0%	3.2%
Hyde Park	2.1%	42.2%	27.1%	25.1%	3.4%
Jamaica Plain	6.7%	10.6%	21.8%	56.8%	4.0%
Mattapan	NA	77.2%	15.0%	4.2%	2.8%
Roslindale	2.2%	21.4%	24.5%	48.9%	3.0%
Roxbury	8.3%	40.8%	27.3%	20.0%	3.7%
South Boston	4.8%	5.9%	10.2%	77.5%	1.6%
South End	23.0%	11.7%	16.6%	45.8%	2.8%
West Roxbury	6.7%	5.6%	7.9%	77.8%	2.0%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Latino includes residents who identify as Latino regardless of race and racial categories include residents who do not identify as Latino; Other includes American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some other race, and Two or more races; NA denotes where data not presented due to insufficient sample size

The Boston Public School (BPS) system is even more diverse than the city overall. Of the 52,665 students in BPS in 2018, nearly 42% identify as Latino and 32% as Black. Table 4 presents student enrollment data for BPS by race/ethnicity over time. Trend data provided APPENDIX I indicate that distribution by race/ethnicity has been similar since 2014.

Table 4. Number of Boston Public School Enrolled Students and Percent, by Race/Ethnicity, 2014–2018

	2014	2015	2016	2017	2018
Total	54,300	54,312	53,530	53,263	52,665
Asian	8.6%	8.5%	8.7%	8.8%	9.0%
Black	34.5%	33.6%	32.4%	31.8%	31.5%
Latino	40.4%	40.9%	41.5%	41.8%	41.9%
White	13.6%	13.8%	14.2%	14.2%	14.2%
Other	11.5%	11.7%	11.9%	12.2%	12.4%

DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Trends - DART, 2014-2018
NOTE: Other includes Native American, Native Hawaiian or Pacific Islander, and Multi-race

Language Diversity

Boston is a city of many languages. Nearly 38% of residents speak a language other than English at home (Figure 5), and those figures are significantly higher for East Boston, Dorchester (zip codes 02121, 02125), Roxbury, Hyde Park, and the South End (which includes Chinatown) compared to Boston overall. Given this diversity, many indicators from the Boston CHNA survey are provided later in this report by primary language spoken. Boston's language diversity was considered a major strength of the city, according to focus group participants, especially those who were non-English speakers. Several participants discussed belonging to *"tight-knit"* cultural groups where residents could speak freely in their native language. For example, one focus group participant from Chinatown shared, *"There are many Chinese speaking residents [in Chinatown], and it's easy for someone who mainly speaks Chinese to live here."* Similarly, in East Boston, one participant expressed, *"There are a lot of Latinos that speak Spanish here and I'm grateful that they can help me navigate services."* Non-English focus group participants reported that for the most part, they were able to access some community resources in their native language; however, they also reported experiencing much longer wait times for these services. One resident explained, *"I do not speak English, so I [usually] wait 1-2 hours for any social services."*

Figure 5. Percent Population 5 Years and Over Who Speak a Language Other Than English, by Boston and Neighborhood, 2013–2017

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes where the neighborhood estimate is significantly different compared to the Boston estimate (p<0.05); Error bars show 95% confidence interval

Spanish, French/Haitian Creole/Cajun, other Indo-European languages (e.g., Portuguese, Italian), and Chinese are the most commonly spoken languages in Boston other than English. Table 5 indicates which languages are most common in specific neighborhoods among non-English speakers. APPENDIX I provides additional data on languages spoken in Boston.

Table 5. Most Common Language Other Than English Spoken and Percent Population 5 Years and Over Who Speak the Language, by Neighborhood, 2013–2017

	Most Common Language Spoken	Percent
Allston/Brighton	Chinese (inclu. Mandarin, Cantonese)	9.3%
Back Bay	Chinese (inclu. Mandarin, Cantonese)	5.8%
Charlestown	Spanish	10.2%
Dorchester (02121, 02125)	Spanish	21.6%
Dorchester (02122, 02124)	Spanish	12.5%
East Boston	Spanish	55.2%
Fenway	Spanish	10.4%
Hyde Park	Spanish	22.6%
Jamaica Plain	Spanish	18.8%
Mattapan	French, Haitian Creole, or Cajun	18.2%
Roslindale	Spanish	21.5%
Roxbury	Spanish	25.3%
South Boston	Spanish	8.9%
South End	Chinese (inclu. Mandarin, Cantonese)	16.5%
West Roxbury	Spanish	5.4%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

APPENDIX I includes additional data on the linguistic diversity of Boston Public School students.

Immigration

Key informant interviewees and focus group participants described a robust immigrant community in Boston. Shared cultural beliefs and values such as hard work and devotion to one's family were described as strengths of these communities by participants. For example, immigrant residents from Mattapan shared, "*Haitians work hard and are very active; our community gives a great contribution in the work force and professional. They move the economy forward and are trust worthy.*" Interviewees noted that immigrants also face substantial challenges in accessing various systems in the U.S. due to language and cultural differences. Health care and social service providers shared that the diversity of immigrant and refugee groups in the community creates challenges for services to reach everyone effectively.

Further, several focus group participants also noted that the city is home to a number of undocumented residents; undocumented residents were described as facing substantial barriers to accessing health and other services, and were particularly vulnerable in the current political

climate. One key informant shared, *"With immigration policy, [residents] worry that applying for government benefits will impact their legal status. Some people are not willing to apply anymore."* One focus group participant who identified as undocumented described obstacles in almost every facet of her life, sharing, *"People like me can't get things like cable or anything that gives you a better quality of life because I don't have a social security. If you don't have a social security, you can't access anything; I don't even trust banks, so I don't have any accounts."*

As focus group and interview participants noted, Boston's immigrant community is strong. While over 28% of Boston residents were born outside the United States, that figure is significantly higher in neighborhoods such as East Boston, Dorchester, and Mattapan (Figure 6). Those born outside the United States were most likely to come from the Caribbean (29.1% of foreign-born residents) and Asia (26.0% of foreign-born residents) (See APPENDIX I for additional data).

Figure 6. Percent Foreign Born Population, by Boston and Neighborhood, 2013–2017
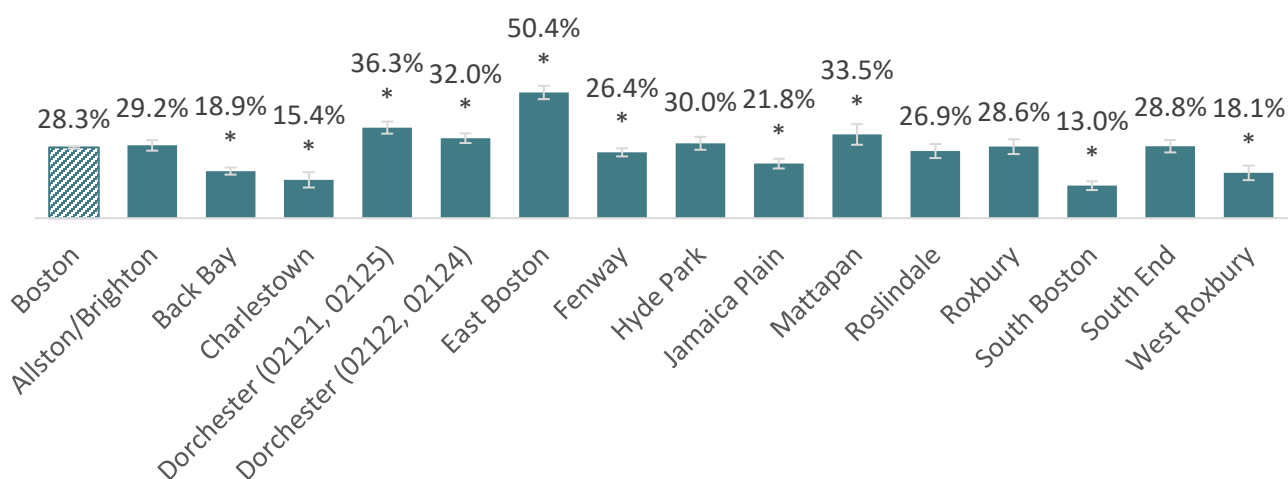
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk denotes where the neighborhood estimate is significantly different compared to the Boston estimate (p<0.05); Error bars show 95% confidence interval

Immigration and citizenship status have been themes both in the national policy dialogue and in focus group discussions with immigrant communities in Boston. Data indicate that 14.5% of Boston residents are naturalized residents, while 9.0% are documented foreign-born residents and 5.5% are undocumented foreign-born residents (See APPENDIX I). In qualitative discussions, participants mentioned the need for outreach and services to undocumented residents. The Mayor's Office for Immigrant Advancement (MOIA) provides pro-bono immigration advice clinics to residents of Boston. Between 2015 and 2017, there were a total of 1,356 clinics held, with about 19 attendees per clinic. Of these clinics, nearly half of the cases (48%) have focused on family-based immigration issues, by the far the biggest focus area of the clinics (See APPENDIX I).

Education

Why is This Important?

Education affects health in multiple ways. Individuals of lower educational attainment generally have less favorable health profiles compared to their counterparts with greater educational attainment.[4] Most directly, education increases economic and social resources.[5] Those with higher levels of education are less likely to experience unemployment and economic hardship and have more social connections than those with lower levels. Those with lower levels of education are more likely to be engaged in jobs that are lower paying or unstable, lack employer-provided health insurance benefits, or that are more risky or unsafe. Research has also found that adults with higher educational levels have higher levels of health literacy, causing them to better comprehend medical instructions, understand medications, and advocate for themselves with health providers than their counterparts with lower educational attainment.[6] Inequities in educational funding and unequal access to key educational resources, including skilled teachers and quality curriculum, are concentrated in low-income communities and communities of color and are interconnected with the unequitable and discriminatory housing and neighborhood polices these same communities experience.[7]

Key Findings in This Section

Education was viewed by Boston CHNA survey respondents as a key component of a healthy community. While statistics point to a well-educated community (nearly half of Boston adults have a college degree or more), there are substantial differences across racial and ethnic groups, with a high proportion of White and Asian adults with college degrees or more and far fewer Black and Latino adults. Over a quarter of Latino adults in Boston do not have a high school diploma. Echoing comments shared in focus groups and interviews, data from the Boston Public Schools show that over three-quarters of students are deemed high needs, defined as either being low income, economically disadvantaged, being a current or former English Language Learner, or having a disability. Differences in educational quality and resources across Boston neighborhoods was an issue raised by many focus group participants and interviewees, and were concerns within the same communities experiencing economic, housing, and employment challenges as well.

> "When it comes to kids in elementary [school], one of the bigger challenges becomes feeling like you have to luck out to get into a good school. It's a lottery, and if you're able to tour and make informed choices you are not guaranteed a slot at the school. The older the children get, the more challenging it is finding quality education in the city." — Key informant interviewee

Educational Attainment

Among residents engaged in CHNA data collection, education was an important factor to them. As discussed later in this report, when Boston CHNA Survey respondents were asked what defines a "healthy community", education was the most fifth most cited factor in a list of 20 provided with 45% it as an important defining characteristic of their ideal healthy community. Similarly, focus group participants connected educational attainment with health outcomes in their communities and perceived that increasing opportunities for educational achievement

ultimately leads to healthier communities. A few key informants described education in Boston as a strength, mentioning a rich history of public education and increased efforts for structural commitments to support student's social-emotional needs.

Overall, Boston is a highly educated city with nearly half of adults (48.2%) ages 25 years old or older holding a college degree or more. However, there are stark differences by race/ethnicity and by neighborhood. Nearly seven in ten White residents hold a college degree, while only two in ten Black and Latino residents do (Figure 7). Nearly six in ten Asian residents hold a college degree. With 26.1%, Latino adult residents are most likely to not have a high school diploma. Only 4% of White adult residents do not hold a high school diploma, while the figure is 18% among Asian adult residents and 15% among Black residents.

By neighborhood, East Boston, Roxbury, Dorchester, and the South End have a significantly greater proportion of residents who do not have a high school diploma compared to Boston overall (Figure 8). Data on other educational attainment categories by neighborhood can be found in APPENDIX I.

Figure 7. Educational Attainment for Population 25 Years and Over, by Boston and Race/Ethnicity, 2017

Legend: ■ Less than HS diploma ■ HS graduate ■ Some college/ Associate's degree ■ Bachelor's degree or more

	Boston	Asian	Black	Latino	White
Bachelor's degree or more	48.2%	56.8%	20.2%	20.5%	70.1%
Some college/ Associate's degree	18.3%	11.6%	30.6%	21.3%	12.4%
HS graduate	21.4%	13.7%	33.9%	32.1%	13.2%
Less than HS diploma	12.0%	18.0%	15.3%	26.1%	4.2%
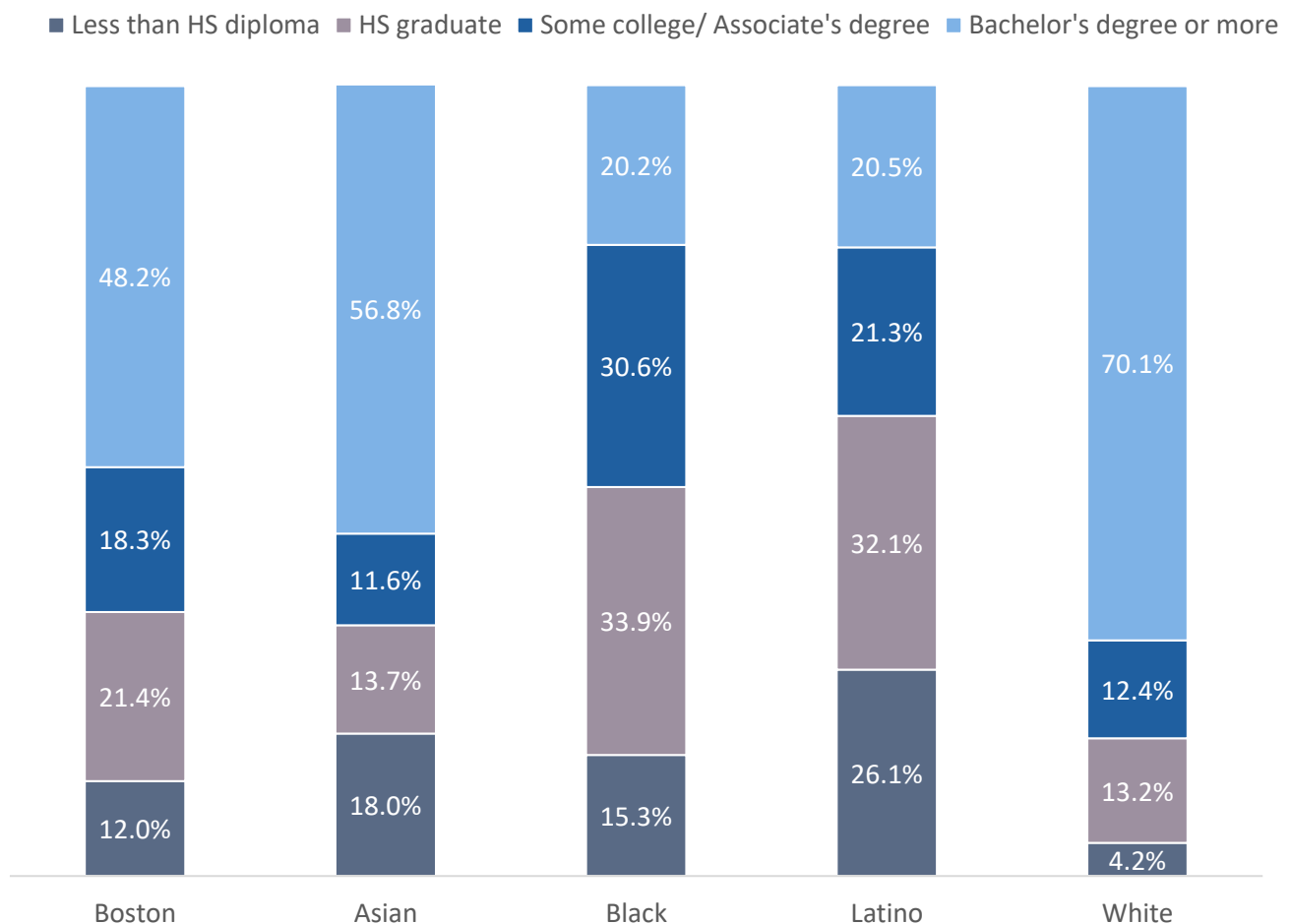
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017

Figure 8. Percent Population 25 Years and Over with Less Than High School Diploma, by Boston and Neighborhood, 2013–2017
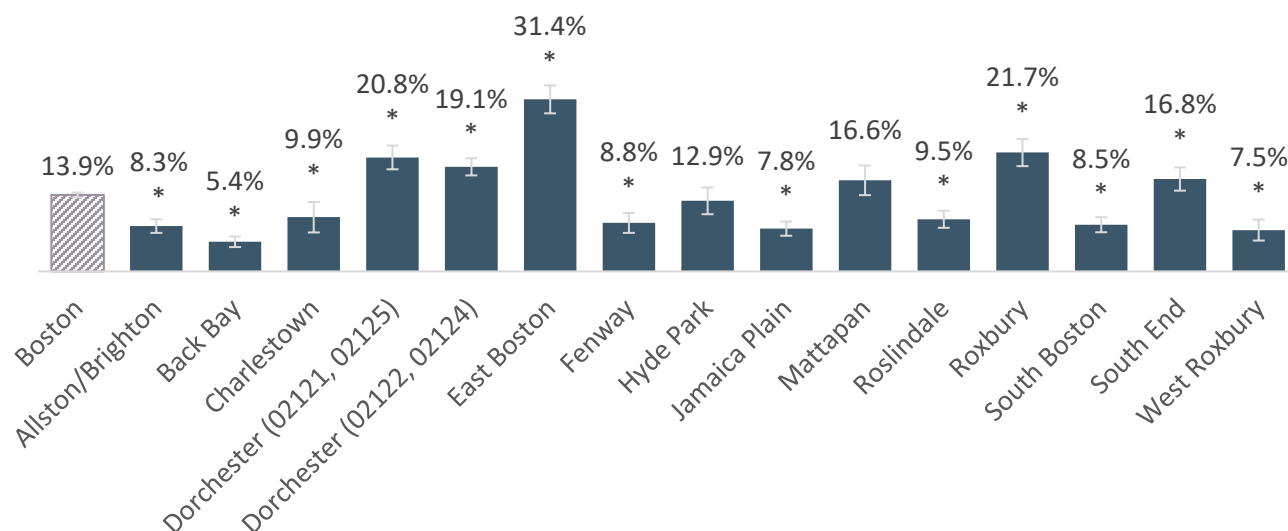
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

School-Age Students

Addressing the educational needs of specific population groups was an issue discussed in several focus groups and interviews. Children with special needs, undocumented students, and those who have experienced trauma were identified as groups that needed more support in and outside of the classroom. For example, parents in Chinatown discussed challenges receiving adequate special education resources. One shared, *"My kid needs speech therapy; he's getting one hour per week with the speech therapist and I requested increased services but was denied. I wish the school provided more resources for special education."* When discussing strategies to address trauma, one key informant shared, *"We need early interventions that have wrap around service models; we need individual counseling, family therapy, a parent advocate…we need interventions at multiple levels."*

As such, the student population in Boston Public Schools is diverse in their needs. Figure 9 shows that 32.1% of BPS students are considered English Language Learners, defined as a student whose first language is a language other than English and who is unable to perform ordinary classroom work in English, 20.3% are students with disabilities, and 56.5% are considered economically disadvantaged. Altogether, 76.2% of BPS students are deemed high needs, as either being low income, economically disadvantaged, being a current or former English Language Learner, or having a disability.

Figure 9. Percent Boston Public School Students Enrolled, by Selected Sub-Populations, 2019
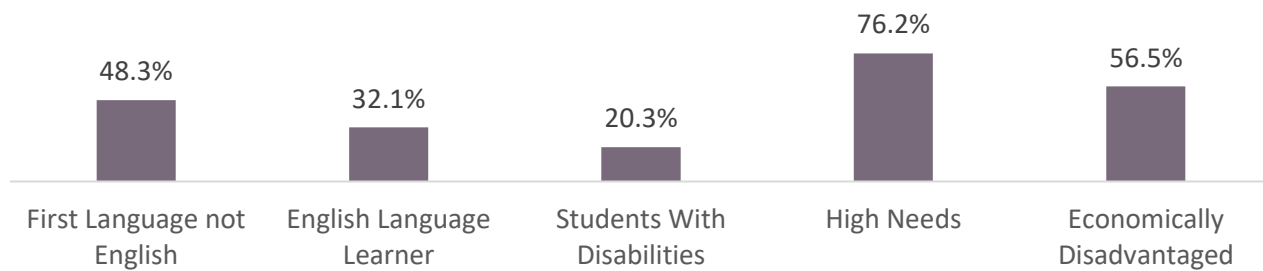
DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Selected Populations, 2019
NOTES: Years represent school years (e.g., 2014 represents school year 2013-2014); First Language not English indicates the percent of enrollment whose first language is a language other than English; English Learners indicates the percent of enrollment who are English learners, defined as 'a student whose first language is a language other than English who is unable to perform ordinary classroom work in English;' Economically disadvantaged is determined based on a student's participation in one or more of the following state-administered programs: the Supplemental Nutrition Assistance Program (SNAP), the Transitional Assistance for Families with Dependent Children (TAFDC), the Department of Children and Families' (DCF) foster care program, and MassHealth (Medicaid); High needs is defined as students designated as either low income (prior to School Year 2015), economically disadvantaged (starting in School Year 2015), or ELL, or former ELL, or a student with disabilities

Chronic absenteeism—defined as students who are absent 10% or more of their total number of student days of membership in a school—was a concern among parents and those in the educational field. Key informant interviewees in the field discussed how chronic absenteeism is of particular concern among children from families who are homeless or with parents who have substance use disorders or co-occurring mental health issues. One interviewee shared, "*Kids are missing a lot of academic time and school days because they are placed in shelters and then transported somewhere else; kids are sometimes commuting an hour and a half each way to school...*" Interviewees indicated that children who have experienced trauma are more likely to miss school or become disengaged when they are in school. There were suggestions for more trainings that focus on trauma-informed approaches to teaching.

> "Being trauma-informed in education means knowing what to look for [trauma symptoms] and being able to respond accordingly. Because your response as a provider or a teacher can either make or break how kids are engaged in services." — Key informant interviewee

Figure 10 presents data from BPS on students who are chronically absent. About one-quarter (25.5%) of all BPS students from the 2017-2018 school year were identified as chronically absent. The proportion is over 30% for students who are economically disadvantaged, have a disability, or who identify as Latino or American Indian.

Figure 10. Percent Boston Public School Students Chronically Absent, 2018
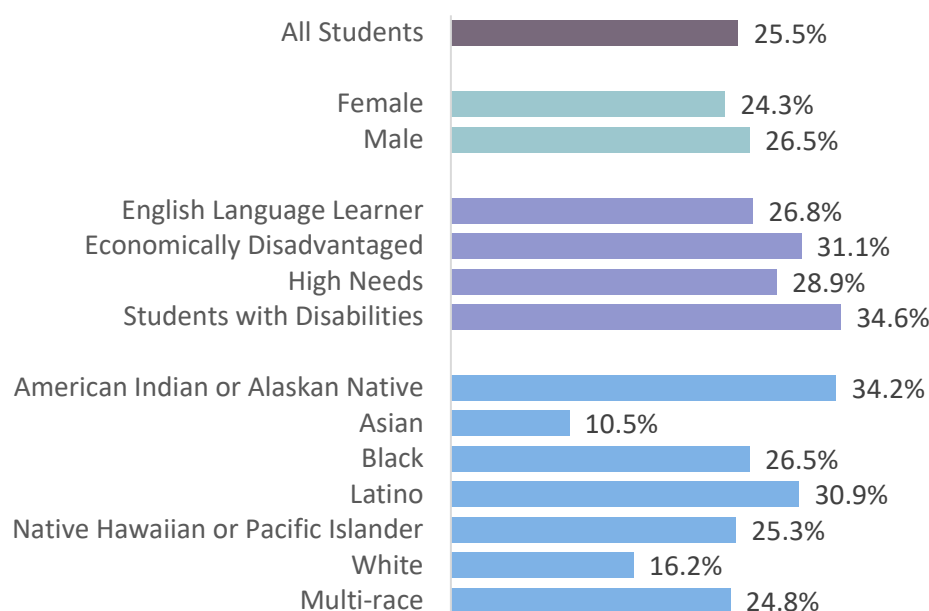
Category	Percent
All Students	25.5%
Female	24.3%
Male	26.5%
English Language Learner	26.8%
Economically Disadvantaged	31.1%
High Needs	28.9%
Students with Disabilities	34.6%
American Indian or Alaskan Native	34.2%
Asian	10.5%
Black	26.5%
Latino	30.9%
Native Hawaiian or Pacific Islander	25.3%
White	16.2%
Multi-race	24.8%

DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Student Attendance, 2018
NOTES: Years represent school years (e.g., 2014 represents school year 2013-2014); Chronically absent is defined as students who were absent 10% or more of their total number of student days of membership in a school; Economically disadvantaged is determined based on a student's participation in one or more of the following state-administered programs: the Supplemental Nutrition Assistance Program (SNAP), the Transitional Assistance for Families with Dependent Children (TAFDC), the Department of Children and Families' (DCF) foster care program, and MassHealth (Medicaid); High needs is defined as students designated as either low income (prior to School Year 2015), economically disadvantaged (starting in School Year 2015), or ELL, or former ELL, or a student with disabilities

Approximately three-quarters (76.6%) of students who started high school in 2013-2014 completed it in four years, graduating in 2018 (Figure 11). This graduation rate falls in the middle of other similarly-sized cities; 4-year graduation rates in Washington DC and San Francisco were 68.5% and 84.4%, respectively, in the same year. Figure 11 also shows the four-year graduation rates across different sub-populations of students. Data on drop-out rates among the same sub-populations can be found in APPENDIX I, along with data on standardized test proficiency results by grade within BPS.

Figure 11. Graduation Rate Among Boston Public High School Students, 2018
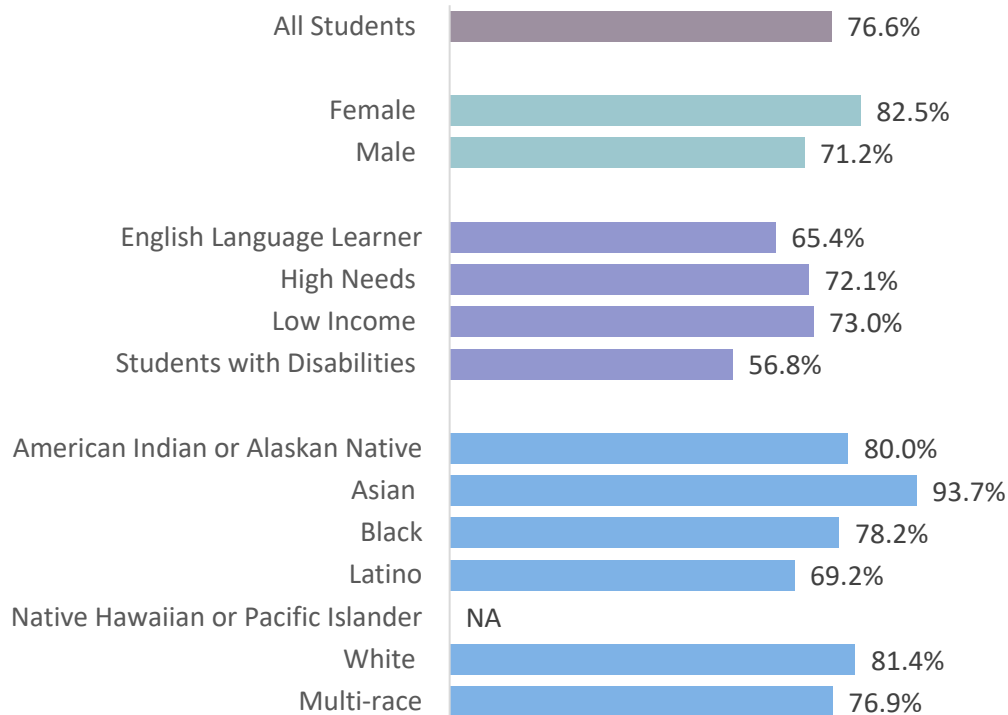
Category	Rate
All Students	76.6%
Female	82.5%
Male	71.2%
English Language Learner	65.4%
High Needs	72.1%
Low Income	73.0%
Students with Disabilities	56.8%
American Indian or Alaskan Native	80.0%
Asian	93.7%
Black	78.2%
Latino	69.2%
Native Hawaiian or Pacific Islander	NA
White	81.4%
Multi-race	76.9%

DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Cohort 2018 Graduation Rates, 2018
NOTES: Years represent school years (e.g., 2014 represents school year 2013-2014); Graduation Rate indicates the percentage of students who graduate with a regular high school diploma within 4 years (# of students in cohort who graduate in 4 years or less); Low-income indicates the percent of enrollment who meet any one of the following definitions of Low-income: 1) the student is eligible for free or reduced price lunch; or 2) the student receives Transitional Aid to Families benefits; or 3) the student is eligible for food stamps; The English language learners, Special Education, and Low-income groups include all students who were reported in those categories at least once in high school. Students can be counted in more than one group

Educational quality was brought up among many focus group and interview participants and discussed within the frame of educational equity. Participants believed that students in lower income neighborhoods were not necessarily receiving the same quality education as those in more affluent neighborhoods within Boston. Parents in focus groups in Allston/Brighton and in Dorchester held the perception that public schools did not invest in schools equitably across neighborhoods. One Allston parent shared, "*I want better education for my daughter. The scores at our schools are very low compared to other neighborhoods.*" Some parents discussed lottery systems that made it challenging to access neighborhood schools that were perceived to be of higher caliber. One key informant explained, "*When it comes to kids in elementary [school], one of the bigger challenges becomes feeling like you have to luck out to get into a good school. It's a lottery, and if you're able to tour and make informed choices you are not guaranteed a slot at the school. The older the children get, the more challenging it is finding quality education in the city.*"

Key informant interviewees who work with families or who were in the educational field expressed the need for smaller class sizes, more social emotional supports, teachers that reflect the diversity of the community, and more venues to discuss health and wellness. One key informant summarized, "*We need to increase teachers and counselors and decrease class sizes. There is an opportunity to formalize more social support positions within Boston Public Schools to address [child] mental health on an on-going basis.*" In addition, several discussed the importance of early childhood education and supports. Key informants also expressed the

desire for cultural immersion experiences. One shared, *"[We need to be] bringing in more opportunities for children around art and cultural experiences. Helping children think about culture inside and outside the academic lens."*

Employment and Workforce

Why is This Important?

Americans spend more than half their waking lives at work.[8] Employment can confer income, benefits, and economic stability, among other factors that promote health. Well-paying jobs enable workers to live in healthier neighborhoods, afford nutritious food, and pay health care-related expenses. [9] By contrast, unemployment, underemployment, and job instability not only make it more difficult to purchase goods and services that enhance health, but also have been shown to contribute to stress-related health conditions and poorer mental health.[10]

> "I've struggled to get a job. I have more than a decade of experience, but the minimum requirements are always a bachelor's degree, so that disqualifies you for ten jobs right off the bat." — From a focus group participant

Key Findings in this Section

Boston, like much of the rest of the nation, has experienced an economic upturn in recent years. In 2018, Boston's unemployment rate was 3.0%, according to the Bureau of Labor Statistics. However, when examining unemployment data over the past several years, which can be analyzed by neighborhood and other subgroups, data show that unemployment rates have been significantly higher in Roxbury, Dorchester, Fenway, and Mattapan compared to Boston overall. In focus groups and interviews, those with lower education or fewer skills (especially in technology), immigrants, and those with a criminal record additionally were reported to experience employment challenges. Boston's largest employers are in the health care and education sectors; these sectors have experienced substantial employment gains over the past 15 years, while manufacturing and utilities have experienced decreases. Numerous Boston CHNA survey respondents reported feeling underemployed, wanting higher pay, or desiring greater job satisfaction. Focus group members and interviewees described challenges in getting a secure job, specifically around meeting educational credential requirements, navigating online job application systems, and dealing with CORI criminal background checks.

Employment Rate and Industry

Overall, Boston residents have been experiencing low levels of unemployment in the last several years. However, in focus group and interview discussions, there were differing views about employment and economic prospects in the city of Boston. Several key informant interviewees talked about the economic vitality in the city, citing a strong local economy and thriving small businesses. However, many residents across several focus groups discussed the challenges for workers, especially those with lower educational levels or skills, in securing well-paying jobs, remarking on the stark divides in class between Boston residents. One interviewee shared, *"We have become the two cities of Boston. The extreme and stark difference is right in your face; where you have urban affluence right up against urban poverty... the Ritz condo development right next to St. Francis House..."* Several focus group participants from

Dorchester, East Boston, Mattapan, Chinatown, and Allston/Brighton described working multiple low-wage jobs and the stressors that come from a lack of job security. One Dorchester resident shared, *"I have three jobs and still make less than $45,000 a year, barely getting by."* Immigrant communities, single-parent households, residents with a criminal record, and parents of children with special needs were described as especially vulnerable to unstable employment situations.

In 2018, Boston had an unemployment rate of 3.0% according to the U.S. Bureau of Labor Statistics (BLS). However, 2018 BLS data are not able to be examined by different neighborhoods or population groups. Data from the 2013-2017 aggregated American Community Survey from the U.S. Census shows that 7.3% of Boston residents were not employed over this five-year period, yet that figure was significantly higher for the neighborhoods of Roxbury, Dorchester, Fenway, and Mattapan (Figure 12). Additional unemployment data by race/ethnicity can be found in APPENDIX I.

Figure 12. Percent Population 16 Years and Over Unemployed, by Boston and Neighborhood, 2013–2017
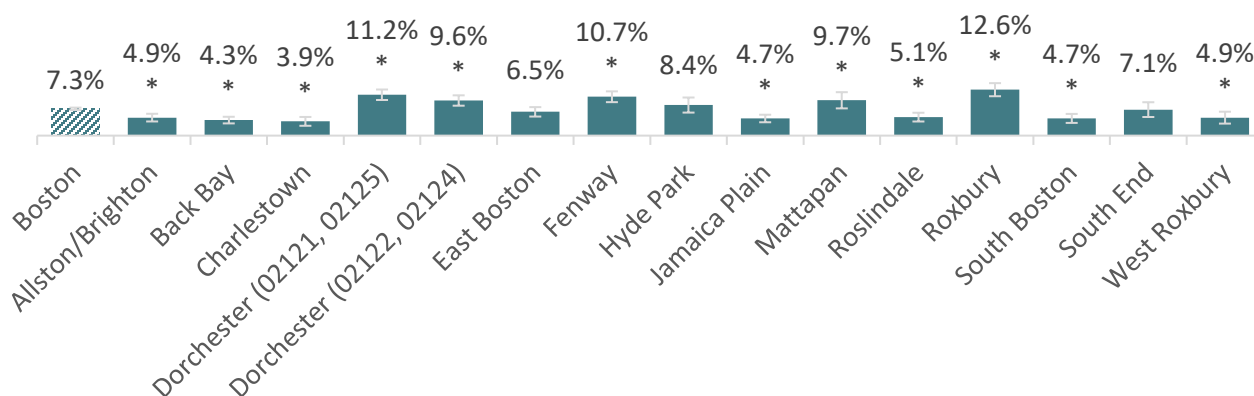
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

According to 2015 Census data analyzed by BPDA, Boston has almost 13,000 payroll jobs per square mile, a job density similar to San Francisco, New York City, and Washington, DC.[11] Boston's largest employers reflect the dominance of the health care and education industries, which account for 14 of the top 20 largest employers in the city. The top five largest employers in the city are Massachusetts General Hospital, Brigham and Women's Hospital, Boston Public Schools, Boston University, and Boston Children's Hospital.

This mirrors the industries in which Boston residents are employed. According to the American Community Survey, nearly one-third of Boston residents 16 years or older are employed in education, health care, or social assistance industries (Figure 13). The next most common

industry for Boston residents is professional, scientific, and management; administrative, and waste management services (industry categories are pre-defined by the U.S. Census).

Figure 13. Percent Population 16 Years and Over Employed by Industry, by Boston, 2013–2017

Educational services, and health care and social assistance — 31.2%
Professional, scientific, and management, and administrative and waste management services — 17.0%
Arts, entertainment, and recreation, and accommodation and food services — 10.7%
Finance and insurance, and real estate and rental and leasing — 9.0%
Retail trade — 8.1%
Other services, except public administration — 4.6%
Manufacturing — 4.4%
Public administration — 4.1%
Transportation and warehousing, and utilities — 3.5%
Construction — 3.4%
Information — 2.4%
Wholesale trade — 1.5%
Agriculture, forestry, fishing and hunting, and mining — 0.1%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTES: Data are arranged in descending order; industry categories are defined by the U.S. Census

According to the BPDA, health care and social assistance, accommodation and food services, and arts, entertainment, and recreation were the industries that had the largest percentage gains in employment over the past 15 years, while manufacturing and utilities had the largest percentage decreases in employment. [12] Production and transportation jobs are concentrated in zip codes in East Boston, South Boston Waterfront, South Boston, and the Back Bay, while consumer services jobs are concentrated in the West End/Beacon Hill, Downtown, South Boston Waterfront, Back Bay, and Fenway/Kenmore. Business services jobs are concentrated in Back Bay, Downtown, and the South Boston Waterfront. Education and health care jobs are concentrated in Roxbury, Fenway/Kenmore, Back Bay, and the West End.

Employment Challenges and Satisfaction

Two main themes emerged from the data collection with Boston residents: employment satisfaction and challenges in securing a competitive job. Numerous Boston CHNA Community Survey respondents reported feeling underemployed, wanting higher pay, or desiring greater job satisfaction. Nearly 30% of Boston CHNA survey respondents indicated that they felt they

had more training and experience than was required to perform their current job, and another 18% indicated this was possibly true (see APPENDIX I). Of the 978 CHNA survey respondents who answered that they were looking for a new job, the most commonly cited reason for looking was higher pay (33.4%) followed by job satisfaction (21.3%), and more opportunities for advancement (11.2%) (Figure 14).

Figure 14. Percent Boston CHNA Survey Respondents Looking for New Job Reporting Primary Reason for Looking for a New Job (N=978), 2019

Reason	Percent
Higher pay	33.4%
Job satisfaction	21.3%
More opportunities for advancement	11.2%
Other	7.3%
More flexible schedule	4.9%
Better hours	4.2%
Closer to home	4.2%
Better training and educational opportunities	4.1%
Want more hours/full-time position	3.3%
Better benefits	3.3%
Want a permanent position	3.0%
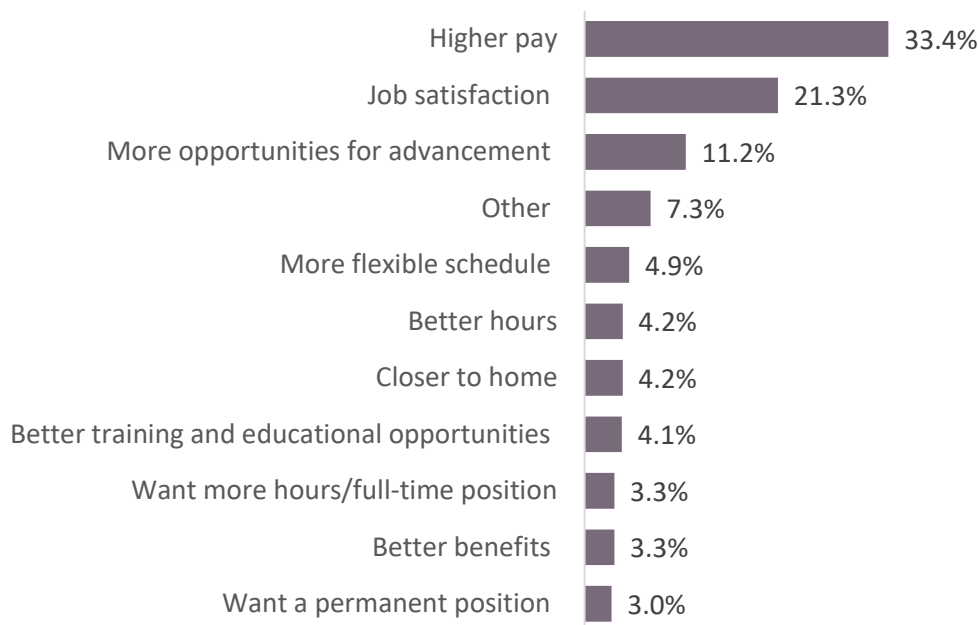
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Data arranged in descending order; Percentage calculations exclude respondents who selected "not looking for a new job"

Focus group participants, however, were more likely to discuss the challenges of securing a job rather than job satisfaction itself. These challenges, discussed in more detail below, included meeting educational requirements, changing hiring processes, having appropriate technology skills, and having a criminal record.

Educational Requirements and Training

Many focus group participants discussed how formal educational requirements for a job are a significant initial barrier. As one resident from Dorchester summarized, *"I've struggled to get a job. I have more than a decade of experience, but the minimum requirements are always a bachelor's degree, so that disqualifies you for ten jobs right off the bat."* Several participants also remarked that many employers do not take into account work or life experience as comparable to educational requirements. As one example focus group participant shared, *"In Boston, just having the credentials they want is difficult. You may have half of the education credentials, 10 years of work experience, and lots of life experience, but they [employers] don't see [the work or life experience as comparable]."* Several participants discussed how the high cost of college and other educational opportunities was inaccessible to them, especially if they were working, single parents. One focus group participant explained, *"People want to enrich their lives and get an education but how can you without support? Single parents don't know what to do with their kids, how to get to work; how are we ever supposed to get an education?"*

In addition to access to degree programs or positions that recognized life and work experience, focus group and interview participants identified the need for more trade schools and job centers that can help residents gain skills and training to create pathways beyond entry-level positions. Focus group participants from the South End specifically mentioned carpentry, electrical work, machine training, and small business training as especially valuable. Participants also stressed that it is imperative that training opportunities are accessible to working parents, taking in to consideration issues like childcare, time, and cost. One interviewee summarized, *"There's a need for employers that are sensitive to single-headed households who can help provide more work-life balance."*

Hiring Processes and Navigating Technology

Challenges navigating technology and dealing with new hiring processes were also identified as a concern for residents in Dorchester and among senior focus group participants. For example, focus group participants in Dorchester explained that the hiring process has drastically changed over the last 10 years in that nearly all applications are now submitted online. One participant shared, *"It's hard to get job now because everything is online. When you do the online application, you're trying to answer the question to the best of your ability, but you have to think outside the box because we are written off so quickly. There're no more walk-in interviews where you can meet someone and give a good first impression."* Another participant agreed and added, *"I'm a wonderful person if I could just get in the door."* Participants in these groups explained that there are many incorrect assumptions about residents' ability to navigate technology. One Dorchester parent resident shared, *"Not everybody is computer literate. Not everyone has a resume online and that really knocks you down. You just want someone to see that you're a good person and hard worker, but you can't do that because there's no face to face correspondence anymore."* Similarly, focus group participants who were seniors explained that technology is often a hinderance to remaining competitive in the work force. One shared, *"A lot of elderly do not how to use their cellphone properly. Some classes have been given to help seniors with technology. There needs to be more of that because many of us have the phone but don't know how to use it."*

Criminal Record

Having a criminal record also makes it difficult to secure employment, shared focus group and interview participants. Focus group participants who identified as homeless described challenges finding employment because of past criminal charges. One shared, *"You need to remember that CORI[1] is going to limit you in everything…even if you get it sealed. [Employers] say they'll get back to you and call you, but they never do."* Key informants described the need for more support from employers for this population. One interviewee explained, *"[There is] a need for more flexible employment policies so that people who have criminal records can have real opportunities to work and turn their lives around. When they are closed off from these positive opportunities, that is when they go further downhill in destructive behaviors."*

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[1] CORI stands for Criminal Offender Record Information and is a record of all criminal court appearances in Massachusetts for a particular individual, including arrests, convictions, dismissals, and serious violations.

Youth Employment Challenges

Focus group participants, especially parents, also discussed the importance of encouraging youth employment, both for young people to learn important skills and to focus their time on positive activities. However, while there are a number of youth workforce programs in the city, many youths find it challenging to get a job. When talking about the limited number of employment opportunities for young people, one parent from Dorchester shared, *"You need to know somebody who knows somebody just for a kid to get a job. Then they have to resort to the streets because they don't have [anything] else to do."* Key informant interviewees explained that it is imperative that these opportunities include a focus on technology and "21ˢᵗ century skills" like computer programming, professional communication, and critical thinking. One interviewee shared, *"We [in Boston] are one of the leading markets for technology-enabled industries, and we have young people who do not have access to computer and internet service in their homes. They do everything on their phones but that does not help them fully participate in the economy."* Further, it was noted that transportation poses a challenge for young people to access employment opportunities, so it is important that jobs are available within their communities or can offset transportation barriers. One interviewee shared, *"Transportation is a major issue that impacts our work. The amount of time it takes to get anywhere does not help kids with after school jobs. Kids ride two buses and a train and then walk for a 2-hour employment experience!"*

Income and Financial Security

Why is This Important?

Income is a powerful social determinant of health. At an individual level, income influences where people live, their ability to access higher education and skills training, and their access to resources to help them cope with stressors, all of which affect health and well-being. Income also shapes access to health-promoting resources such as healthy food, health care, and technological advances (e.g., new medical treatments).[13] Compared to their higher income counterparts, low-income individuals have higher rates of smoking, obesity, and physical inactivity; more limited access to healthy foods, opportunities for physical activity, and healthy environments; higher rates of physical limitations, heart disease, diabetes, stroke, and other chronic conditions; and more limited access to health care.[14] At a community level, regardless of individual level of income, low community wealth often correlates with more limited educational and job opportunities, greater community violence, environmental pollution and disinvestment in essential infrastructure and resources.[15] While income, education, and employment are all associated with health outcomes in slightly different ways, many of the same population groups—communities of color, women, immigrants, and others—experience the compounded challenges and structural inequities across the myriad of systems related to economic advancement and upward mobility.

> The city median household income is $62,021 but ranges by neighborhood –from Dorchester with the lowest median income at $27,964 to South Boston with the highest at $170,152.

Key Findings in this Section

Across all indicators of income and financial security, there are substantial differences across Boston neighborhoods and racial and ethnic groups, that are similarly patterned as other social, economic, and health inequities. The median household income in Boston is $62,021, but the spread between the community with the lowest median household income (Dorchester, $27,964) and the highest (South Boston, $170,152) is substantial. In four communities—Dorchester, Fenway, Roxbury and the South End—approximately 25-35% of residents live below the federal poverty level. Median household income is highest for White residents and lowest for Latino residents. Median value of total assets and net wealth for White residents far exceeds that for any other racial/ethnic group. Poverty and economic instability were key themes in focus groups and interviews, with participants sharing the challenges of meeting basic needs and the negative effects this has on personal health. Community survey results indicate that a substantial number of respondents face challenges paying their mortgages, utility, credit card and medical bills, buying groceries, and paying for childcare. These challenges are experienced by a higher proportion of non-White respondents compared to White respondents, and those without a college degree compared to those who do have a college degree or more.

Household Income and Poverty

Financial insecurity was reported as a concern in the majority of focus groups and interviews, with participants indicating that it was one of the root causes of stress in their lives, and reporting challenges meeting basic needs such as food, shelter, and medical care. Focus group participants across geographies often attributed these financial stressors to stagnant salaries, higher costs of living, and difficulty balancing multiple low-wage jobs. One interviewee summarized, "*Real wages have been going down for low income people [for decades]. This is at the heart of all of it: people have no time because they are working four jobs to get the same salary they used to get from one [job]. If you can't rest, how can you be healthy? The sleep and the downtime are fundamental, and people have less of it. Some people have to work 70 hours to make ends meet.*"

Census estimates reflect this theme of the burden of limited income affecting many households across Boston. In 2013-2017, one-quarter of Boston households had incomes <$25,000 (27%) and one in seven households earned between $25,000 and <$50,000 (16%), and yet one-third of Boston households earned $100,000 or more (Figure 15). The neighborhoods of Allston/Brighton and East Boston most closely resembled the socioeconomic profile across Boston. Roxbury (44%), Fenway (40%), Dorchester (02121, 02125; 36%), and the South End (31%) had the highest proportion of households with incomes below $25,000.

Figure 15. Household Income Distribution, by Boston and Neighborhood, 2013–2017

Legend: ■ Less than $25K ■ $25K to less than $50K ■ $50K to less than $75K ■ $75K to less than $100K ■ $100K or more

Neighborhood	Less than $25K	$25K to less than $50K	$50K to less than $75K	$75K to less than $100K	$100K or more
Boston	26.6%	16.2%	14.3%	9.9%	33.0%
Allston/Brighton	26.1%	18.0%	16.9%	10.1%	28.8%
Back Bay	16.8%	9.7%	13.2%	9.4%	50.9%
Charlestown	21.4%	9.3%	9.4%	8.8%	51.1%
Dorchester (02121, 02125)	36.0%	21.3%	14.5%	9.0%	19.1%
Dorchester (02122, 02124)	29.1%	18.9%	15.9%	10.6%	25.5%
East Boston	25.9%	21.7%	17.6%	10.2%	24.5%
Fenway	40.1%	15.2%	13.9%	7.7%	23.2%
Hyde Park	20.9%	18.8%	19.5%	12.5%	28.3%
Jamaica Plain	19.7%	12.2%	12.6%	14.5%	41.0%
Mattapan	28.6%	21.4%	18.7%	10.6%	20.7%
Roslindale	19.4%	17.3%	14.3%	13.7%	35.4%
Roxbury	43.9%	23.4%	11.6%	6.9%	14.3%
South Boston	19.7%	10.8%	10.2%	10.2%	49.2%
South End	31.4%	12.4%	10.5%	5.0%	40.7%
West Roxbury	15.7%	11.8%	14.6%	11.3%	46.6%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

As described below, both the average and median household incomes are important examine. These numbers should be close if there is not much variation or unequal extremes in a group. While the average (or mean) of a setting is often examined, the median provides the mid-point, where 50% of the sample is above that number and 50% is below. Figure 16 represents on the map those neighborhoods whose median income was significantly lower (light blue) or significantly higher (dark blue) than Boston overall.

More detailed data on the specific median and average incomes by neighborhood can be found in APPENDIX I.

These data indicate that the average household income was highest in Back Bay (02110; $256,500) and South Boston (02210; $212,297) in 2013-2017. The 02121 neighborhood in Dorchester had the lowest average ($45,874) and median ($27,964) household income over this period, with the average household income in Dorchester being 82% lower than that in Back Bay. The 02119 and 02120 neighborhoods in Roxbury both were among the lowest average ($49,233 and $51,456) and median ($30,663 and $32,243) household incomes, respectively. There are notable differences between the average and median household incomes in zip codes

that comprise the South End, where the average income is 83%–286% higher than the median income, depending on the zip code.

Figure 16. Median Household Income (in U.S. Dollars), by Zip Code, 2013–2017

Median household income for Boston overall was **$62,021**

Lower than Boston overall
Similar to Boston overall
Higher than Boston overall

N
0   2   4 Miles

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: "Lower than Boston overall" indicates the estimate is significantly lower than the Boston estimate; "Similar to Boston overall" indicates the estimate is statistically similar to the Boston estimate (i.e., no statistically significant difference); "Higher than Boston overall" indicates the estimate is significantly higher than the Boston estimate

Reflecting patterns of residential segregation that underlie inequities in household income across Boston neighborhoods, there were significant racial/ethnic differences in median household income relative to the average for Boston (Figure 17). White households ($98,317)

reported incomes that were 47% higher than the city average ($66,758). Asian ($47,048), Black ($39,344), and Latino ($36,998) households earned significantly less than the average across Boston. Notably, while White households reported incomes that were approximately $30,000 above the city average, Latino and Black households brought home incomes that were $30,000 below the median income across Boston.

Figure 17. Median Household Income, by Boston and Race/Ethnicity, 2017
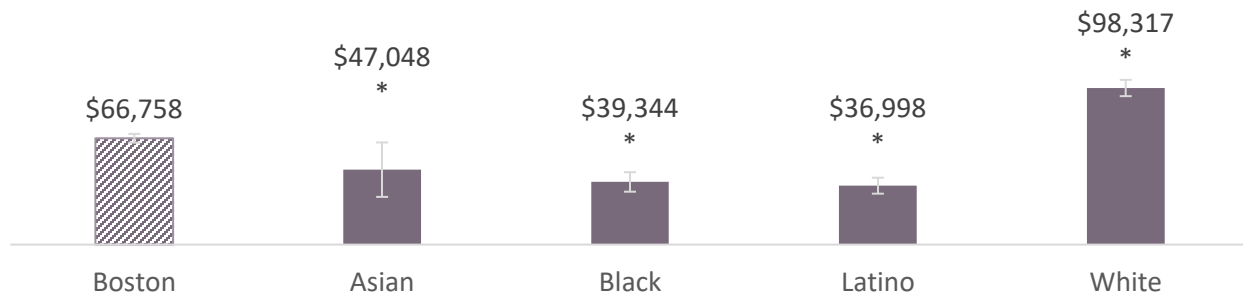
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017
NOTE: Asterisk (*) denotes race/ethnicity estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Given high cost of living in Boston and the low federal poverty line, those who fall below the poverty level are at the extreme end of financial insecurity. The federal poverty line changes by housing size; for a household of one, the 2019 federal poverty line is an annual income of $12,490; for a household of four, it is $25,750. Figure 18 indicates that one in five Boston residents (20.5%) meet this criterion for the 2013-2017 aggregate American Community Survey data, although this situation varies by neighborhoods. The percent of residents living below the federal poverty level was highest in Fenway (36.7%) and Roxbury (34.4%) in 2013-2017, followed by Dorchester (02121, 02125; 28.4%), and the South End (24.6%). West Roxbury (6.4%) had the lowest proportion of residents living below the federal poverty level in 2013-2017.

The percentage of the population living in poverty also differs significantly by race/ethnicity. Using just 2017 data, Asian residents, at nearly 31%, and Latino residents, at nearly 28%, are significantly more likely to be in poverty than Boston residents overall. White residents are significantly less likely, at nearly 11% (Figure 19).

Figure 18. Percent Population Living Below Poverty Level, by Boston and Neighborhood, 2013–2017
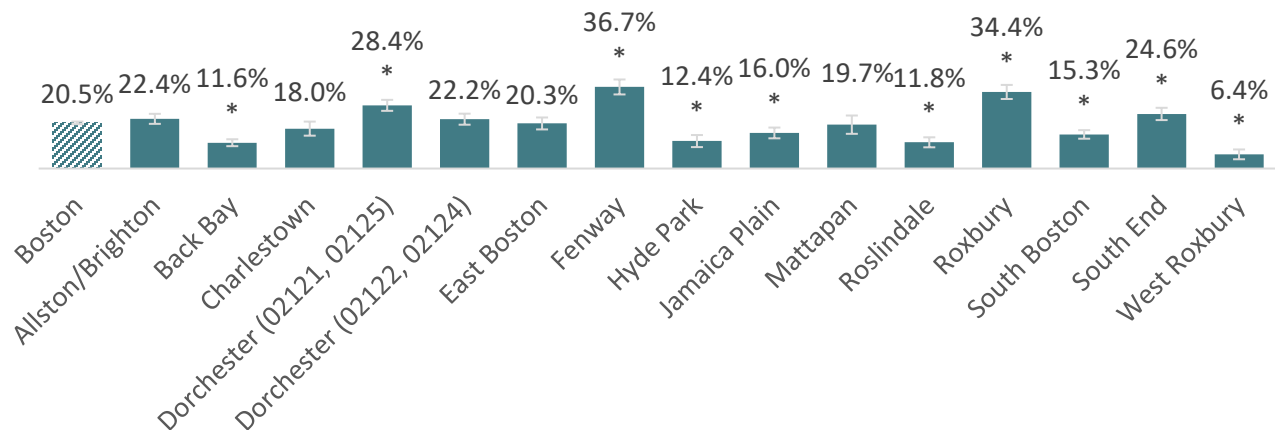
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End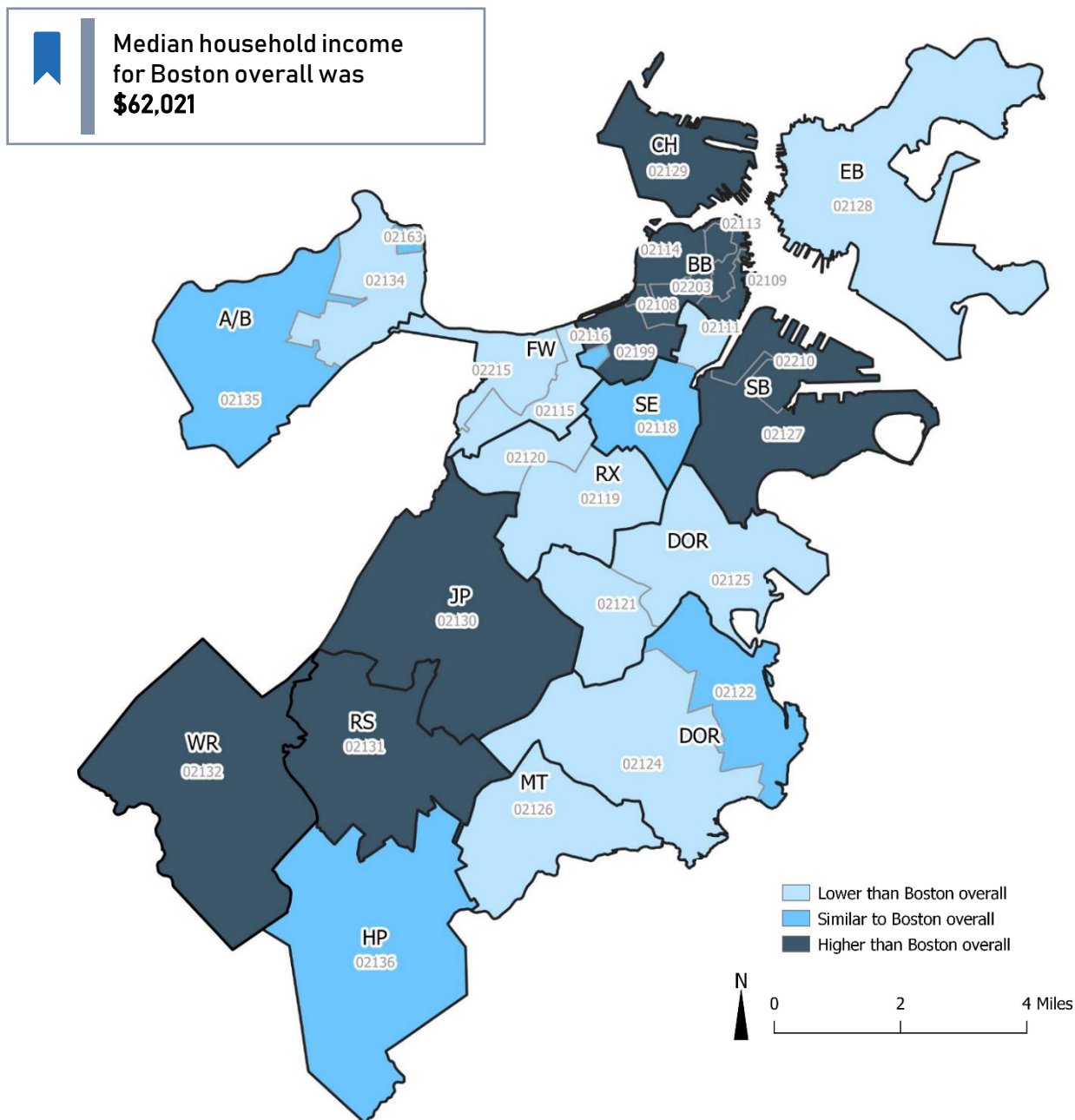; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Figure 19. Percent Individuals Below Poverty Level, by Boston and Race/Ethnicity, 2017
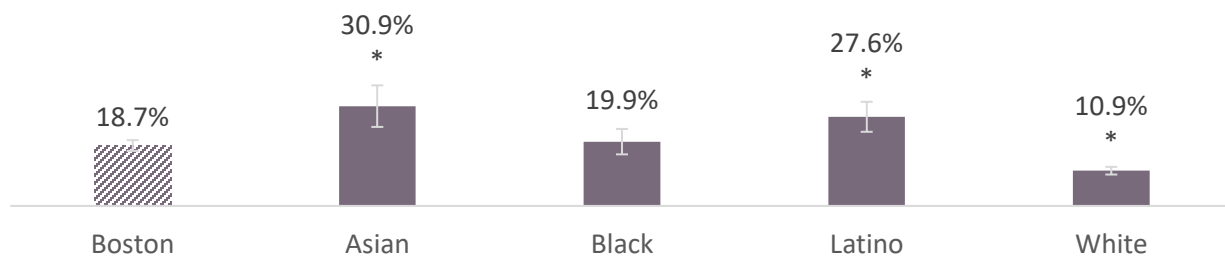
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017
NOTE: Asterisk (*) denotes race/ethnicity estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Patterns of poverty at the family level largely mirror patterns for individuals in poverty. Data on Boston families living below the federal poverty line can be found in APPENDIX I. Given Boston's high cost of living, looking at data on those who are right above the poverty line is also important. APPENDIX I also includes data on individuals with incomes at 200% below the poverty line by neighborhood.

Income Inequality and the Wealth Gap

Income inequality of a community is expected to have direct effects on an individual's own income status, as well as indirect effects that can affect health, regardless of one's own income status. Studies have discussed that increases in income inequality could affect the availability of goods and services, the enforcement of laws banning unsafe consumer products, the benefits and costs of higher education, the social bonds among relatives and neighbors, or the

distribution of political influence[16]. The Gini Index is a common measure used to identify the level of income inequality in a given population, ranging from 0 (generally reflecting income equality) to 1 (generally indicating highest levels of income inequality). As shown in Figure 20, the Gini Index ranged from a low of 0.42 (02210 zip code in South Boston and 02163 zip code in Allston/Brighton) to a high of 0.67 (02111 zip code in the South End). Income inequality was also higher in Back Bay (02110; 0.64) and Fenway (02115 and 02215 zip codes; 0.60-0.61). See APPENDIX I for additional detail.

Figure 20. Gini Index, by Zip Code, 2013–2017
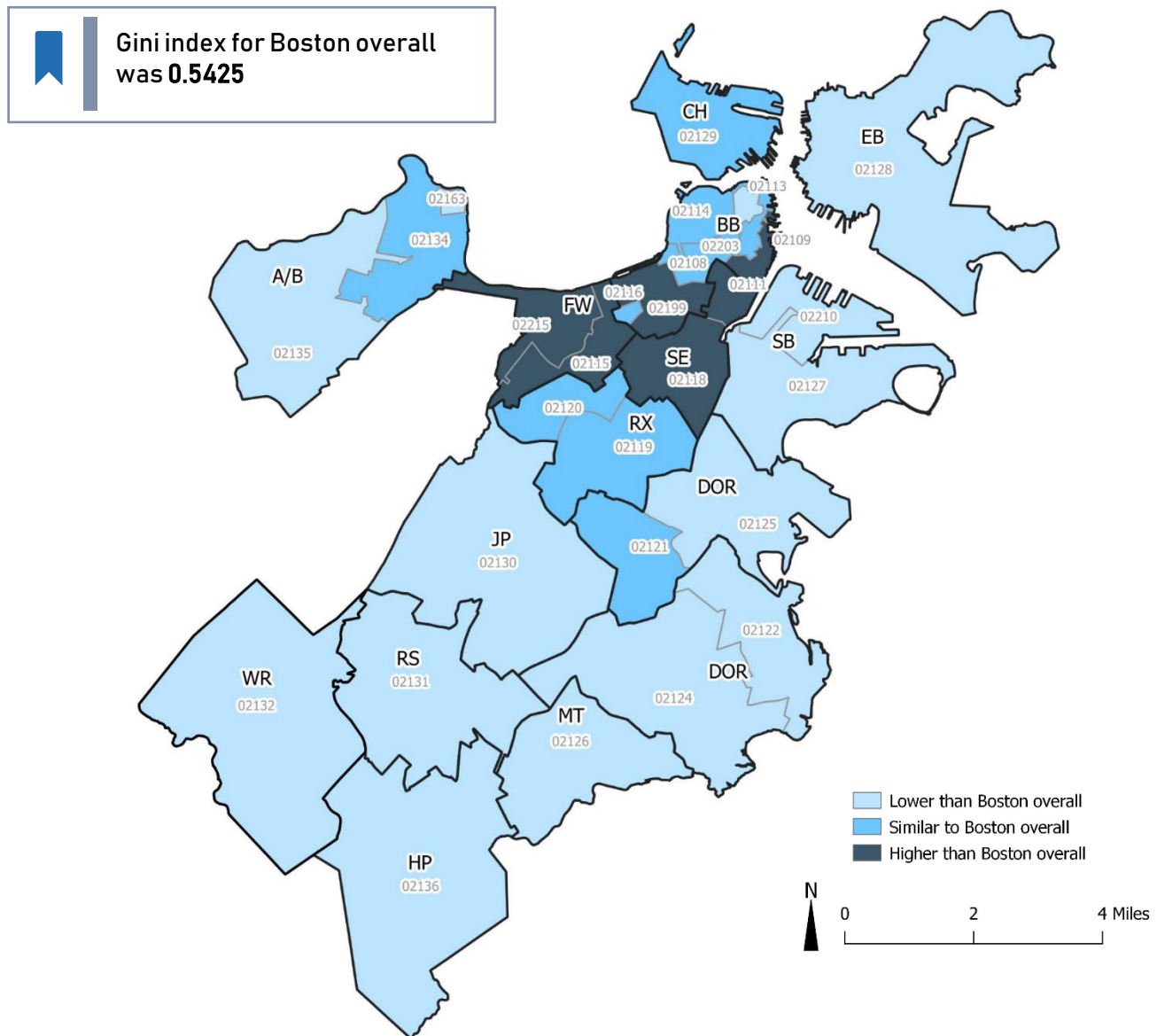
Gini index for Boston overall was **0.5425**

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: The Gini Index is a summary measure of income inequality. The Gini coefficient incorporates the detailed shares data into a single statistic, which summarizes the dispersion of income across the entire income distribution. The Gini coefficient ranges from 0, indicating perfect equality (where everyone receives an equal share), to 1, perfect inequality (where only one recipient or group of recipients receives all the income). The Gini is based on the difference between the Lorenz curve (the observed cumulative income distribution) and the notion of a perfectly equal income distribution; "Lower than Boston overall" indicates the estimate is significantly lower than the Boston estimate; "Similar to Boston overall" indicates the estimate is statistically similar to the Boston estimate (i.e., no statistically significant difference); "Higher than Boston overall" indicates the estimate is significantly higher than the Boston estimate

Numerous participants across focus groups perceived that there is growing economic inequality in communities of color compared to their White counterparts. People noted the gentrification of neighborhoods and rising cost of living was having a disproportionate impact on lower income families and communities of color. As one key informant interviewee described, *"A lot of our minority families in Roxbury and Dorchester can never make it into the middle class. Our families are being pushed out to cities like Brockton and Randolph and then aren't able to access city resources."*

Data on wealth were not available for the City of Boston, but studies have looked at the wealth of the Boston Metropolitan Statistical Area (MSA) which is comprised of Massachusetts Counties of Norfolk County, Plymouth County, Suffolk County, Middlesex County, Essex County and New Hampshire Counties of Rockingham County, NH and Strafford County, NH. In a Federal Reserve Bank of Boston 2015 report which focused on examining wealth disparities between residents who identify as White, U.S. born Black, Caribbean Black, Cape Verdean, Puerto Rican, and Dominican, the median value of total assets for White residents in the Boston Metropolitan Statistical Area ($256,500) far exceeded the assets reported for any racial/ethnic minority group in 2014 (Figure 21). Among residents of color, the highest household assets were reported among non-Caribbean Hispanic residents ($15,000), followed by residents who identified as Caribbean Black ($12,000). Of note, Cape Verdean ($0) and Black/African American residents ($700) had the lowest reported household assets in 2014. Data on net worth, which can be found in APPENDIX I, show similar patterns. These patterns reflect themes in focus groups and interviews suggesting that residents of color across Boston are struggling to make ends meet, let alone get ahead financially.

Figure 21. Median Value of Total Assets Reported to be Held by Households (in U.S. Dollars), by Boston Metropolitan Statistical Area, 2014
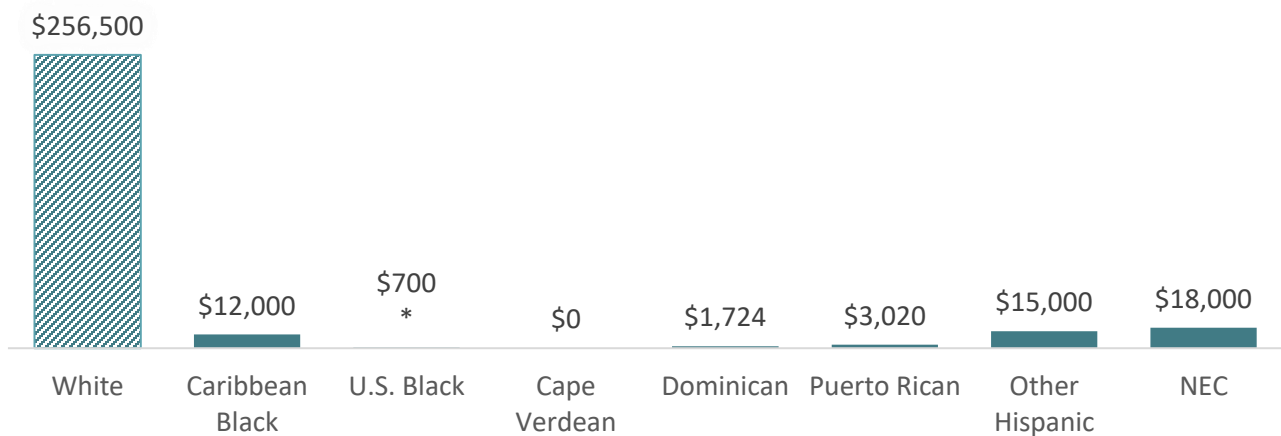
DATA SOURCE: Duke University, National Asset Scorecard for Communities of Color (NASCC), Boston NASCC survey, as analyzed and reported by Muñoz, A. P. et al, Federal Reserve Bank of Boston, The Color of Wealth in Boston (2015), 2014

NOTES: Boston Metropolitan Statistical Area includes the following Massachusetts counties: Essex County, Middlesex County, Norfolk County, and Suffolk County, and Rockingham County, New Hampshire and Strafford County, New Hampshire; Asterisk denotes where the difference in the percentage of nonwhites as compared with the percentage of white households was statistically significant at the 95% level; The "not elsewhere classified" (NEC) category includes mainly respondents that chose more than one race; This study focused on U.S. born Black, Caribbean Black, Cape Verdean, Puerto Rican, and Dominican differences and did not report data on other racial/ethnic groups, such as Asian or Native American/American Indian residents.

Challenges of Financial Insecurity

Financial insecurity was a major theme across many focus groups. Participants talked about the challenges of making ends meet. As one participant noted, *"Even if rent goes up $50 or $100 a month, it's a lot when your income is not growing."* In particular, participants talked about challenges with being stuck in low-wage jobs, with little room for advancement, and how that made it difficult to maintain a good quality of life. For example, in East Boston and Dorchester, parents spoke of working hourly wage jobs that were inconsistent and unstable. One resident from Dorchester illustrated her challenge in being in a low wage job without much autonomy or flexibility in schedule, *"I'm a single mother and told my jobs that I can't work night shifts when I applied. But still they schedule me for hours I can't do and then they can fire you if you don't make the shifts. They pick and choose whatever hours they want to give you."* A few focus group participants who identified as low-wage mentioned that raising the minimum wage in Massachusetts is a step in the right direction to financial stability; however, more is needed to help working poor and lower middle-class families.

Across most groups, participants spoke of having to live paycheck to paycheck and being unable to save any additional income for emergencies. One low-income parent shared, *"There are lots of financial needs here in East Boston. People are working 2 or 3 jobs, and even if you live simply, your salary breaks even. There is no extra money."* Residents who are in the lower middle class also described struggles to maintaining financial stability, mentioning limited resources to help families attain upward mobility. One focus group participant from the South End shared, *"People working are making too much to get food stamps—but not enough to feed their family. The middle class is struggling; you're back to surviving and not living."*

According to key informants and non-English focus group participants, residents who were undocumented and new immigrants were especially vulnerable to financial instability between no documentation, limited power, and the desire to support their families in their country of birth. One undocumented resident shared, *"The problem is that people have social security numbers- lots of people who don't have papers. And [employers] can pay you very little because they know you can't report them. I get paid $40 a day to work very long days and take care of someone else's kids."* A focus group participant in Mattapan echoed this sentiment, sharing, *"We are unable to support each other, and we should be trying to invest in ourselves, but we still need to send transfer money to Haiti [every month]."*

> "Families who are lower middle income are trying to get out of the grey area but are stuck. If they get a raise and advance, then they don't qualify for services."—Key informant interviewee — From a key informant interviewee

Multiple focus group participants also described what is known as 'the cliff effect'- when a minor increase in income can cause a swift and total loss of benefits that are often more than the financial raise. One interviewee explained, *"One big obstacle for those we serve is the cliff effect. As [residents] start to increase their income, their benefits drop off. Navigating that is a challenge and there's a real fear around that."* Focus group residents who identified as low-income echoed this sentiment, with some describing experiences of losing health insurance or other benefits as a result of picking up even a few extra hours of work a week. One Mattapan resident shared, *"I got 4 extra hours at my job and MassHealth cut me off and I couldn't afford*

my pills for weeks after that." Loss of benefits was also a concern as it related to childcare, with one interview sharing: "*Parents who need to work in order to provide for their families is often a hard choice for mothers who need to ask themselves' do I stay home and stay on the benefits I'm receiving, or do I find childcare, so I can work?*" This sentiment was echoed by focus group participants who were mothers, with one sharing, "*I get paid $40 a day and the YMCA charges me $60 a day for childcare. It's impossible for a single mom like me to pay that.*"

These forms of financial insecurity that emerged in focus groups and interviews echo estimates from the Federal Reserve indicating neighborhood variation in delinquent payments and poor credit scores. Approximately one in five residents in Roxbury (22%), Mattapan (21%), and Dorchester (18%) were delinquent in a payment in 2017, similar to the average across Boston (19%) that same year (Figure 22). (It should be noted that the neighborhood definitions used for the Federal Reserve study are slightly different than the definitions used throughout the rest of this report.)

Figure 22. Percent Population Delinquent in Payment, by Boston and Neighborhoods, 2017
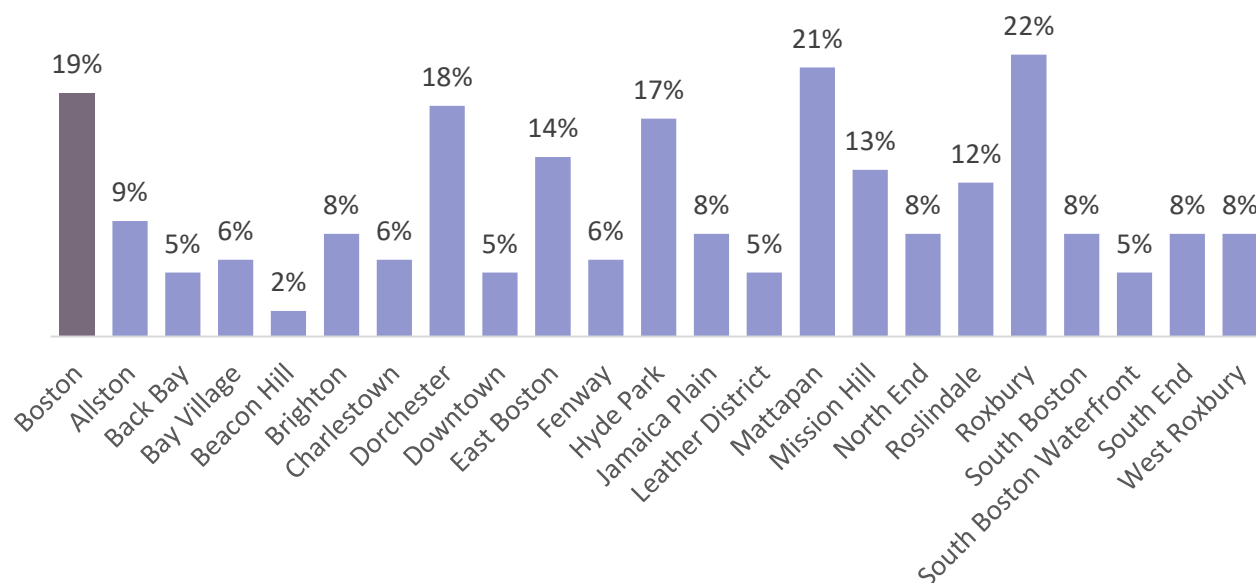
DATA SOURCE: Federal Reserve Bank of New York (FRBNY) Consumer Credit Panel/Equifax, as cited in Federal Reserve Bank of Boston, The Concentration of Financial Disadvantage: Debt Condition and Credit Report Data in Massachusetts Cities and Boston Neighborhoods (2018), 2017Q2
NOTE: Neighborhoods are defined per Boston Planning & Development Authority definitions (http://www.bostonplans.org/getattachment/d09af00c-2268-437b-9e40-fd06d0cd20a2)

While data on average credit scores can be found in APPENDIX I, Figure 23 presents data by neighborhood on the percent of the population with subprime credit scores. The proportion of residents with subprime credit scores ranged from a low of 8% in Beacon Hill to a high of 51% in Roxbury. The neighborhoods of Roxbury (51%), Mattapan (48%), Dorchester (43%), and Hyde Park (38%) had the highest proportion of residents with subprime credit scores.

Figure 23. Percent Population with Subprime Credit Score (< 660), by Boston and Neighborhoods, 2017
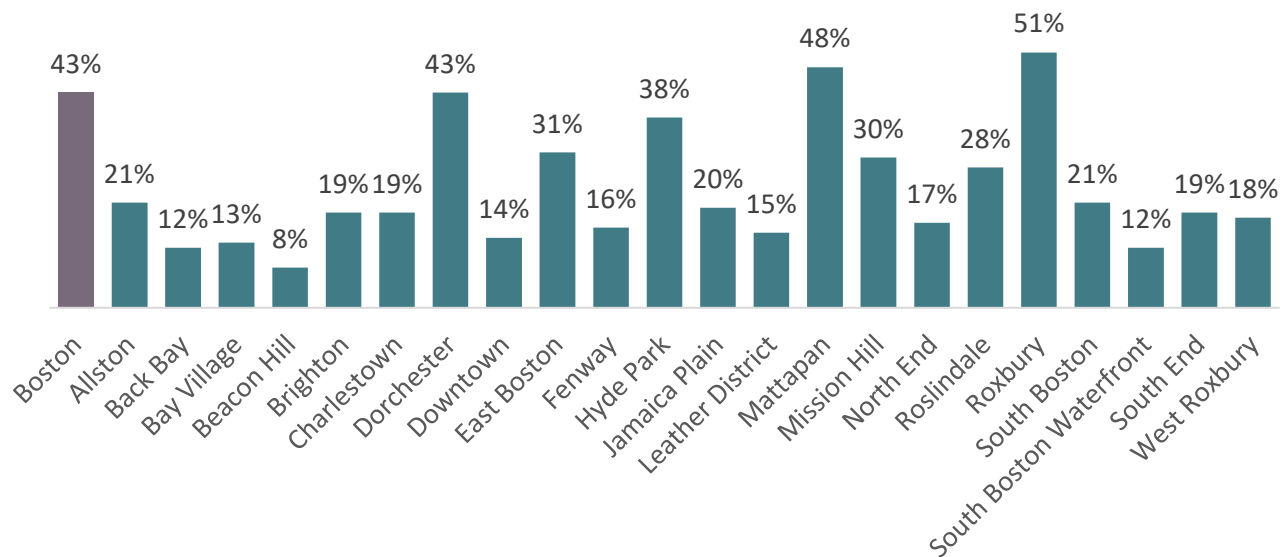
DATA SOURCE: Federal Reserve Bank of New York (FRBNY) Consumer Credit Panel/Equifax, as cited in Federal Reserve Bank of Boston, The Concentration of Financial Disadvantage: Debt Condition and Credit Report Data in Massachusetts Cities and Boston Neighborhoods (2018), 2017Q2
NOTE: Neighborhoods are defined per Boston Planning & Development Authority definitions
(http://www.bostonplans.org/getattachment/d09af00c-2268-437b-9e40-fd06d0cd20a2)

Boston CHNA survey respondents were asked whether they had troubles financially in several different areas. As shown in Figure 24, the most common form of financial insecurity reported among Boston CHNA survey respondents was saving money (57%). One quarter of respondents reported challenges in paying credit card bills (24%) or purchasing groceries (23%). One in five respondents indicated trouble paying utilities (22%), rent/mortgage (20%), and medical bills (19%).

Figure 24. Percent Boston CHNA Survey Respondents Reporting Having Trouble with Finances, by Type of Finances, 2019
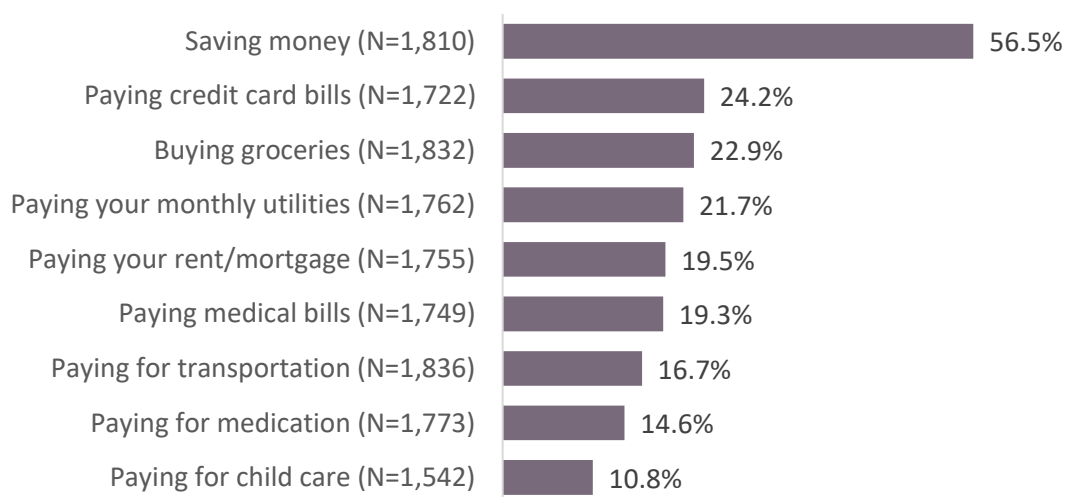
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "don't know/prefer not to answer"

While more than half (57%) of Boston CHNA survey respondents reported having trouble saving money, there was significant variation in reports of having trouble saving money across racial/ethnic groups, age groups, gender identity, educational attainment, and parent status (Figure 25). The prevalence of barriers to saving money was highest among respondents with some college/certificate program education (75%), Black respondents (67%), Latino respondents (66%), parents of children <18 years of age (64%), and multi-racial (63%) respondents. APPENDIX I includes additional analyses of the survey questions on financial troubles.

Figure 25. Percent Boston CHNA Survey Respondents Reporting Having Trouble with Saving Money, by All Respondents and Selected Indicators, 2019
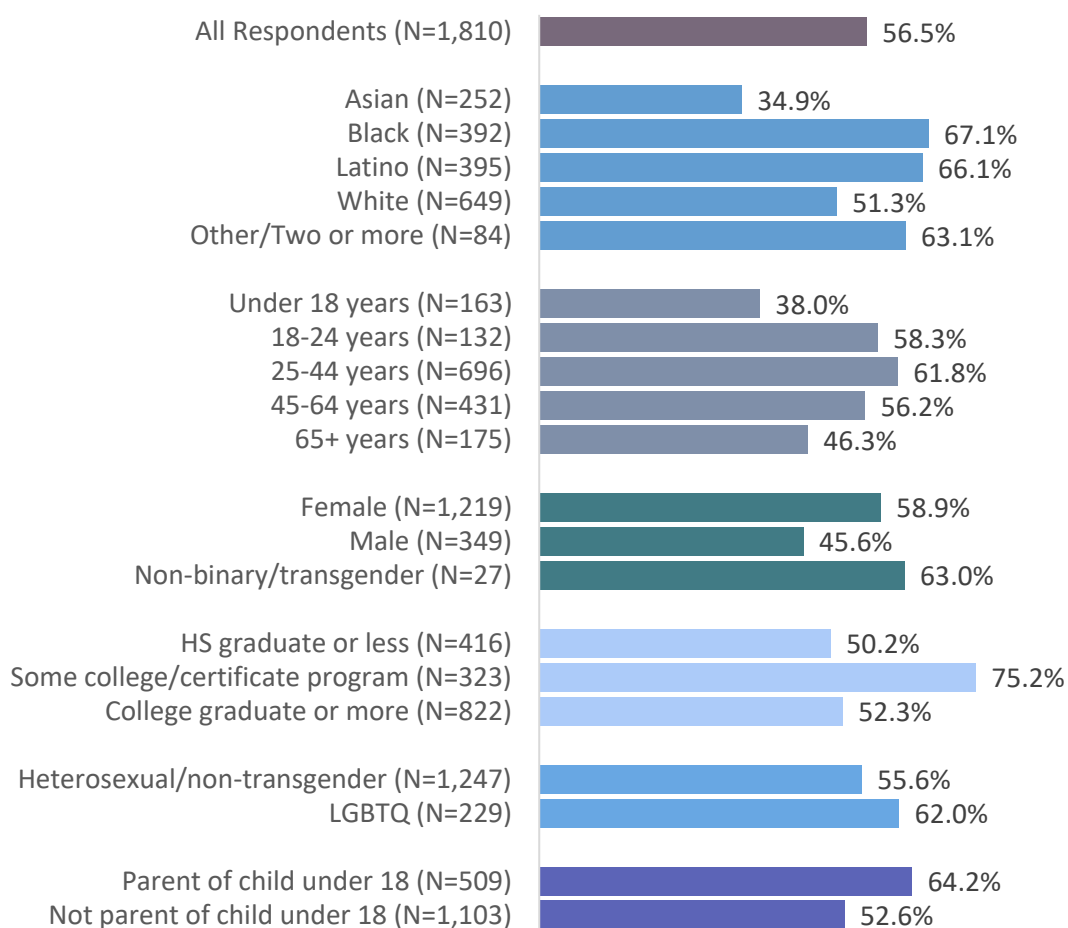
Category	Percent
All Respondents (N=1,810)	56.5%
Asian (N=252)	34.9%
Black (N=392)	67.1%
Latino (N=395)	66.1%
White (N=649)	51.3%
Other/Two or more (N=84)	63.1%
Under 18 years (N=163)	38.0%
18-24 years (N=132)	58.3%
25-44 years (N=696)	61.8%
45-64 years (N=431)	56.2%
65+ years (N=175)	46.3%
Female (N=1,219)	58.9%
Male (N=349)	45.6%
Non-binary/transgender (N=27)	63.0%
HS graduate or less (N=416)	50.2%
Some college/certificate program (N=323)	75.2%
College graduate or more (N=822)	52.3%
Heterosexual/non-transgender (N=1,247)	55.6%
LGBTQ (N=229)	62.0%
Parent of child under 18 (N=509)	64.2%
Not parent of child under 18 (N=1,103)	52.6%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups ($p < 0.05$): race/ethnicity, age, gender identity, educational attainment, and parent status

Receipt of assistance from an organization is an important indicator of financial insecurity. This indicates the challenge of living paycheck to paycheck and not being unable to save money for emergencies, a common theme that emerged in focus groups and interviews. When asked about their receipt of assistance from an organization or program in the past year, 16.1% of Boston CHNA survey respondents reported receiving food assistance (Figure 26). Nearly one in ten respondents (9.8%) indicated receipt of housing assistance, and around 7% reported receiving transportation-, medication-, and utility-related assistance.

Figure 26. Percent Boston CHNA Survey Respondents Reporting Receiving Assistance from Organization or Program in Past 12 Months, by Type of Assistance (n=1,773), 2019

Type of Assistance	Percent
Have not received assistance/NA	48.5%
Food	16.1%
Housing	9.8%
Transportation	7.8%
Medications	7.5%
Utility Bills	7.1%
Education	5.4%
Childcare	3.4%
Job search or training	3.4%
Translation/interpretation	2.3%
Care for elder or disabled	2.3%
Legal Issues	2.1%
Immigration issues	1.0%
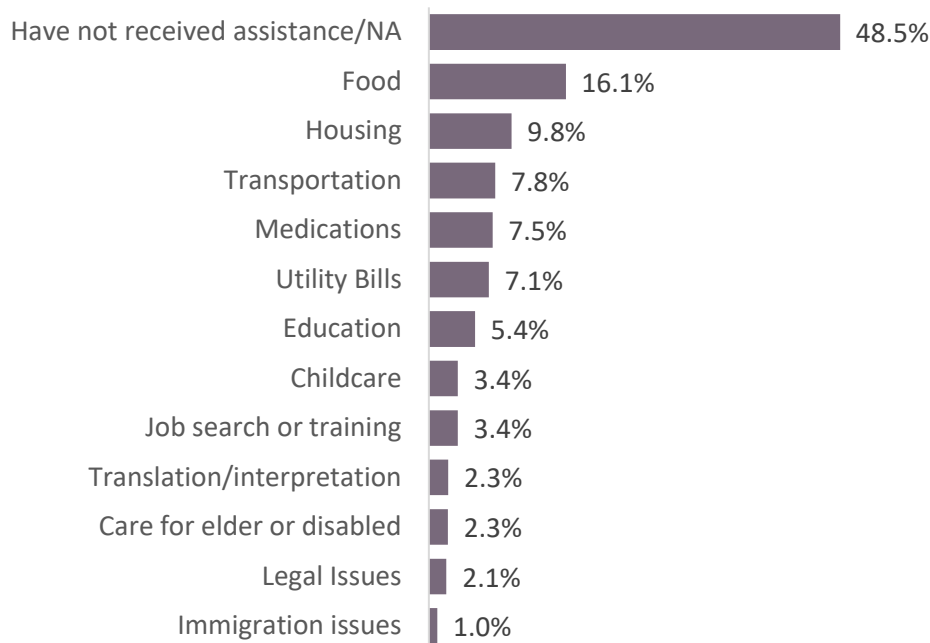
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Multiple responses were allowed; therefore, percentages may not add up to 100%; Percentage calculations do not include respondents who selected "prefer not to answer/don't know"

Food Insecurity

Why is This Important?

Food insecurity—not having reliable access to a sufficient quantity of affordable, nutritious food—is directly related to financial insecurity. Few Americans meet nutritional guidelines, as indicated by daily consumption of fruit and vegetables.[17] Inadequate financial resources and limited access to healthy, affordable food contribute to these patterns.[18,19] Food insecurity has substantial negative effects on health: research has shown that people experiencing food insecurity have lower nutritional intakes, increased rates of mental health problems and depression, higher rates of diabetes and hypertension, and worse oral health.[20]

> "I'm working three jobs and I can barely afford food; I buy whatever I need to feed my kid and that's it." — From a key informant interviewee

Key Findings in This Section

The expense and accessibility of healthy food was a key area of concern shared by focus group participants and interviewees. While more affluent neighborhoods were described as having substantial access to healthy food, lower income neighborhoods, most commonly communities of color, were described as having few grocery stores and a prevalence of fast food and convenience stores. The proportion of Boston adults experiencing food insecurity has declined from 2010 to 2017; however, 17% of residents still experience food insecurity. Black, Latino,

and foreign-born residents are far more likely to report being food insecure than White or U.S.-born residents. Nearly 20% of Boston residents receive benefits from the Supplementation Nutrition Assistance Program (SNAP). In focus groups, food assistance programs were described as filling a critical gap for those facing difficulty accessing food. Enhancing food access through expansion of community gardens, food prescription programs, and hours and selections at food pantries was suggested.

Experiences with Food Insecurity

Key informant interviews and low-income focus group participants across neighborhoods discussed the challenge of not having enough money to afford food. As one focus group participant remarked, *"I'm working three jobs and I can barely afford food; I buy whatever I need to feed my kid and that's it."* While housing might be the largest cost to a family's budget in Boston, the cost of food was still challenging for many. As one key informant explained, *"A lot of people spend money on food after utilities and health care; whatever is left goes to food."* Focus group participants echoed this sentiment and described having to eat canned or processed food that contain high levels of sodium and low-nutritional value because they felt like that was what they could afford.

Focus group and interview participants identified seniors and children as being especially vulnerable to being food insecure. Key informants who worked with seniors described mobility and mental health issues that compounded challenges for them to access healthy food. One key informant shared, *"Many seniors are homebound and food delivery is one of their only contacts with the outside world."* Those who worked with children explained that food insecurity impacts a child's stress levels, ability to pay attention at school, lower test scores, and absences.

Quantitative data indicate that over one in five Boston residents reported being food insecure, in that it was sometimes or often true that the food they have purchased did not last and they did not have money to get more. Experiences with food insecurity varied by population group (Figure 27). In aggregated 2013, 2015, and 2017 BBRFSS data, Latino (39.1%) and Black (34.5%) residents were significantly more likely than White residents (10.7%) to report being food insecure as were foreign-born residents compared to U.S. born residents. Food insecurity data by neighborhood, which can be found in APPENDIX I, indicate that Mattapan, Roxbury, Dorchester, and East Boston had a significantly higher percentage of residents than the rest of Boston who reported being food insecure.

Figure 27. Percent Adults Reporting Food Purchased Did Not Last and Did Not Have Money to Get More, by Boston and Selected Indicators, 2013, 2015 and 2017 Combined
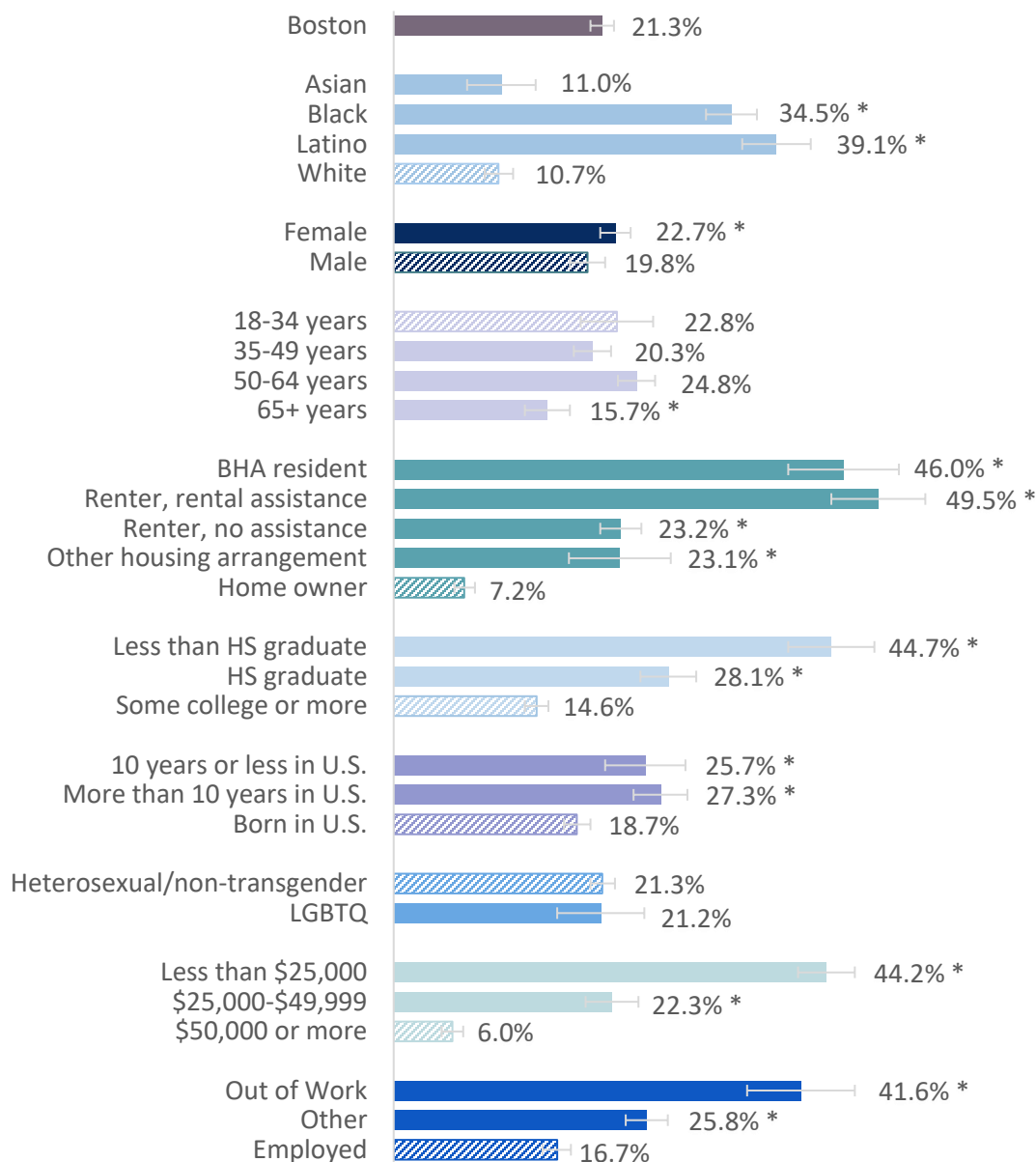
Category	Percent
Boston	21.3%
Asian	11.0%
Black	34.5% *
Latino	39.1% *
White	10.7%
Female	22.7% *
Male	19.8%
18-34 years	22.8%
35-49 years	20.3%
50-64 years	24.8%
65+ years	15.7% *
BHA resident	46.0% *
Renter, rental assistance	49.5% *
Renter, no assistance	23.2% *
Other housing arrangement	23.1% *
Home owner	7.2%
Less than HS graduate	44.7% *
HS graduate	28.1% *
Some college or more	14.6%
10 years or less in U.S.	25.7% *
More than 10 years in U.S.	27.3% *
Born in U.S.	18.7%
Heterosexual/non-transgender	21.3%
LGBTQ	21.2%
Less than $25,000	44.2% *
$25,000-$49,999	22.3% *
$50,000 or more	6.0%
Out of Work	41.6% *
Other	25.8% *
Employed	16.7%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data show percentage of adults reporting it was sometimes or often true that the food didn't last and they did not have money to get more; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

The 2019 Boston CHNA Community Survey asked a similar food insecurity question to Boston residents. Among this sample, one-third of respondents indicated that in the past 12 months they felt it was sometimes or often true that they worried that their food would run out before they had money to buy more (Figure 28). Examining data by primary language spoken, nearly two-thirds of the survey respondents (63.2%) who spoke Haitian Creole reported being food insecure, although it should be noted that the sub-sample only included 54 respondents. More than half of Spanish-speaking survey respondents (51.8%) reported feeling food insecure.

Figure 28. Percent Boston CHNA Survey Respondents Reporting That It Was Sometimes or Often True That They Worried That Their Food Would Run Out Before They Got Money to Buy More in Past 12 Months, by All Respondents and Primary Language Spoken, 2019

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Question was worded: "In the last 12 months, have you worried that your food would run out before you got money to buy more?" and respondents were asked to select one of the following response options: often true, sometimes true, never true, and prefer not to answer; Percentage calculations do not include respondents who selected "prefer not to answer"

Being on Medicaid is another indicator of financial insecurity and another potential risk factor for food insecurity. Food insecurity questions are now being asked of MassHealth patients in the new Accountable Care Organizations (ACOs) in the city. Among MassHealth patients screened in primary care settings in the Partners Health care System and Boston Medical Center, 33% indicated that in the past 12 months, they were worried they would run out of food before they had money to buy more as well as that the food they had bought did not last and they did not have money to buy more (Table 6 and Table 7).

Table 6. Boston MassHealth Patients from Partners Health care and Boston Medical Center Screened for Social Needs and Worried Their Food Would Run Out in the Past 12 Months

Total Screened	# Worried Food Would Run Out	% Worried Food Would Run Out
7,848	2,605	33%

DATA SOURCE: Social Needs Screening Data, Partners Health care and Boston Medical Center (BMC), 2018
NOTES: Analyses only among MassHealth ACO primary care patients and Boston residents
Positive screen for patients who indicated it was *often* or *sometimes true* that within the past 12 months, they worried whether food would run out before they had money to buy more.

Table 7. Boston MassHealth Patients from Partners Health care and Boston Medical Center Screened for Social Needs Who Ran Out of Food in the Past 12 Months

Total Screened	# Ran Out of Food	% Ran Out of Food
7,863	2,616	33%

DATA SOURCE: Social Needs Screening Data, Partners Health care and Boston Medical Center (BMC), 2018
NOTES: Analyses only among MassHealth ACO primary care patients and Boston residents
Positive screen for patients who indicated it was *often* or *sometimes true* that within the past 12 months, the food they bought just didn't last and they didn't have money to get more.

Additional food insecurity data on the percentage of Boston residents who reported feeling hungry but did not eat because they could not afford food, by selected characteristics and by neighborhood, can be found in APPENDIX I.

Use and Perceptions of Food Assistance and Access

Residents across multiple focus groups discussed that assistance programs and community services are critical to help those who are challenged with affording food. Focus group participants described community gardens and farmer's markets as strengths in their communities that can be leveraged; though participants stressed that it is imperative that these initiatives continue to consider cost and accept SNAP benefits. Community gardens were described to have a dual focus of cleaning up neighborhood land and ensuring access to affordable food. Specific organizations that were mentioned as assets include The Urban Farming Institute and Mattapan Food and Fitness Coalition. In Chinatown, key informants described the opportunity to create more roof-top community gardens to provide healthy food and address environmental concerns in the neighborhood. It was noted that engaging young people in these initiatives is imperative for sustainability and intergenerational connections.

Nearly 20% of Boston residents receive benefits from the Supplementation Nutrition Assistance Program (SNAP) (formerly food stamps) (Figure 29). For Dorchester (zip codes 02121, 02125) and Roxbury, approximately one-third of residents receive SNAP benefits. Rates are significantly higher among Dorchester, Roxbury, Mattapan, and the South End than Boston overall.

Figure 29. Percent Households Receiving Food Stamps/SNAP Benefits, by Boston and Neighborhood, 2013–2017
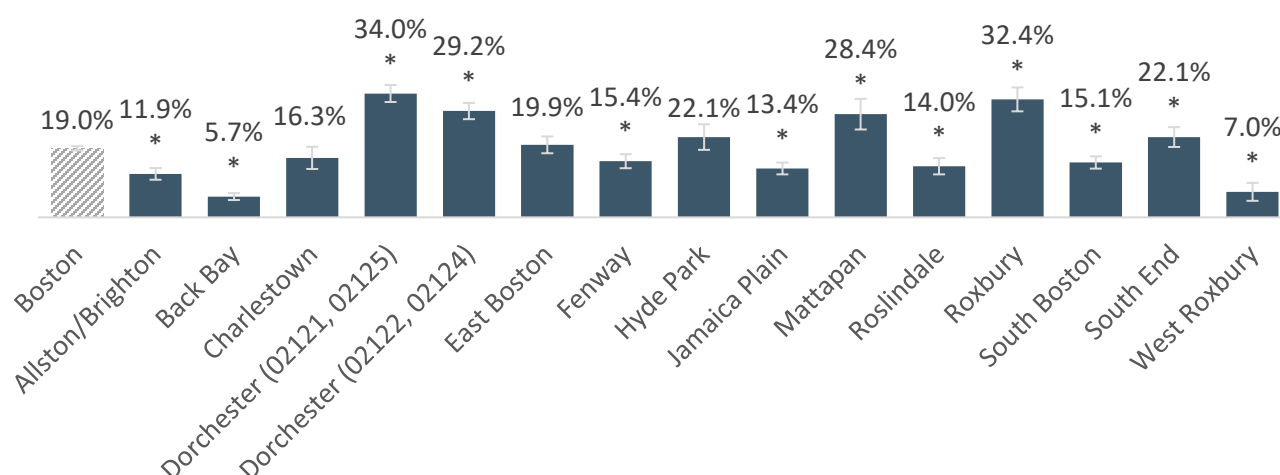
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Further, there were suggestions to strengthen initiatives that address food access from a clinical perspective, where practitioners can prescribe services and are reimbursed as part of the ACO plans. One interviewee shared, *"We need to be looking into things like Medicaid reimbursements for food prescriptions and health incentive programs for SNAP benefits that incentivize residents to buy healthy food."* Similarly, senior focus group participants discussed the positive impact of these initiatives with one sharing, *"One benefit about being a patient at BMC is that in the Spring and Summertime you can have fresh vegetables and fruit from their rooftop garden."* Other suggestions from key informants include: strengthening the network of

food distributors, especially in low-income communities; giving residents financial independence to have autonomy of what they can purchase with SNAP benefits; having food pantry hours that are accessible to working families; and providing healthier options at food pantries to include more fresh produce, meat, and dairy.

SOCIAL AND PHYSICAL ENVIRONMENT – WHAT IS THE COMMUNITY CONTEXT FOR BOSTON RESIDENTS?

Housing

Why is This Important?

Where people live is integral to their daily lives, health, and well-being. The conditions in the home and neighborhood environment may promote health or be a source of exposures that may increase the risk of adverse health outcomes.[21] Housing is generally the largest household expense. For homeowners, it can be an important source of wealth.[22] However, housing instability and stress of housing affordability have been found to be associated with poorer mental health outcomes and disruptions in work, school, and day care arrangements.[23] Housing instability has been associated with poorer outcomes for children related to risk for developmental delays, being underweight, and lower school attendance. Poor housing quality can have direct negative health impacts such as respiratory conditions (e.g., asthma) due primarily to poor indoor air quality—and can be one of the strongest drivers for asthma-related emergency department visits among children. Housing conditions can also result in cognitive delays in children from exposure to neurotoxins (e.g., lead), and accidents and injuries as a result of structural deficiencies.[24]

Key Findings in this Section

The high and rising cost of housing in Boston was a main theme that emerged in discussions with focus group participants and interviewees. Two-thirds (65%) of housing units across Boston are renter-occupied and renter households spend an average of $1,445 per month on housing. More than half of those in renter-occupied units are housing cost-burdened, meaning they spend more than 30% of their income on housing.

> **More than half of Boston renter households spend 30% or more of their income on housing costs.**

A significantly higher proportion of households in East Boston, Fenway, Roslindale and South Boston are cost-burdened than those in other neighborhoods; additionally, Black home owner and renter households are significantly more likely to spend 30% or more of their income on housing, compared to the Boston average. Assessment participants' perceptions of increasing housing costs are mirrored in the statistics: from 2011 to 2016 median single-family house prices increased across every neighborhood in Boston and the median price increased by 48% in Boston overall. Additional pressures include gentrification, long wait lists for housing assistance programs, and for some, housing discrimination. Overcrowding, homelessness, and poor quality housing were reported to be consequences of a tight and expensive housing market. Housing costs comprise a large and ever-increasing portion of household budgets, interviewees and focus group members report, leaving few resources for other needs such as health care, medicine, or nutritious food. There was general consensus across conversations

that more affordable housing is needed in Boston, although quantitative data suggest that the proportion of affordable housing to market rate housing is decreasing.

Housing Burden and Affordability

Lack of affordable housing was a prominent theme that arose across all key informant interviews and focus groups. Participants across geographies consistently shared that the rising cost of living in Boston was a major day-to-day concern. Most participants reported a need for more affordable housing for low and moderate-income levels. Quantitative data also indicate that the proportion of affordable housing to market rate is decreasing, rather than increasing. Even with the growth in development, the proportion of affordable housing units in total production in Boston has been falling since 2003. In the period 1996 to 2003, more than 39 percent of all permits were for affordable units. In the following period, 2004–2010, the proportion was down to less than 26 percent, and from 2011-2016, the proportion has fallen to about 18 percent.[25] It should be noted, however, that in 2018, the City of Boston documented that the number of income-restricted affordable units in Boston was 19%, or nearly one in five. This is the highest ratio of income-restricted housing in any major city in the United States.[26] Boston has further committed to maintain this one in five ratio as part of the housing production and preservation plan that is currently underway, and is working to raise the number of income-restricted affordable units from 54,000 to 70,000 by the year 2030.

Several focus group and interview participants noted that high housing costs were particularly difficult for people with low or fixed incomes, such as seniors and residents who work low-wage jobs. Many described the influx of housing developments being built across the city but perceived that the cost of these units was often inaccessible to the average resident. One focus group participant shared, *"The people who live here do not have access to the new apartments coming up in East Boston. How are we supposed to access rents that are $2,000-3,000 and maintain a life?"*

Housing cost data aligns with resident and leader concerns cited during focus groups and interviews. Housing costs are a larger economic burden for renters in the city. (See APPENDIX I for additional data on percent of housing units that are renter- and owner-occupied.) According to the American Community Survey, more than half (52.1%) of renter-occupied units and one-third (35%) of owner-occupied units across Boston spent 30% or more of their income on housing costs (Figure 30 and Figure 31). A significantly higher proportion of residents in rental units in Roslindale (62%), South Boston (60%), Fenway (59%), East Boston (59%), and Jamaica Plain (58%) spent at least 30% of their income on housing costs, compared to the Boston overall average. Similarly, compared to Boston overall, a significantly higher proportion of residents of owner-occupied units in East Boston (47%), South Boston (47%), Roslindale (45%), Hyde Park (43%), and Fenway (41%) spent at least 30% of their income on housing.

Figure 30. Percent Housing Units Where 30% or More of Income Spent on Monthly Housing Costs, by Renter, by Boston and Neighborhood, 2013–2017
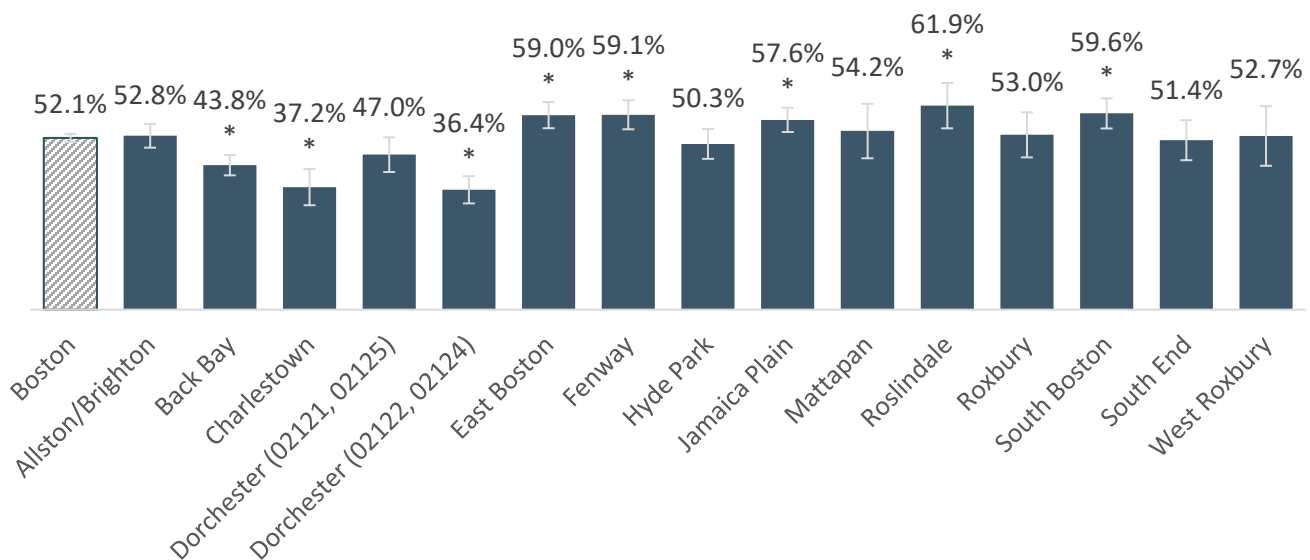
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05)

Figure 31. Percent Housing Units Where 30% or More of Income Spent on Monthly Housing Costs, by Owner with Mortgage, by Boston and Neighborhood, 2013–2017
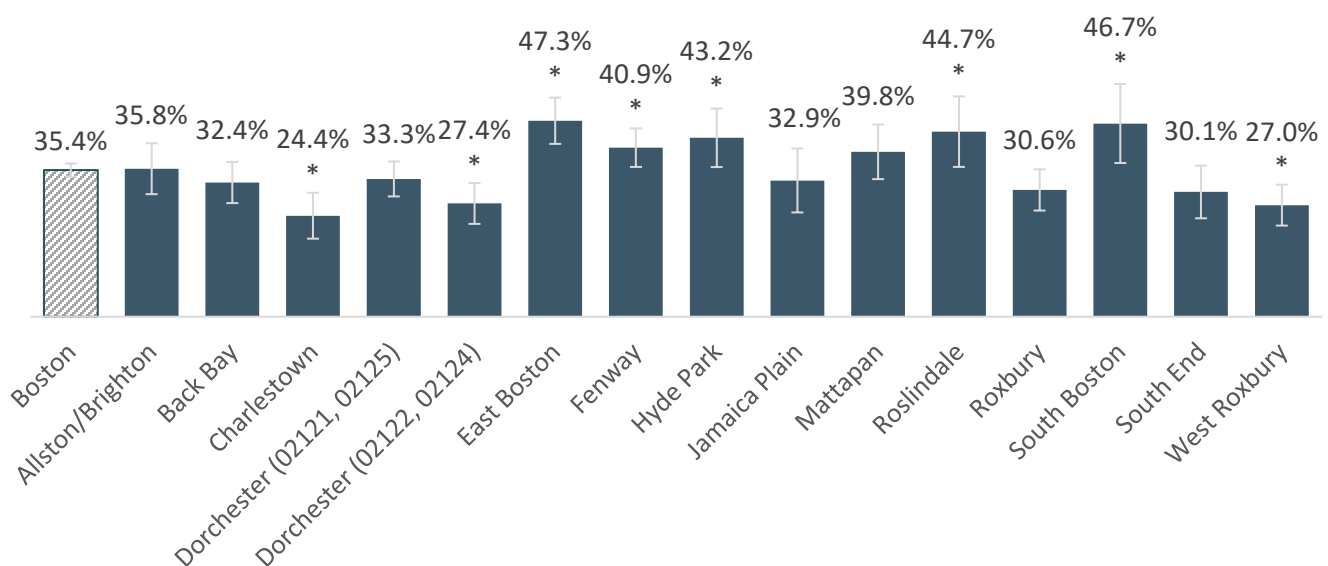
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05)

As discussed above, across Boston and each of the four largest racial/ethnic groups, a higher proportion of renter-occupied units spent at least 30% of their income on housing compared to home owners (Figure 32). In 2017, 48% of Black households that own their homes and 59% of Black households that rent their homes were spent 30% or more of their income on housing, compared to the Boston average, a significant difference. In contrast, 25% of White households that own their homes and 41% of White households that rent their homes spent at least 30% of their income on housing, significantly less than the Boston average.

Figure 32. Percent Housing Units Where 30% or More of Income Spent on Monthly Housing Costs by Housing Tenure, by Boston and Race/Ethnicity, 2017
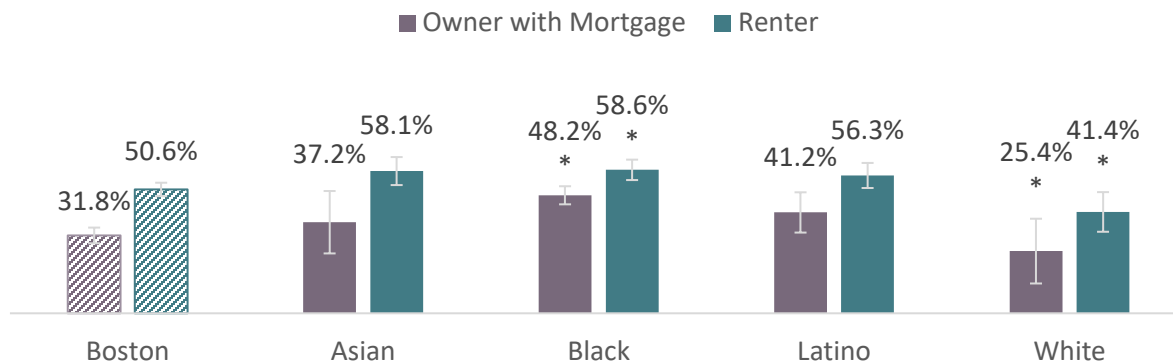
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017
NOTE: Asterisk (*) denotes race/ethnicity estimate was significantly different compared to the Boston estimate (p < 0.05)

While the previous graphs indicated that Roslindale, South Boston, Fenway, East Boston, and Jamaica Plain had the highest percentage of residents spending at least 30% of their income on housing costs, these were not the neighborhoods, except South Boston, with the highest rental costs. South Boston, Back Bay, and Allston/Brighton had the highest monthly rental prices. Dorchester ($812) and Roxbury ($917 and $1,074) had the lowest rental costs per month. Overall, Boston households spent an average of $1,445 per month on housing if they rent and $2,293 per month if they owned their housing unit with a mortgage. APPENDIX I includes detailed data on average monthly housing costs by zip code. Compared to similarly sized cities, these figures are similar to Washington DC, but less expensive than San Francisco, CA and more expensive than Denver, CO.

Median monthly housing costs for renter households differed by race/ethnicity. The average rent for White ($1,849) households was significantly higher than Boston overall, while it was significantly lower for Black ($1,234) and Latino ($1,142) households. Rental costs for Asian households ($1,527) were similar to the average across Boston (Figure 33).

Figure 33. Median Monthly Housing Costs, by Boston and Race/Ethnicity, 2017
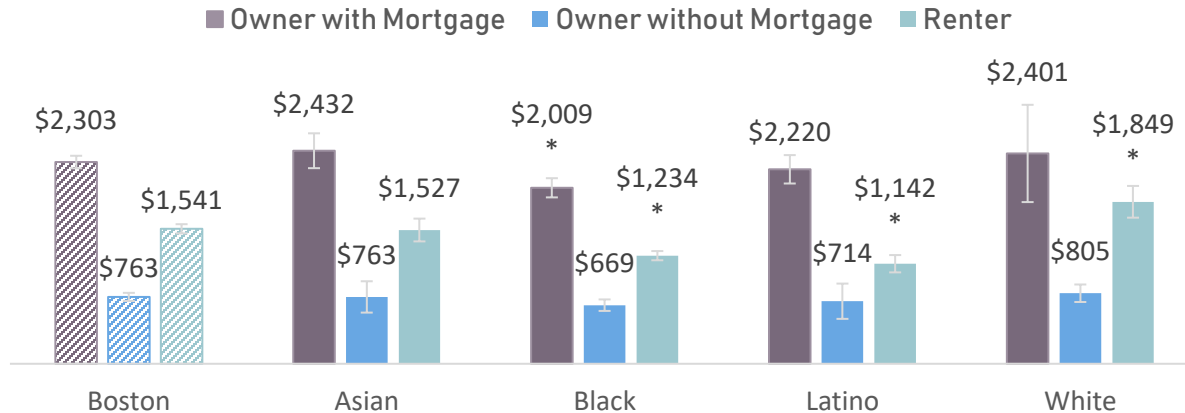
■ Owner with Mortgage ■ Owner without Mortgage ■ Renter

DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017
NOTE: Asterisk (*) denotes race/ethnicity estimate was significantly different compared to the Boston estimate (p < 0.05)

Given the concerns raised about housing affordability in focus groups and interviews, it is not surprising that housing costs have risen in the past several years. From 2011 to 2016, the median price for single-family homes in Boston increased by 48%, from $359,000 (2011) to $530,000 (2016) (See APPENDIX I for detailed tables on home prices.) Home prices increased in each neighborhood over this period for which data were available. The largest increase in home prices was seen in East Boston (152%) and Roxbury (107%).

According to key informants and most focus group participants who identified as low-income, housing costs comprise a large part of spending for their households, leaving few resources for other needs such as health care, medicine, or nutritious food. One interviewee shared, "*Many folks who are rent burdened are paying [up to] 50% of their income in rent; most of their resources going to this very essential need. The choices that people have to make—whether its not being able to ever take a vacation, not being able to purchase clothing or pay your bills... causes immense stress and mental health issues for care takers and children.*" The notion that children adopt the stressors of rising housing costs was also noted by multiple key informants with experience working with children. One shared, "*Kids can feel when their parents are stressed because maybe the landlord raised the rent or something broke in the house. They're one situation away from eviction.*"

Further, some interview and focus group participants reported instances of residents staying in emotionally or physically un-healthy environments because they could not afford other circumstances. For example, one interviewee shared, "*[Lack of] affordable housing affects the most vulnerable in a lot of ways. It can create unsafe situations in cases like abuse or violence in the home when there is no other place to go.*" Participants indicated that residents who are undocumented and those that do not speak English are particularly vulnerable for this type of abuse.

Similar to focus group and interview participants, Boston CHNA community survey respondents also indicated that housing costs were a heavy burden for their household. As shown in Figure 34, one in five (19.5%) Boston CHNA community survey respondents reported having trouble paying their rent or mortgage. Survey responses to this question significantly differed by

race/ethnicity, age, gender identity, educational attainment, LGBTQ status, and parent status. Data by these selected indicators are available in APPENDIX I for the percentage of Boston CHNA survey respondents who reported experiencing challenges in paying their monthly utilities.

Figure 34. Percent Boston CHNA Survey Respondents Reported Having Trouble Paying Rent/Mortgage, by All Respondents and Selected Indicators, 2019
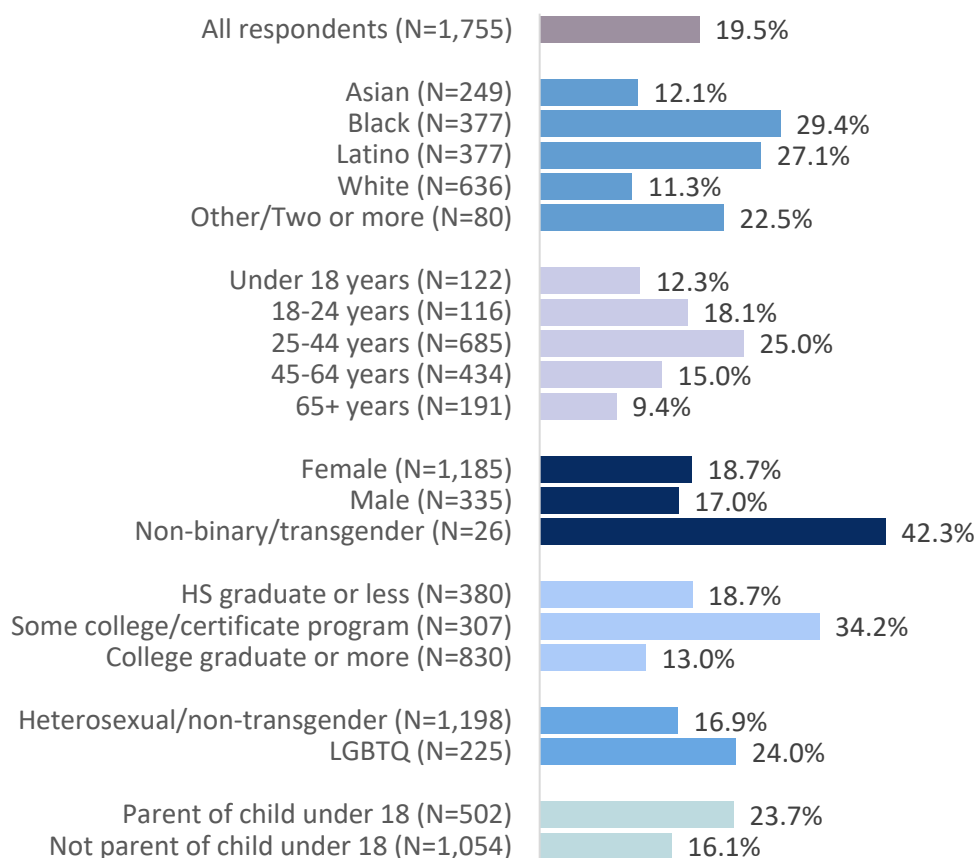
Indicator	Percent
All respondents (N=1,755)	19.5%
Asian (N=249)	12.1%
Black (N=377)	29.4%
Latino (N=377)	27.1%
White (N=636)	11.3%
Other/Two or more (N=80)	22.5%
Under 18 years (N=122)	12.3%
18-24 years (N=116)	18.1%
25-44 years (N=685)	25.0%
45-64 years (N=434)	15.0%
65+ years (N=191)	9.4%
Female (N=1,185)	18.7%
Male (N=335)	17.0%
Non-binary/transgender (N=26)	42.3%
HS graduate or less (N=380)	18.7%
Some college/certificate program (N=307)	34.2%
College graduate or more (N=830)	13.0%
Heterosexual/non-transgender (N=1,198)	16.9%
LGBTQ (N=225)	24.0%
Parent of child under 18 (N=502)	23.7%
Not parent of child under 18 (N=1,054)	16.1%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups (p < 0.05): race/ethnicity, age, gender identity, educational attainment, sexual orientation, and parent status

Similar to patterns that emerged in focus groups, Boston CHNA survey respondents reported their reasons for moving as related to the shifting housing market, costs of living, and family circumstances. Among the Boston CHNA survey respondents who reported moving in the past five years, the primary reasons for their move were: to be closer to work, school or family (19.5%); and issues paying rent or mortgage (16.3%) (See APPENDIX I for more detailed data).

Gentrification and Housing Costs

Gentrification, generally used to describe the displacement of low-income communities by affluent outsiders, was mentioned across **all** focus groups and interviews and was directly correlated with unaffordable housing costs. Many focus group participants spoke of experiences being *"priced out"* of neighborhoods and perceived that there was an influx of more affluent, White, community residents across the city. Focus group participants and key informants shared that while displacement was impacting all of the neighborhoods across Boston, it was

disproportionately impacting communities of color, especially those in Dorchester, Roxbury, Mattapan, and East Boston. One informant summarized, *"White community members are flocking to Dorchester and Roxbury when it's historically consisted of low-income communities of color."*

Further, gentrification was perceived by multiple key informants to have resulted in families living further away from social service agencies and specialty care, further exacerbating issues of access. One interviewee explained how, *"There's been a dramatic increase in housing costs in the last several years. You're seeing more [immigrant] families unable to meet the pressure and are being pushed out to places like Quincy and Randolph because they cannot afford Dorchester...making it harder to access socialization for seniors, health care, linguistic resources. What is going to happen when a majority of constituents are no longer in the city?"*

Gentrification often was discussed in a negative light, with residents perceiving that gentrification in their neighborhoods contributed to increasing rents and property values. East Boston residents discussed the challenges of living a quality life as housing costs steadily becoming unaffordable. One shared, *"Rent is becoming impossible in East Boston...it's hard to have a good quality of life here. There are all of these high rises, but we don't get to access those nice things. People are coming here to take what we have been building for decades."*

Homeownership was discussed as a means to acquire wealth and stability; however, it was noted by several key informants that opportunities for homeownership were not as accessible to communities of color. One interviewee explained how children from neighborhoods being impacted by gentrification are growing up without models of what homeownership can look like in non-White communities. One interviewee shared, *"We live in a culture where many of our Black and Latino kids only know renting. They associate homeownership with White families and something as unattainable for their families."*

While most assessment participants viewed gentrification negatively, a few spoke of the unique opportunities it posed if done correctly through new investments in building and infrastructure and increased economic activities. One interviewee shared, *"Many people are – rightly – concerned about gentrification, but at least there is interest and activity in Chinatown and conditions are rising. It could have continued on the downward trajectory, being abandoned and forgotten, but instead there is investment and interest, and that's a better position to be in."*

Housing Assistance

Across many focus groups and in several key informant interviews, residents noted that the demand for Section 8 and other subsidy programs is much larger than what is available, resulting in very long wait lists. (Section 8 refers to Section 8 of the Housing Act of 1937 and is a public program which authorizes payment rental housing assistance to private landlords on behalf of low-income households.) For example, residents from Roxbury and Dorchester reported instances of being denied housing because landlords did not want to accept Section 8 housing. One shared, *"I've been told that I can't live in certain places because the landlord was no longer renting to Section 8 tenants."* Other participants in the group agreed and one added, *"Landlords don't want to [accept] section 8 anymore so they don't update the apartment because in order to receive Section 8 the place has to be up to code."* According to multiple key informants and focus group participants, these issues were compounded for residents who are disabled, elderly, or for those with a criminal record.

Those working with older adults expressed concern for seniors on fixed incomes who are not able to remain in their homes and then must face long wait lists for affordable senior housing. One interviewee shared, *"Housing is a big issue for seniors who are retired or disabled. We see retired elders who are not eligible for housing, or if they are, wait lists are more than 5 years long for accessible housing."* Similarly, a public housing resident from Dorchester explained, *"We have elderly folks who are being displaced because [public] housing units aren't accessible [for the disabled] and there are no call buttons in case they need help."*

Overcrowding

The housing cost burden has cascading effects on residents' home and social environment. Overcrowding, housing instability, and homelessness are a few of the themes that emerged in discussions with focus group and interview participants. For example, focus group participants who identified as low-wage workers explained that in order to make ends meet, it was often a necessity to live in multigenerational households, with roommates, or with multiple families. One focus group participant shared, *"I am trying to get ahead so I work two jobs overnight, but because I can't afford rent on my own, I have a lot of roommates. You live with too much stress because you're working too hard, and then you have to come back home to a lot of people who might be noisy or unclean."* Further, a few key informants described resident requirements imposed on city employees that are increasingly burdensome as the cost of housing becomes more expensive. One interviewee shared, *"I can't tell you how much I've heard of younger city employees having multiple jobs, needing to supplement their income with a second or third job. It's hard for people, for working families to make ends meet [with these requirements]."*

Overcrowding is defined as more than one person per room living in a housing unit. According to those respondents of the American Community Survey, one in ten residents in East Boston (9.8%) experienced overcrowded housing – a proportion that was triple the average across Boston (3.1%) (Figure 35).

Figure 35. Percent Housing Units Experiencing Overcrowding, by Boston and Neighborhood, 2013–2017
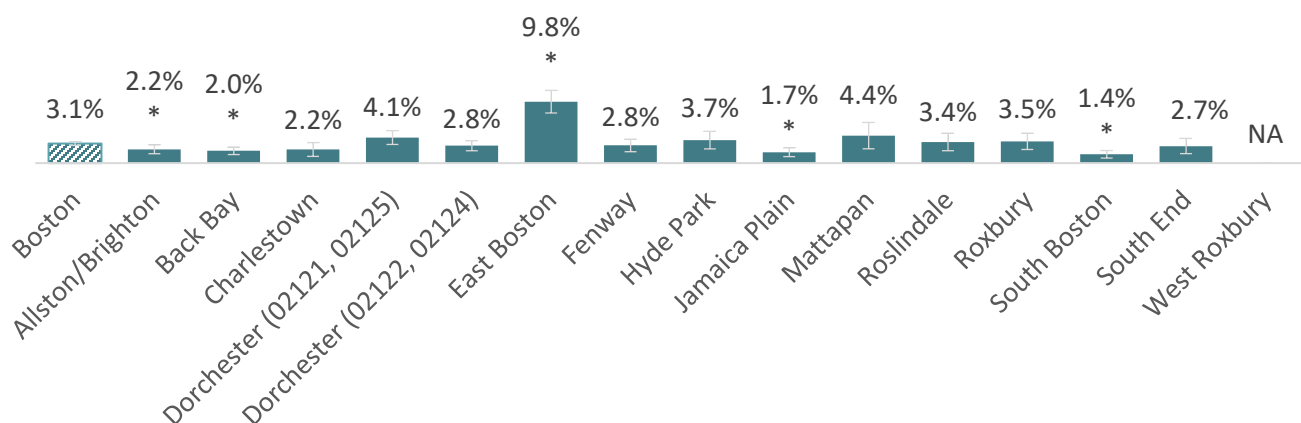
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Overcrowding is defined as more than one person per room; Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk denotes where the neighborhood estimate is significantly different compared to the Boston estimate (p<0.05); Error bars show 95% confidence interval; NA denotes where data are suppressed due to insufficient sample size

Housing Discrimination

Housing discrimination was an issue that was discussed in a few focus groups. Specifically, parents of younger children noted that they felt landlords discriminated against families, especially single-parent households. One East Boston resident shared, "*There are owners of houses and the first thing they ask you is whether or not you have kids and how many. If you have kids, they don't want to rent to you.*" Focus group participants who resided in Allston/Brighton also spoke of challenges finding housing as parents. One explained, "*In this area, it's very difficult to find apartments because it's expensive and they ask for so many [requirements] –and they always ask about children too – they don't like if you have children. It's difficult to find a nice place and if you find it, the rest is so expensive.*" Other focus group participants who reported experiencing housing discrimination include participants who identified as: those in recovery or actively using, residents with a criminal record, and communities of color.

In 2018, there were 51 discrimination cases relating to housing filed in Boston by Massachusetts Commission Against Discrimination (MCAD), compared to 44 cases filed in Boston in 2017. Among the housing discrimination cases in 2018, six in ten cases were filed based on discrimination against a protected disability status (61%) (Figure 36). Nearly four in ten (39%) housing discrimination cases in 2018 were filed due to discrimination based on race. Approximately one in ten discrimination cases was attributed to public assistance (12%), sex (12%), sexual orientation (12%), age (10%), and retaliation (10%).

Figure 36. Percent Housing Discrimination Cases Filed in Boston (N=51), by Protected Category, 2018

Category	Percent
Disability	60.8%
Race	39.2%
Public assistance	11.8%
Sex	11.8%
Sexual orientation	11.8%
Age	9.8%
Retaliation	9.8%
Other	7.8%
Gender identity	5.9%
National origin	3.9%
Creed	2.0%
Lead paint	2.0%
Marital status	2.0%
Veteran status	2.0%
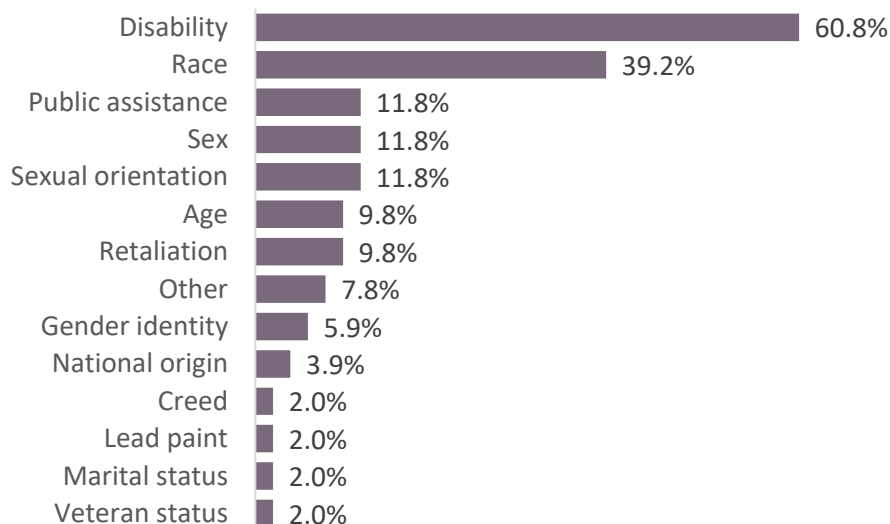
DATA SOURCE: Massachusetts Commission Against Discrimination (MCAD), 2018
NOTES: Data are arranged in descending order; Numbers represent cases filed by the housing jurisdiction in the Boston; Protected category is a characteristic of a person which cannot be targeted for discrimination and can differ based on the type of alleged discrimination - common protected categories include race, gender, gender-identity, ethnicity, age, national origin, sexual orientation, military stator and disability; A case can be filed for or involve more than one protected category

Homelessness

Homelessness was discussed as a concern across focus group and key informant geographies, especially with residents who lived in Chinatown, Downtown, and East Boston. Focus group participants from these neighborhoods perceived that homelessness was on the rise and often related those who were homeless with mental health or substance use issues. However, key informants with expertise in housing indicated that homelessness impacts a diverse range of residents across the city regardless of health status, race, or family makeup.

In 2018, there were an estimated 6,188 residents that were counted as homelessness or housing unstable in Boston (Table 8). It should be noted that these data may not account for residents who are temporarily without a permanent address and are staying with friends or in their car. Among those identified, the majority of homeless residents were staying in emergency shelters (5,427 individuals), followed by transitional shelters (598 individuals), and unsheltered housing (163 individuals). Among this homeless population, four in ten homeless residents identified as Black (45.1%), 36.1% as white, and 17.0% as two or more races. More than 35% identified as Latino (any race). Data of counts over time and shelter bed capacity are provided in APPENDIX I.

Table 8. Total Number of Homeless Individuals Living in Boston, by Race, Ethnicity, and Shelter Type, 2018

| | Sheltered | | | | |
	Emergency Shelter	Transitional Housing	Unsheltered	Total	Percent of Total
American Indian or Alaska Native	13	4	0	17	0.3%
Asian	45	3	5	53	0.9%
Black	2,566	188	36	2,790	45.1%
Native Hawaiian or Other Pacific Islander	38	3	0	41	0.7%
White	1,913	251	70	2,234	36.1%
Multi-race	852	149	52	1,053	17.0%
Total	5,427	598	163	6,188	
Latino	2,079	103	8	2,190	35.4%
Not Latino	3,348	495	155	3,998	64.6%
Total	5,427	598	163	6,188	

DATA SOURCE: U.S. Department of Housing and Urban Development, Continuums of Care, HUD 2018 Continuum of Care Homeless Assistance Programs Homeless Populations and Sub Populations, 2018
NOTE: Safe Haven programs are included in the Transitional Housing category

In 2018, households without children (67%) comprised two-thirds of the homeless population in Boston (Table 9). Three in ten homeless households included at least one adult and one child (31.8%). One percent of homeless households included only children (1%). Emergency shelter was the most common type of shelter for homeless households, followed by transitional housing.

Table 9. Total Number of Homeless Households Living in Boston, by Household Type and Shelter Type, 2018

| | Sheltered | | | | |
	Emergency Shelter	Transitional Housing	Unsheltered	Total	Percent of Total
Households without children	1,806	407	163	2,376	67.4%
Households with at least one adult and one child	1,075	46	0	1,121	31.8%
Households with only children	28	2	0	30	0.9%
Total	2,909	455	163	3,527	

DATA SOURCE: U.S. Department of Housing and Urban Development, Continuums of Care, HUD 2018 Continuum of Care Homeless Assistance Programs Homeless Populations and Sub Populations, 2018
NOTE: Safe Haven programs are included in the Transitional Housing category

In addition to those with mental illness or substance use, key informants also named the following population groups as vulnerable to being homeless: LGBTQ youth and seniors; immigrants; those with criminal records; and single mothers. Of these groups, LGBTQ youth were identified as being especially vulnerable to becoming homeless, particularly for those who identify as transgender or non-binary. LGBTQ youth in focus groups indicated that this was in part due to family rejection, a lack of emotional supports, or limited resources for those who identified as transgender or non-binary. One transgender focus group participant from Jamaica Plain shared, "*For those of us who are homeless, Boston only has single sex shelters. But where does that leave trans people like me?*" It should be noted that Boston has enacted non-discrimination policies in housing and shelters that prohibit discrimination against transgender or gender-nonconforming persons.[27] For example, Boston Public Health Commission is one of the largest shelter providers in New England. Their policy is that transgender guests choose the shelter that corresponds with their gender identity or whichever shelter they feel most comfortable in.

While homelessness was described as impacting diverse groups, the experience of trauma was a reported commonality among them. Several interviews discussed that trauma was a significant challenge to overcoming housing instability. One interviewee illuminated this experience by explaining: "*Many of our [homeless] parents have also suffered from other traumas including childhood traumas, regardless of specific backgrounds (race, culture, community). All parents coming to [homeless shelters] show strong resilience and grit. However, they don't always have the tools to take them out of the day-to-day crisis; once your life spirals, it can be challenging to get out of that, especially if you're walking around with trauma on your back.*"

Additionally, some key informants shared the perception that law enforcement is increasingly being asked to intervene with the homeless population, even if they may not be the appropriate first-responders. One interviewee explained, "*Being homeless is not a crime, but when people see homeless individuals, they assume they might be a criminal and call [the police] to remove them from places.*"

However, key informants noted that compared to other cities, Boston has a sophisticated strategy to addressing chronic homelessness by using real-time data to drive priorities and working with a host of partners across sectors including the public health department, the Boston Housing Authority, and nonprofit organizations including Pine Street Inn, Boston Health care for the Homeless, and St. Francis House, among others. One shared, "*The city has a*

common database that everyone who works with homeless people can access called Efforts to Outcomes. The city hosts the data and produces a quarterly list of the longest-term stayers (i.e. the chronically homeless), who are then prioritized for housing through a matching system."

Interviewees in the field discussed that while up-to-date, centralized data are a key first step to addressing chronic homelessness, more resources are needed for newly homeless families or for residents who have been homeless for a year or less. One interviewee explained, *"Ironically, people who are homeless but [who are not categorized] as "chronic" have fewer options and limited resources."* There was also the perception that the length of stays in homeless shelters is increasing, partly due to long wait lists for subsidized housing, which was described as straining resources for newly-homeless families. One interviewee explained, *"Boston has great shelters in the area that are temporarily housing mothers with young children, but it's hard because [families] may be in the shelter for up to two years because of the inability to find an apartment that accepts Section 8 vouchers."*

Among ACO MassHealth patients who were screened in Partners Health care and Boston Medical Center primary care settings, 17% were indicated that they were homeless or did not have a steady place to live (Table 10).

Table 10. Boston MassHealth Patients from Partners Health care and Boston Medical Center Screened for Social Needs and Are Homeless

Total Screened	# Homeless	% Homeless
7,886	1,320	17%

DATA SOURCE: Social Needs Screening Data, Partners Health care and Boston Medical Center (BMC), 2018
NOTES: Analyses only among MassHealth ACO primary care patients and Boston residents
Positive screen as homeless for patients who indicated that they do not have housing or do not have a steady place to live (e.g., temporarily staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, abandoned building, bus or train station, or in a park)

Housing Conditions

Housing quality and poor housing conditions were themes discussed in several conversations for this data gathering effort. These key points are explored here, yet a deeper dive discussion on specific indoor environmental exposures and health effects of poor housing quality can be found in the Environmental Health section of this report. Participants across most groups voiced concerns about the old housing stock in the city of Boston, specifically mentioning lead, mold, rodents, and insects as issues in their neighborhoods.

However, specific themes arose in focus groups with residents of particular neighborhoods. Focus group participants from Allston/Brighton reported being generally satisfied with the quality of housing in their neighborhoods, citing universities and health care institutions that have made investments to improve their neighborhood's living conditions. One resident shared, *"Living in Allston is very good because the universities are creating a lot of new buildings and resources for the neighborhood to make it nicer."* On the contrary, focus group residents from Chinatown, Dorchester, and East Boston specifically discussed concerns around housing quality in their neighborhoods, citing housing stock in disrepair, overcrowding, and a lack of investments as key issues. Focus group participants from Mattapan and Dorchester perceived that landlords often *"do what they want"* including developing additional units within their buildings without notifying residents. One Mattapan resident shared, *"My landlord is making*

the basement into a 3-bedroom apartment, but they didn't even let us know. I thought construction places are supposed to hold community meetings but they're not, and if they are, if they are making people aware of them." Another focus group participant shared this sentiment and added, *"Some greedy landlords will divide one apartment into multiple tiny units for renters."* Similarly, key informants cited a need for more equitable investments across housing units in Chinatown. One shared, *"There has been a resurgence in the [Chinatown] community over the last eight years. In some cases, buildings where people have lived for a long time have been bought out and/or renovated. But there are also landlords who are not spending the money to keep up their buildings; it would be nice to see more of an investment in these properties."*

Focus group participants who identified as low-income and/or housing insecure indicated that with such high demands for apartments, tenants are less likely to voice concerns of poor housing conditions out of fear of being evicted or losing their home. One East Boston resident shared, *"There are a lot of situations where people are living in housing that is not good and they can't say anything because they are scared to be kicked out."*

Transportation

Why is This Important?

Transportation connects people with and between where they live, learn, play, and work. Transportation can promote health by enabling individuals, families, and communities to access resources and opportunities, including employment, health care, education, and other goods and services (e.g., grocery stores, parks).[28] Active forms of transportation, such as walking and cycling, can also be health promoting, reducing the risk of obesity, diabetes, and cardiovascular disease and improving mental health and community cohesion.[29] Transportation can also have health consequences, including traffic-related accidents, air pollution exposure, and sedentary lifestyles linked with less active forms of transportation.[30]

> "Most [residents] rely on public transportation and it is difficult when the signs are not in their language. They may not understand announcements about delays or emergencies, and it makes them feel insecure about how to navigate." — Key informant interviewee

Key Findings in this Section

Though many residents who participated in focus groups perceived improvements in transportation in recent years, others expressed concerns about cost, timeliness, and accessibility of public transportation especially for the elderly, those with limited English proficiency, and for residents of neighborhoods who have traditionally had limited access to transportation. Slightly over one-third of Boston residents use a personal vehicle to get to work, and another one-third use public transportation; use of public transportation is particularly high in East Boston and Jamaica Plain. On average, Bostonians spend about 11% of household income on transportation-related expenses. Parking and traffic were mentioned as day-to-day concerns for many community residents. Challenges with public transit and transportation programs, including lack of reliability, difficulty navigating the system, overcrowding, and the need to schedule in advance, can make it difficult to keep medical appointments according to

focus group members and interviewees. Efforts such as Go Boston 2030 and bike share programs were seen as positive steps to address the city's transportation challenges.

Views of Transportation

Residents in focus groups across different neighborhoods shared mixed perceptions about transportation. Some participants reported being generally satisfied with transportation access in their neighborhoods, while others voiced concerns about cost, timeliness, and accessibility for the elderly. For example, focus group participants from Allston/Brighton and Jamaica Plain reported being satisfied with transportation in their neighborhoods, citing close proximity to buses and trains. Focus group participants in Mattapan noted improvements to key Mattapan bus routes in recent years. One participant shared, *"The Commuter Rail just opened a stop at Mattapan near Simco from Hyde Park to Mattapan; it used to be such a headache. There are many buses that goes through there[now]- things have gotten better."* Still, Mattapan was described by focus group participants living in other neighborhoods as a neighborhood that needed improvements to public transportation.

Residents in Chinatown reported being satisfied with the proximity of public transportation options but expressed concern with the cleanliness of bus and train platforms. One resident shared, *"I think the subway and bus system are very convenient. But the subways are so dirty, I can always notice strong urine odor by Chinatown station and Tufts Medical Center station."* Similarly, others spoke about the old infrastructure of the city's public transportation system. As one key informant interviewee noted, *"We have an old transit system that needs a lot of investments in order to maintain what we currently have."* Data show that the Massachusetts Bay Transportation Authority (MBTA) is well-used. According to the Regional Indicators report by the Metropolitan Area Planning Council (MAPC), in 2015, the MBTA experienced an average of approximately 32,966,627 passenger trips per month.[31]

Means of Transportation and Transportation Costs

Across Boston, use of a personal vehicle (39%) was the most common form of transportation to work, followed by public transportation (34%), walking (15%), and carpooling (6%) in 2013-2017. Transportation patterns varied significantly across most Boston neighborhoods. Compared to Boston overall, East Boston (58%), Jamaica Plain (43%), Roxbury (40%), Dorchester (37-38%), South Boston (36%), and Allston/Brighton (35%) had a significantly higher proportion of residents who used public transportation to go to work (see APPENDIX I, for significance testing). West Roxbury (17%), Back Bay (23%), Hyde Park (23%), Charlestown (27%), Roslindale (28%), Fenway (28%), and the South End (28%) had a significantly lower percentage of residents who used public transportation to get to work (Figure 37).

Figure 37. Means of Transportation to Work for Population 16 Years and Over, by Boston and Neighborhood, 2013–2017

Legend: ■ Car, truck, van - alone ■ Car, truck, van - carpool ■ Public transportation ■ Walked ■ Other

Neighborhood	Car, truck, van - alone	Car, truck, van - carpool	Public transportation	Walked	Other
Boston	39.0%	5.8%	33.6%	14.6%	6.9%
Allston/Brighton	41.7%	4.8%	35.0%	8.1%	10.5%
Back Bay	20.9%	1.9%	22.7%	45.7%	8.8%
Charlestown	46.1%	4.1%	27.0%	13.5%	9.3%
Dorchester (02121, 02125)	44.5%	8.0%	38.2%	5.5%	3.
Dorchester (02122, 02124)	47.4%	7.7%	36.5%	4.2%	4
East Boston	26.5%	7.7%	57.7%	5.0%	3.
Fenway	14.4%	2.2%	28.0%	46.5%	8.9%
Hyde Park	63.3%	8.3%	23.0%	2.2%	
Jamaica Plain	36.6%	4.3%	42.5%	5.0%	11.6%
Mattapan	51.2%	11.7%	31.9%		3.3
Roslindale	57.8%	7.0%	27.6%		6.2%
Roxbury	32.6%	5.2%	40.3%	16.8%	5.1%
South Boston	40.3%	5.2%	36.3%	11.3%	6.9%
South End	24.1%	4.8%	28.0%	31.1%	12.0%
West Roxbury	68.2%	7.6%	17.1%	5.5%	
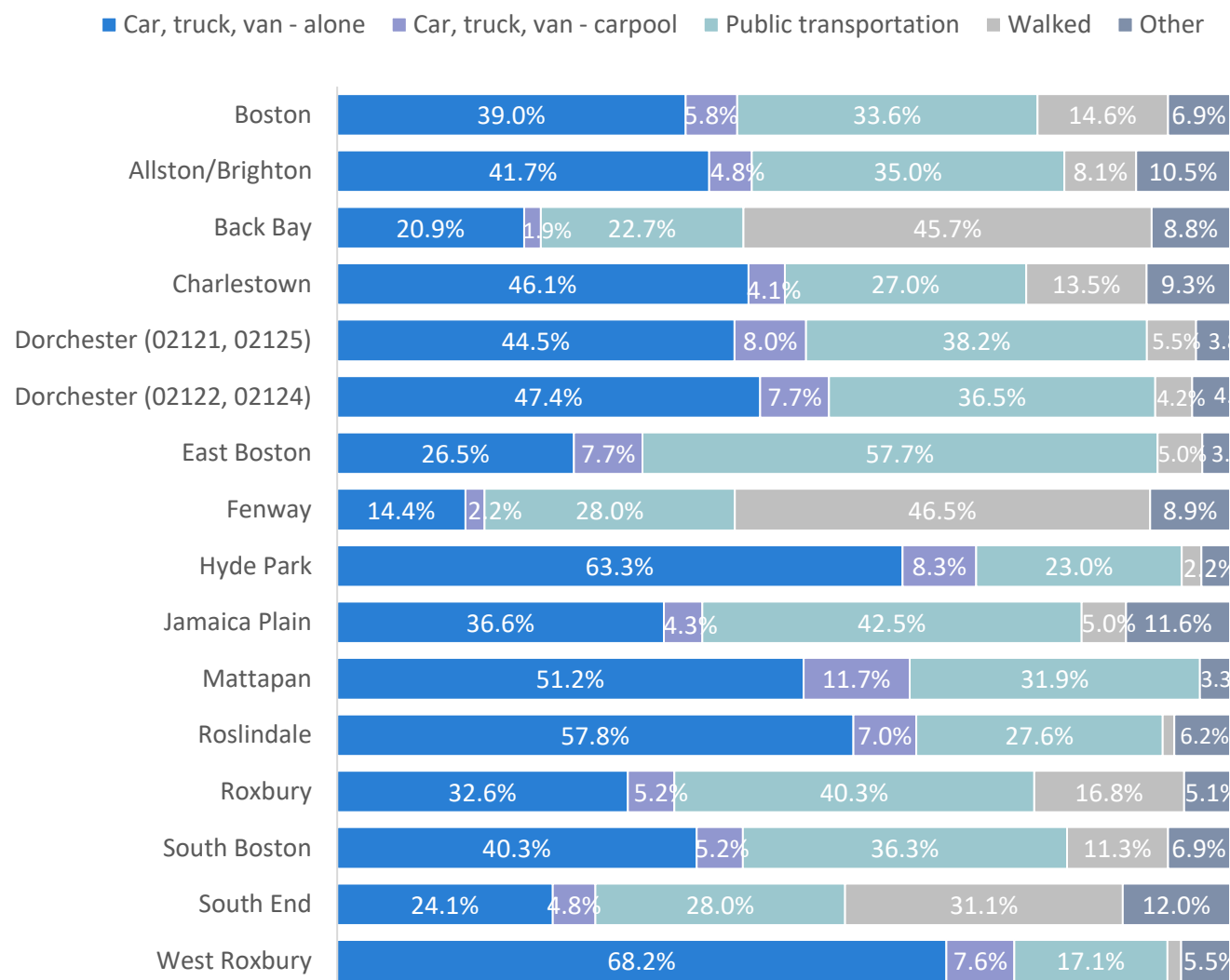
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

In 2015, 1,056 patients of 14 community health centers across Boston were asked about their means of transit to the health center on the day of their health center visit (Figure 38). The bus was the most common form of transportation for patients who identified as Black (54%), Latino (44%), or Multi-Racial (44%), followed by driving (27%-38%). Among respondents who identified as Asian, half (51%) reported driving to the health center and one-quarter (26%) used the bus to get to the health center. Among respondents who identified as White, driving (40%) was the most common form of transit to the health center, followed by taking the bus (34%) and walking (31%).

Figure 38. Percent Survey Respondents Reported Usual Form of Transit Taken to Health Center, by Race/Ethnicity, 2015

Legend: ■ Train ■ Bus ■ Driving ■ Got a ride ■ Bike ■ Walk

Asian: Train 15%, Bus 26%, Driving 51%, Got a ride 23%, Bike 5%, Walk 26%
Black: Train 14%, Bus 54%, Driving 32%, Got a ride 14%, Bike 2%, Walk 27%
Latino: Train 23%, Bus 44%, Driving 27%, Got a ride 10%, Bike 3%, Walk 28%
White: Train 14%, Bus 34%, Driving 40%, Got a ride 13%, Bike 3%, Walk 31%
Multi-race: Train 13%, Bus 44%, Driving 38%, Got a ride 19%, Bike 0%, Walk 38%
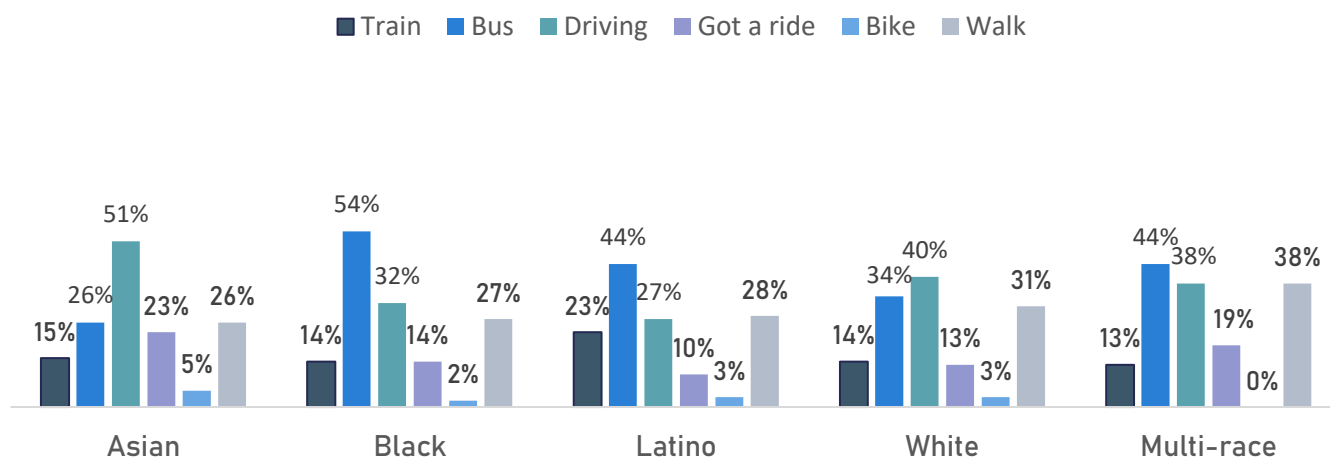
DATA SOURCE: Fair Public Transportation Report: Community Health Center Directors Roundtable, 2015

In 2014, data show that residents in the Boston Metropolitan Statistical Area spent $9,997 on average on transportation costs, which includes costs relating to vehicles and public transit.[32] From FY2001 to FY2014 residents in the Boston Metropolitan Statistical Area spent 11-13% of their household income on transportation (See APPENDIX I).

Transportation Barriers

Across most focus groups, parking and traffic were mentioned as a day-to-day concern for many community residents. Focus group participants in Dorchester indicated that these problems are compounded during the winter months because of the snow, especially on dead-end streets. According to key informants, rapid development happening across the city is compounding parking issues. As one participant explained, *"The idea that the city would provide more housing without parking is a real challenge, especially as you start thinking of initiatives like dedicated bus lanes."* Further, ride shares such as Uber and Lyft were described as exacerbating congestion issues. One interviewee shared, *"Uber and Lyft provide more accessibility to transit and is a great resource for disabled residents and seniors. But we see these trips competing with public transit, and we're seeing more trips happening in peak hours, adding to congestion."*

Several focus group and interview participants, namely those from Dorchester and Mattapan, noted that seniors struggle with accessing transportation because of mobility issues or because assistance programs are not consistent or timely. For example, senior focus group participants explained often being late or missing medical appointments because transportation assistance was unreliable. Others indicated that it was difficult to coordinate services because of having to book rides multiple days in advance or because the vehicles were inaccessible. One Dorchester resident shared, *"For rides through social services, you have to call 3 days in advance and they are still late. Then when your appointment is done you sit there all day waiting."* Another resident agreed and added*, "The vans that come to pick up [seniors] are very tall and [we] can't get into them and it's frightening."* Further, a few focus group participants noted concerns of proposed bus routes being cut, sharing, *"An upcoming concern for me is that the MBTA is thinking of cutting some bus lines and it could impact the elderly."*

Transportation barriers were also identified by those with limited English proficiency, who reported difficulties navigating the transit system. For example, one key informant explained, *"Most [residents] rely on public transportation and it is difficult when the signs are not in their language. They may not understand announcements about delays or emergencies, and it makes them feel insecure about how to navigate."* It was noted that these issues were especially challenging for older adults and seniors. Some key informants perceived that gentrification was forcing residents further from social services, which exacerbates the challenges to public transportation. One key informant shared, *"[Residents] with mobility issues may be able to take advantage of services like The RIDE from MBTA, but you have to call and request that service, and for Chinese-speaking individuals, that can be a challenge."* A few focus group participants mentioned the recent increases to MBTA fares and the perception that these increases disproportionally impact seniors, low-wage workers, and communities of color.

Reflecting the themes that emerged in focus groups and interviews, 23.1% of Boston CHNA survey respondents cited limited street parking, traffic-related noise, or traffic as a barrier to getting to medical appointments. Nearly one in five (19.2%) of Boston CHNA survey respondents identified the availability of public transportation as a barrier, while one-quarter 15.5% cited the cost of transportation a barrier (Table 11). These top reasons were similar among survey respondents who spoke a language other than English, although Chinese and Vietnamese speakers were significantly more likely to indicate that clear and understandable transportation signs and directions were a transportation barrier.

Table 11. Percent Boston CHNA Survey Respondents Reported Transportation Barriers to Getting to Medical Appointments, Meetings, Work, or Getting Things Needed for Daily Living, By All Respondents and Primary Language, 2019

	All Respondents (N=2,012)	Chinese (N=137)	English (N=1,769)	Haitian Creole (N=55)	Portuguese (N=47)	Spanish (N=362)	Vietnamese (N=82)
Limited street parking, traffic-related noise, or traffic	23.1%	16.1%	23.2%	18.2%	19.2%	25.4%	34.2%
Availability of public transportation	19.2%	15.3%	18.6%	21.8%	21.3%	19.6%	28.1%
Cost of transportation	15.5%	7.3%	14.9%	18.2%	14.9%	23.8%	13.4%
Limited opportunities for safe bicycle riding	8.5%	1.5%	8.5%	3.6%	6.4%	7.7%	4.9%
Clear and understandable transportation signs and directions	4.0%	6.6%	3.7%	3.6%	2.1%	4.4%	9.8%
None of the above	55.8%	66.4%	56.6%	49.1%	61.7%	50.3%	42.7%

DATA SOURCE: Boston CHNA Community Survey, 2019

APPENDIX I shows data for transportation barriers by neighborhoods with large enough sub-sample sizes. Limited street parking, traffic-related noise, or traffic was similarly the most frequently selected barrier among respondents living in Roslindale (26.8%), South End (23.2%), Jamaica Plain (22.7%), Hyde Park (20.2%), Dorchester (24.8%), and East Boston (28.2%). Among those living in Mattapan, respondents were most likely to report the cost of transportation as a barrier (19.8%). In Allston/Brighton and Roxbury communities, respondents most frequently reported the availability of public transportation as a barrier (26.7% and 20.7%, respectively).

Transportation Resources

It was noted by key informants that the city is working towards efforts to address transportation issues through initiatives like Go Boston 2030, a city plan that aims to address Boston's most pressing transportation issues by address long-term inequality, increasing economic mobility, and improving environmental health impacts in the next 5, 10, and 15 years. Interviews reported that while these efforts are a step in a positive direction, more is needed to address transportation equity across the city. One suggestion was to focus on providing faster commutes on buses for lower income communities of color such as Mattapan and Roxbury. An interviewee explained that in high needs areas *"there's a huge opportunity to improve bus service through dedicated lane or queue jumps (a type of roadway geometry used to provide preference to buses at intersections, often found in bus rapid transit systems)."*

Key informants noted the addition of Blue Bikes and protected bike lanes in recent years as initiatives that were alleviating some congestion and accessibility issues; however, they commented that these efforts will need to be bolstered and creative solutions will be needed to address the increasing traffic and parking pressures caused by development. Local solutions to transportation barriers were cited as most effective; one key informant expert suggested that municipalities and towns explore taking a more active role in transportation taxes in order to generate revenue for operational costs at the local level. Lastly, there was a suggestion for larger institutions to take a lead in modeling responsible transportation practices. One interviewee shared, *"I think these big institutions can start helping with their own practices. It's helpful when organizations adopt policies that provide their staff with transportation opportunities."*

Green Space and the Built Environment

Why is This Important?

Over 8% of land in Boston is comprised of parks, playgrounds, and athletic fields.

Green space and the built environment influence the public's health, particularly in relation to chronic diseases. Urban environments and physical spaces can expose people to toxins or pollutants, affecting health conditions such as cancer, lead poisoning, and asthma.[33] There is compelling evidence that changes in environmental policies can have an impact on children and families.[34] Physical space influences lifestyles: playgrounds, green spaces, and trails as well as bike lanes and safe sidewalks and crosswalks all encourage physical activity and social interaction, which positively affect physical and mental health.[35] Specifically, lower rates of

childhood obesity and decreased levels of stress among adolescents have been associated with safe, accessible green spaces and other built environment elements.[36]

Key Findings in This Section

Slightly over 8% of land in Boston is comprised of parks, playgrounds, and athletic fields and about 7% is parkways, reservations, and beaches. Boston has a walkability score of 81, indicating a "very walkable" community.[37] However, focus group members and interviewees shared that the built environment varies across neighborhoods. Those from Allston/Brighton, Chinatown, and Dorchester perceived insufficient green space across their neighborhoods, which they attributed to the growth in new housing developments. In contrast, interviewees and focus group participants described Jamaica Plain and East Boston as neighborhoods with ample access to green space. Participants also shared additional concerns specific to their neighborhoods, with those from Dorchester, Mattapan, and Chinatown expressing concern about safety in their community open spaces, as well as challenges with rodents, snow removal, and lack of public restrooms.

Green Space

The importance of accessible green space and its relation to health was discussed in multiple focus groups throughout the city. As one focus group participant summarized, "*You need to keep a good environment to maintain a healthy life.*" Focus group participants in Allston/Brighton, Chinatown, and Dorchester perceived a decrease in green space across their neighborhoods and attributed the decline to new housing developments under construction. One focus group participant explained, "*People are cutting the trees for the big buildings. If you take the trees, you find more carbon monoxide, increases in cancer, more stress...you will not find peace in the community anymore.*" A parent from Allston agreed and added "*I'm under the impression that people are forgetting about children [in Allston/Brighton]. How is it that there are more dog parks and not any parks for children?*" Focus group participants in Dorchester, Mattapan, and Chinatown expressed concerns about individual safety in their community open spaces, citing an increase in used needles on sidewalks, playgrounds, and parks. On the contrary, interviewees and focus group participants described Jamaica Plain and East Boston as neighborhoods with ample access to green space. Specific outdoor spaces that were mentioned as community strengths included Piers Park in East Boston, the Arboretum in Jamaica Plain, and Franklin Park in Dorchester.

As noted in the Approximately 49% of Boston's 47 square miles (excluding Harbor Islands) is zoned residential while approximately 24% is zoned as business, institutional, industrial, or mixed-use. The remaining 27% consists mostly of open space and miscellaneous.

Figure 39 displays the green space and open space in Boston, where 8.3% of land is comprised of parks, playgrounds, and athletic fields and 7.4% is parkways, reservations, and beaches. As noted in Health of Boston 2016-2017 report, approximately 11 square miles of Boston's 48 square miles (including the Harbor Islands) is open space. Boston also comprises 29 miles of bicycle trails. The largest portions of bicycle trails are in East Boston and Hyde Park (about 6 miles each); however, there is less than 1 mile of bicycle trails in Mattapan and Roslindale.[38]

Figure 39. General Open Space, by Type and Neighborhood, 2017

Legend (Percentage of Boston Land Area)
- Cemeteries and burying grounds (3.3%)
- Community gardens (less than 1%)
- Malls, squares, and plazas (less than 1%)
- Parks, playgrounds, and athletic fields (8.3%)
- Parkways, reservations, and beaches (7.4%)
- Urban wilds and natural areas (2.8%)
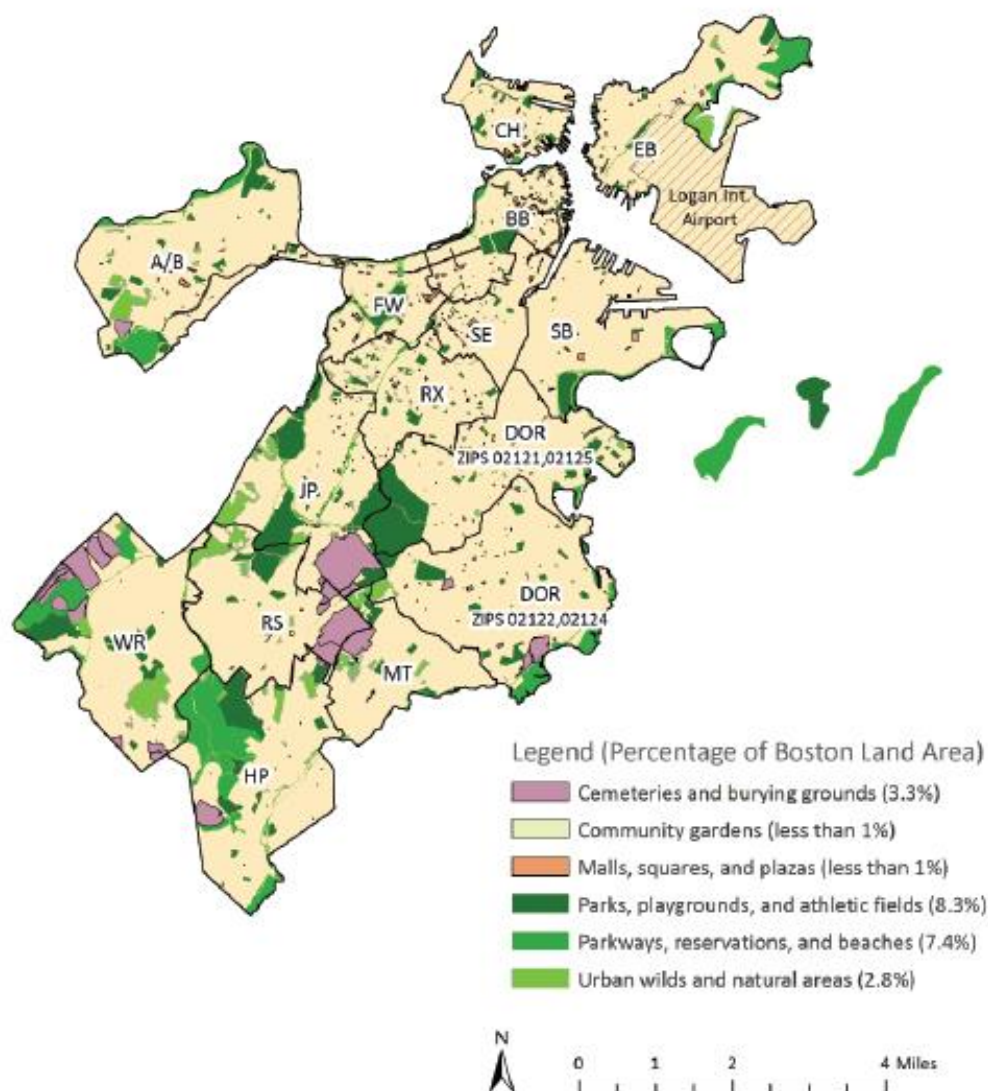
DATA SOURCE: City of Boston, Parks and Recreation Department, Boston Open Space, as reported and analyzed by Boston Public Health Commission, Research and Evaluation Office, Health of Boston Report 2016-2017, 2017

Walkability

Walkability in a neighborhood is important for facilitating physical activity, personal safety, and community cohesion. The Walk Score walkability index, ranges from 0 to 100, based on walking routes to local destinations such as grocery stores, parks, schools, and store outlets. Boston is the 3rd most walkable large city with a Walk Score of 81. In 2017, the Walk Score varied widely by zip code in Boston from 57 to 99 (Figure 40. The highest Walk Score was observed in the zip codes associated with North End (99 in 02113) and Back Bay/Bay Village (98 in 02199), while the lowest Walk Score was observed in the zip codes associated with Hyde Park (57 in 02136) and West Roxbury (61 in 02132).

Figure 40: Walk Score, by Zip Code, 2017
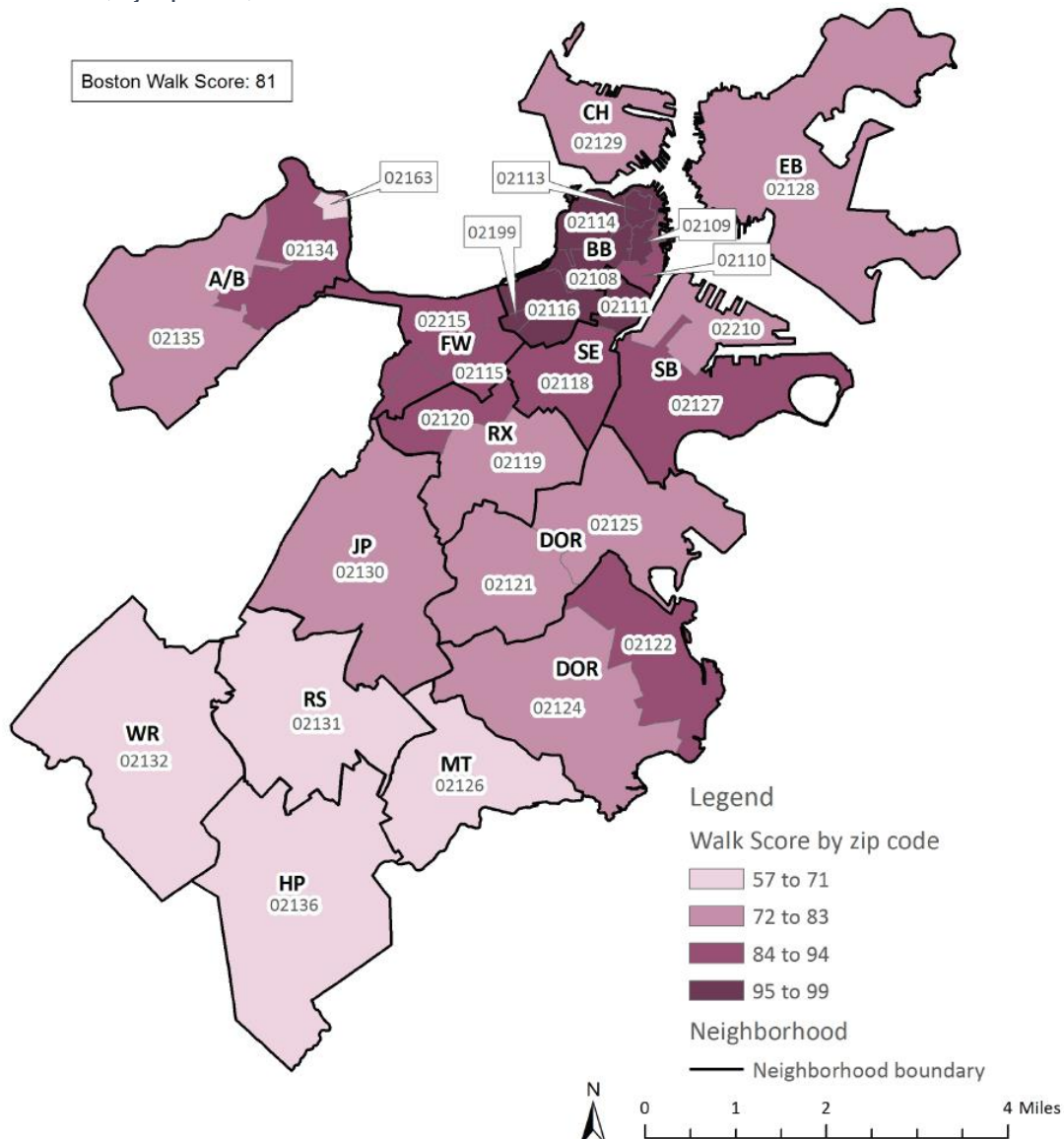
DATA SOURCE: Walk Score, www.walkscore.com, as reported and analyzed by Boston Public Health Commission, Research and Evaluation Office, Health of Boston Report 2016-2017, 2017

NOTES: "BB" includes the Back Bay, Beacon Hill, Downtown, North End, and West End; "SE" includes South End and Chinatown; Walk Score is an index of pedestrian-friendliness that ranges from 0 to 100; Data for the portion of zip code 02467 in Boston were unavailable; Map does not include the Harbor Islands

Figure 41 provides a 2014 map of the city and where sidewalks are considered to be in good, fair, or poor condition. Dorchester, Roslindale, and West Roxbury appear to have the largest concentrations of poor condition sidewalks in the city. Since then, the Boston Public Works Department Streetcaster Program has focused first on sidewalk replacements, particularly in those neighborhoods which have historically initiated fewer requests for repairs to assure and innovative and equitable approach to capital resource allocation.

Figure 41. Sidewalk Conditions, by Type of Condition and Neighborhood, 2014

Sidewalk Conditions

- ▇ Poor Condition
- ▇ Fair Condition
- ▇ Good Condition

Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community
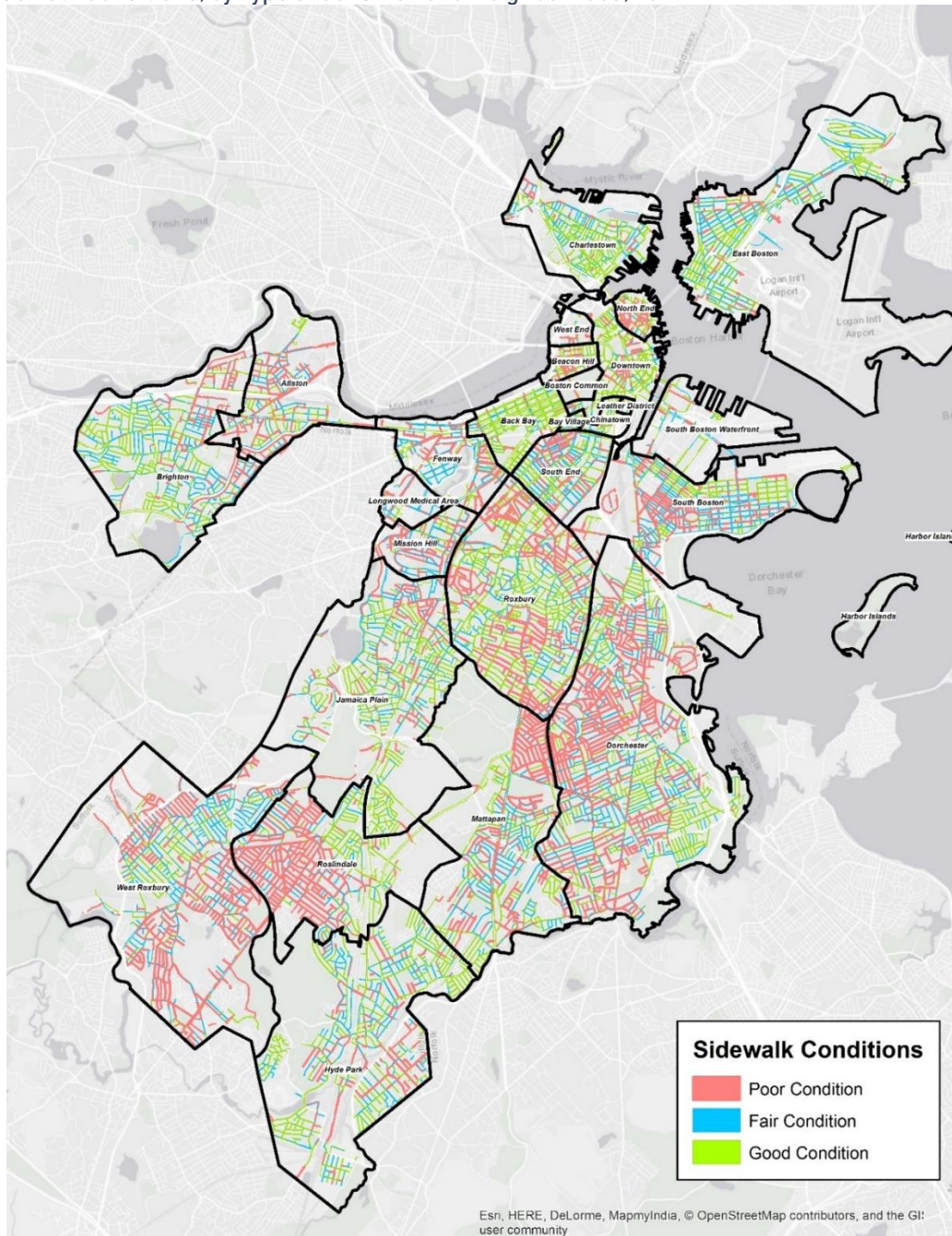
DATA SOURCE: Courtesy of City of Boston, Public Works Department, 2014
NOTES: City Engineers assessed the sidewalks and quantified the amount of damage each sidewalk block had. A sidewalk condition metric was calculated called the "Sidewalk Condition Index" also known as the SCI. This metric is a direct ratio of how "undamaged" the sidewalk area is. Damage can refer to sidewalks that are cracked, faulted due to tree roots, utility cut patches, missing bricks/material, etc. For example, if the engineers quantified 800 square feet of damage in the assessment and the total sidewalk area is 1,000 square feet then the SCI of that block would be a 20 (since 80% is damaged). The SCI scores were grouped into 3 main categories: Good condition was for sidewalks that had a SCI from 80-100, fair condition sidewalks had an SCI between 50 and 80, and the poor condition sidewalks had an SCI less than 50. The reasoning of these condition thresholds is that if the sidewalk is more than half damaged it will be considered "poor" and require full reconstruction since a partial repair isn't sufficient. If the SCI is between 50-80 (fair) then it may be a candidate for partial repair.

Perceptions of the Built Environment and Neighborhood Development

In several focus groups across the city there was a perception that many areas were becoming overcrowded with new developments. One resident from Dorchester shared, *"They build and build until we're stuffed in like pack rats…every little slot they're building something; we're literally living on top of our neighbors."* These overcrowding concerns were echoed in East Boston and Chinatown, with one resident sharing, *"In the mornings it's really hard to get around because the construction makes things congested. There needs to be a response soon to everything that is being built."* A key informant added, *"Chinatown is congested. Elliot Norton Park and Chinatown Park have very small patches of unutilized space, but nothing is there right now. These could be better used if whoever owns these spaces put down some grass and other plants."* In addition, a few key informants discussed the need for more dedicated bike lanes to mitigate the congestion caused by construction projects.

Focus group participants and interviewees perceived that construction sites throughout the city were adding to the presence of rodents. One resident from Dorchester explained, *"I see a lot of construction, and construction breeds rats."* Snow removal was also described as a concern by focus group participants in Chinatown, East Boston, and Dorchester. One resident shared, *"I experience many issues during snow season; the city does not clean up all the streets around Chinatown on time and the streets get narrower when people try to park by the meters."* Further, focus group participants who resided in the South End and in Chinatown reported a lack of public restrooms in their neighborhoods. APPENDIX I includes data on public restrooms in the city, showing a wide range of availability across neighborhoods.

Social Environment

Why is This Important?

Relationships are important for physical and mental well-being. At an individual level, social networks spread social behaviors: social support can help encourage people engage in more positive healthy behaviors.[39] By contrast, lack of connectedness has been shown to be linked to depression and is a risk factor for early mortality.[40]

> "Communities have changed so radically over time; the community fabric in terms of [young people] caring for an elder has changed. Just like it takes a village to raise child, it takes a village to raise an elder." — Key informant interviewee

At the community level, the cohesiveness of a community has been shown to be positively related to self-reported health and mortality.[41] Conversely, discrimination as part of one's social environment can have a negative impact on health. Structural discrimination such as segregation, inequitable access to quality education, and disparities in incarceration rates can limit opportunities, resources, and well-being of less privileged groups.[42] Individual discrimination may have high physical and emotional health costs as well. Research suggests that routine discrimination can be a chronic stressor and increase vulnerability to physical illness.[43,44]

Key Findings in this Section

Focus group members and interviewees pointed to examples of strong social networks in Boston, citing cohesion across different immigrant groups and among others who share similar racial, cultural, linguistic and religious backgrounds. Two-thirds of CHNA community survey respondents believed that people in their neighborhoods help each other and three-quarters perceived that they and their neighbors want the same thing for their neighborhoods. Survey respondents also indicated strong civic engagement, as evidenced by high levels of self-reported involvement in community organizations and voting. At the same time, focus group members also mentioned a decline in community social ties, brought on by lack of time and generational differences. Gentrification has likewise changed the "feel" of some neighborhoods, specifically Roxbury, East Boston, and Dorchester. CHNA community survey results and conversations in focus groups indicate that subtle and overt discrimination is an issue in Boston, particularly for immigrants and non-English speakers, LGBTQ residents, and older residents and youth, substance users and the homeless. Institutional racism was discussed in greater detail as being pervasive across the city given discriminatory policies at a systems level, and is described in more detail in the Violence and Trauma section.

Community Cohesion and Gentrification

Community cohesion refers to community dynamics, such as a shared sense of membership, influence, social integration, and connections among residents. In focus group discussions, participants who belonged to similar affinity groups expressed a strong sense of cohesion among their communities, particularly those with similar racial, cultural, linguistic, and religious backgrounds.

> "I grew up here and it's changed so much; I hardly know anyone in the neighborhood anymore." — Focus group participant

For example, Haitian residents in Mattapan indicated supporting small businesses run by other Haitian immigrants. Residents in East Boston referenced feeling "*en casa*" with their fellow Latino neighbors*;* translated to *"make yourself at home"*—the phrase means to extend hospitality and respect to one's neighbor. In Chinatown, it was noted that there are strong connections between newly arrived immigrants and those who have been here longer. One interviewee shared, "*Parents whose families have benefited from services give back and help advocate for other families and children. They become anchors of the community and encourage others to use resources.*"

While some groups described strong community linkages, others such as public housing residents and lower-income groups described limited connections or interactions with their neighbors. For example, residents from Dorchester shared, "*No one knows each other anymore or talks to each other like they used to years ago. You can live right across the street from somebody and not even know their first name.*" A key informant described this type of insularity happening in South Boston as well, sharing*, "One of the challenges has been to get people from the housing developments to participate in community events and activities. They feel so insular in the developments…"* A few focus group and interviewees attributed these disconnects to lack of time and generational differences. Focus group participants from Chinatown, Mattapan, and Dorchester, for example, perceived the emphasis on community approaches to caring for elders

was not as much of a priority for young people. One key informant summarized, "*Communities have changed so radically over time; the community fabric in terms of [young people] caring for an elder has changed. Just like it takes a village to raise child, it takes a village to raise an elder.*"

Lack of connectedness among seniors in the community was a concern voiced by some participants. Across groups that had experience working with seniors, social isolation was identified as the primary mental health issue for older adults. Participants spoke of co-occurring issues that stemmed from social isolation, the most common being hoarding disorder. One key informant explained, "*You'll see instances when organizations rally together to clean the home of seniors [who are hoarders]. Then we'll come back 6 months later, and their conditions are right back where they were and it's because they haven't left their house or spoken to anyone in weeks.*"

Some key informants and focus group participants with long-standing roots in historically working-class communities of color like Roxbury, East Boston, and Dorchester described changes in the character and culture of their neighborhoods in recent years. Specifically, it was noted that younger professionals were changing the "*feel*" of these areas. For example, one Roxbury resident shared, "*I grew up here and it's changed so much; I hardly know anyone in the neighborhood anymore.*" Focus group participants attributed this lack of community linkages to gentrification and displacement. One key informant shared, "*If you've been working with people for decades to clean up their neighborhoods who now cannot afford to live in Boston, that affects all of our work. You have people who for years have worked to get the community safer and cleaner and are now getting priced out...pushed away.*"

When asked about perceptions of community cohesion or connectedness, approximately three-quarters of Boston CHNA survey respondents perceived that they and their neighbors want the same thing for their neighborhood (77%) (Figure 42). While gentrification was a theme that emerged in focus groups, seven in ten Boston CHNA survey respondents indicated that they plan to live in their neighborhood for a long time (73%). Approximately two-thirds (68%) of respondents noted that their neighbors help each other out and more than half (56%) of respondents reported recognizing most people who lived in their neighborhood. Notably, despite reported ties to their neighborhood and neighbors, only approximately one-third (35%) of respondents perceived that they had influence over what their neighborhood is like. Responses to these questions by survey respondents' neighborhood can be found in APPENDIX I.

Figure 42. Boston CHNA Survey Respondents' Reported Perceptions of Community Cohesion in Their Neighborhood, 2019
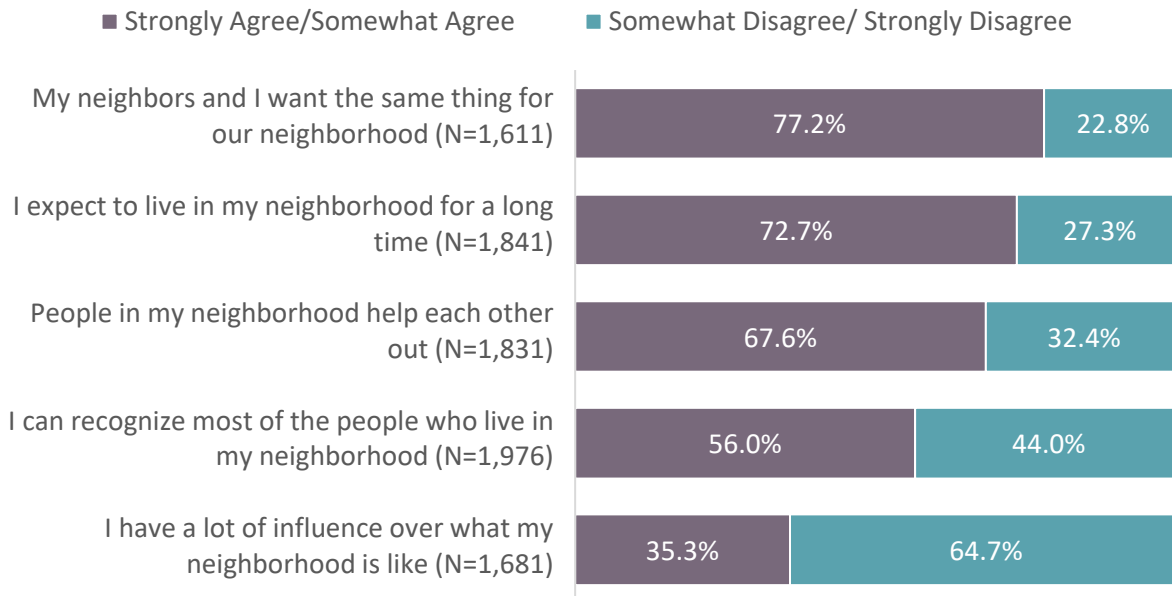
	Strongly Agree/Somewhat Agree	Somewhat Disagree/ Strongly Disagree
My neighbors and I want the same thing for our neighborhood (N=1,611)	77.2%	22.8%
I expect to live in my neighborhood for a long time (N=1,841)	72.7%	27.3%
People in my neighborhood help each other out (N=1,831)	67.6%	32.4%
I can recognize most of the people who live in my neighborhood (N=1,976)	56.0%	44.0%
I have a lot of influence over what my neighborhood is like (N=1,681)	35.3%	64.7%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "not applicable/don't know"

Civic Engagement

Involvement in informal or formal social organizations and activities may reflect social integration in a community and/or residents organizing to address community needs. Forty-six percent of Boston CHNA survey respondents, many of which were recruited to complete the survey through community organizations, reported involvement in an organization such as neighborhood associations, labor unions, immigration and civil rights groups, religious groups, community organizations, or other organizations.

Boston CHNA survey respondents were asked about their civic engagement and connection to civic processes (Figure 43). Nearly nine in ten respondents indicated that it was important to be involved in government decision-making (90%). Eight in ten respondents knew who their elected representatives were (78%). Approximately seven in ten respondents knew how to contact an elected representative (71%) or felt that they could influence decisions made at city, state, and federal levels (65%).

Figure 43. Boston CHNA Survey Respondents' Reported Perceptions Civic Engagement, 2019
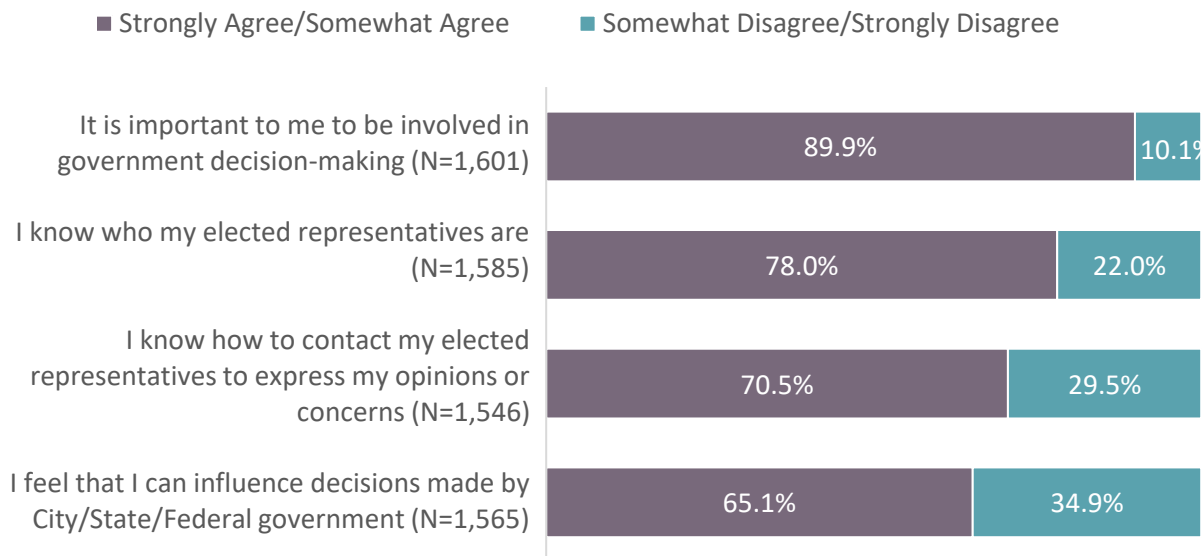
■ Strongly Agree/Somewhat Agree   ■ Somewhat Disagree/Strongly Disagree

	Strongly Agree/Somewhat Agree	Somewhat Disagree/Strongly Disagree
It is important to me to be involved in government decision-making (N=1,601)	89.9%	10.1%
I know who my elected representatives are (N=1,585)	78.0%	22.0%
I know how to contact my elected representatives to express my opinions or concerns (N=1,546)	70.5%	29.5%
I feel that I can influence decisions made by City/State/Federal government (N=1,565)	65.1%	34.9%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "not applicable/don't know"

Another form of civic engagement includes voting. As shown in Figure 44, among Boston CHNA survey respondents who are eligible to vote, nearly half (47%) reported voting in every election. One-third (36%) of respondents indicated that they voted in almost every election.

Figure 44. Percent Boston CHNA Survey Respondents Who Are Eligible to Vote Reporting Voting Behaviors (N=1,397), 2019
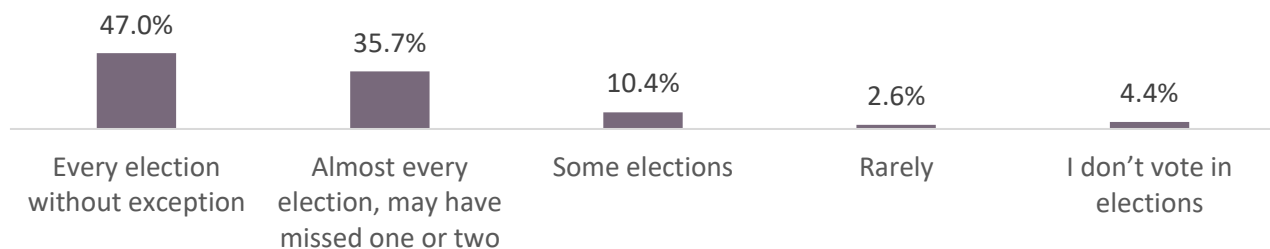
Every election without exception	Almost every election, may have missed one or two	Some elections	Rarely	I don't vote in elections
47.0%	35.7%	10.4%	2.6%	4.4%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who selected "I am not eligible to vote" and "prefer not to answer/don't know"

Discrimination

Discrimination was mentioned in several focus groups across the city, particularly with immigrants and non-English speakers, LGBTQ residents, substance users, and the homeless population. These experiences were described as both subtle and overt acts felt on a regular basis; examples ranged from verbal altercations to more systemic issues such as people of color being passed up for job promotions despite qualifications. All of these issues were compounded when residents belonged to multiple oppressed identities, for example, queer people of color or non-English speaking residents in recovery. The following sections weave together reports of discrimination based on focus groups and interviews and responses to the Boston CHNA survey.

Boston CHNA survey respondents were asked about their experiences of discrimination in day-to-day life (Figure 45, more detailed data in APPENDIX I). Nearly half of respondents reported being treated with less courtesy than other people (49%), people acting as if they are better than the respondent (48%), and being treated with less respect (47%) a few times a year or more.

About one in three respondents reported experiencing poorer service than other people at restaurants or stores (29%) and one-quarter reported being called names or insulted (24%) at least a few times a year. Notably, one-third of respondents reported being threatened or harassed (35%) and people acting as if they are afraid of them (30%) in their life time. Over their life course, more than one-quarter of respondents reported receiving poorer service when receiving medical care (28%). These experiences of discrimination are important as they can restrict access to health promoting resources (such as health care), serve as stressful life events, and/or shape future interactions with institutions or spaces where they experienced discrimination.

Figure 45. Boston CHNA Survey Respondents' Reported Perceptions of Discrimination in Day–To–Day Life, 2019
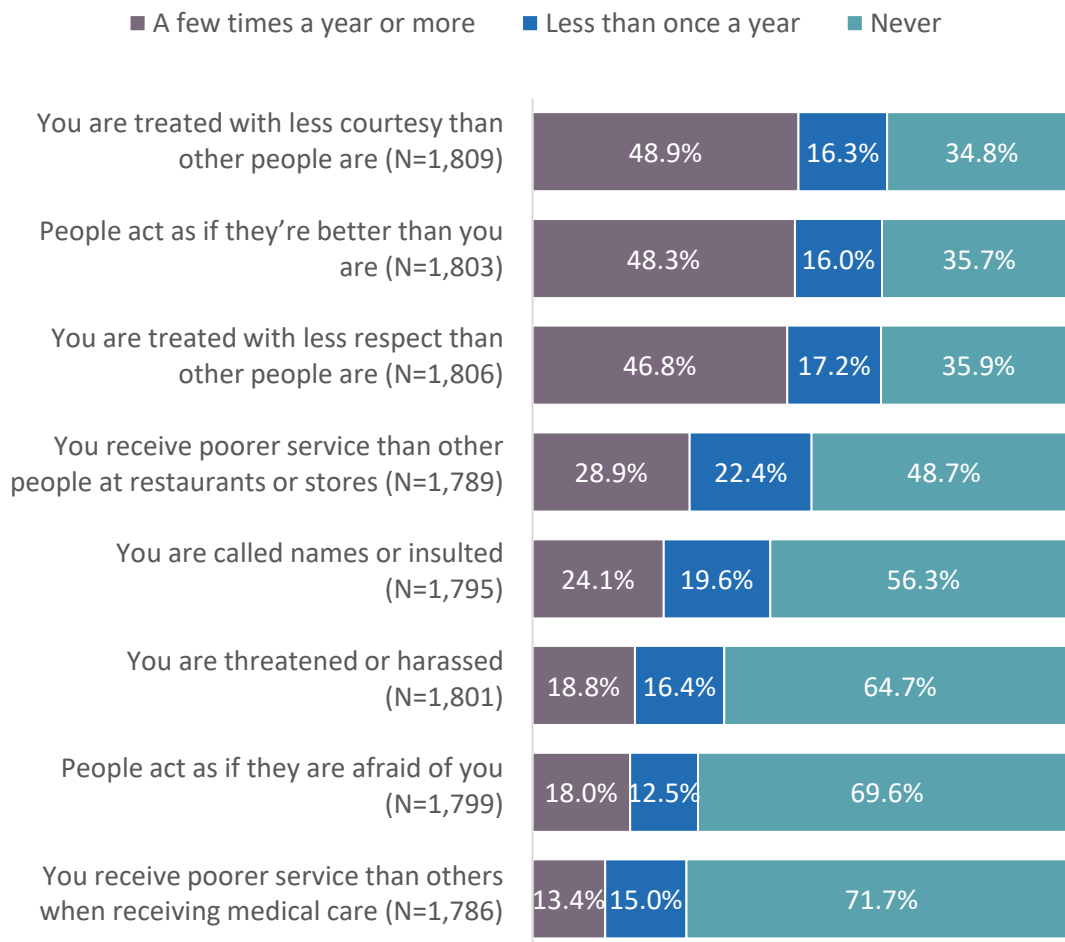
DATA SOURCE: Boston CHNA Community Survey, 2019

Boston CHNA survey respondents who indicated an experience of discrimination at least a few times per year were asked to indicate the main perceived reasons for the experience(s) of

discrimination that they reported (Figure 46). Approximately half of respondents attributed their experience of discrimination to their gender (51%) or race (48%). More than one-third reported age-based discrimination (37%) and one-quarter linked their experience of discrimination with their ancestry or national origins (26%). Approximately one in five respondents reported discrimination based on some other aspect of their physical appearance (21%) or their education or income level (20%).

Figure 46. Percent Boston CHNA Survey Respondents Reporting Their Own Perceived Reasons for Their Experiences of Discrimination If They Reported Experiencing Discrimination a Few Times a Year or More (N=872), 2019
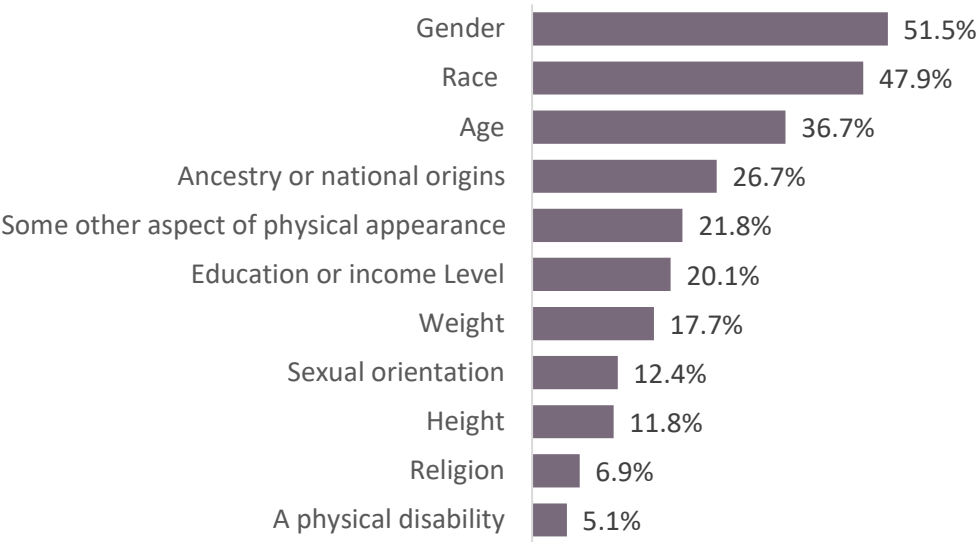
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Data organized in descending order; Respondents were allowed to select multiple responses; therefore, percentages may not sum to 100%; Percentage calculations include respondents who selected "almost every day," "at least once a week," "a few times a month," and "a few times a year" to the previous question on experiences of discrimination; Percentage calculations do not include respondents who selected "prefer not to answer/don't know"

Table 12 presents the three most frequently reported reasons for experiences of discrimination by race/ethnicity, age, gender, and sexual orientation. Recognizing that respondents may hold multiple social statuses or identities that may be salient in their experiences of discrimination, APPENDIX I includes additional tables presenting tests of significant differences in reports of discrimination in the past year by respondents' race/ethnicity, age groups, gender identity, and sexual orientation.

Table 12. Top Three Reported Perceived Reasons for Experiences of Discrimination If They Reported Experiencing Discrimination a Few Times a Year or More, by Selected Indicators, 2019

	Asian (N=91)	Black (N=214)	Latino (N=194)	White (N=302)	Under 18 years (N=92)	65+ years (N=59)	Female (N=660)	LGBTQ (N=238)
1	Race	Race	Race	Gender	Race	Age	Gender	Gender
2	Ancestry or national origins	Gender	Gender	Age	Age	Race	Race	Sexual orientation
3	Gender	Age	Ancestry or national origins	Some other aspect of your physical appearance	Gender	Gender	Age	Race

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%; Percentage calculations include respondents who selected "almost every day," "at least once a week," "a few times a month," and "a few times a year" to the previous question on experiences of discrimination; Percentage calculations do not include respondents who selected "prefer not to answer/don't know"

LGBTQ Boston CHNA survey respondents (54%) were more likely than heterosexual/non-transgender respondents (3%) to report discrimination based on their sexual orientation. LGBTQ-identifying residents in focus groups discussed being discriminated against based on gender identity, especially among transgender and gender non-conforming youth. For example, focus group participants spoke of experiences where health providers would not address them by their preferred pronoun, citing that it made them feel "*not completely seen by others.*" Other challenges cited by LGBTQ focus group participant included access to reproductive health and hormone therapy.

Interviews and focus group discussions with residents help to illuminate experiences of discrimination similar to those reported in the Boston CHNA survey. Focus group participants who identified as immigrants most commonly described instances of discrimination in public spaces like the supermarket or on public transportation; this was especially true for those who identified as Latino and Asian. One East Boston resident described, *"At the supermarket, I was standing close to an American and accidently [grazed] him. He looked disgusted when I touched him and wiped his arm off like an animal had touched him. That sticks with you."* These groups perceived an increase in prejudice or discriminatory behavior in the last few years and attributed these tensions to the current political climate. Being discriminated against because of one's ability to speak English or because of one's accent was also a common theme among non-English focus group participants. One resident expressed, *"Even when you try to speak English- they try to humiliate your accent."*

Discrimination can come in many different forms and be perpetrated by different types of people and institutions. Some focus group participants of color specifically described instances of *within-group* discrimination, a phenomenon where factions of a single group develop conflicts against each other as by-products of competition and prejudice. Residents in East Boston, Allston/Brighton, and Dorchester, for example, described instances feeling "*othered by their own kind*". This sentiment was illustrated by examples of employers underpaying Latino residents or landlords inflating rent for residents who were not White. One shared, *"They*

[employers] pay Americans $26 an hour for work but if you're Latino, they only pay you $10 because they know you won't report it." There were some mentions of experiences with discrimination among other racial minority groups. Specifically, residents in Dorchester reported negative interactions between Black and non-Black minority groups. Focus group participants in Dorchester and Mattapan also described tensions within the Black community between African Americans and those of African or Caribbean decent.

While the experiences of discrimination against homeless residents did not explicitly emerge in the Boston CHNA survey, focus group participants who were homeless described being treated poorly because of their appearance. One homeless resident shared, *"Hospitals don't treat you the same when you're homeless; they treat you really badly. If you come in you're treated badly by everyone- the security, the nurses, the doctors."* Homeless individuals were often associated with substance users, though some key informants explained that this is not necessarily always accurate; that some residents are just one emergency away from becoming homeless.

Lastly, focus group participants who identified as active substance users described being discriminated against in public spaces and at social service agencies. Some described frequently being judged by other drug users, specifically those who used pills versus heroine or methamphetamine. One focus groups participant shared, *"One of the hardest things is people walking around with their false sobriety. People who aren't using heroin but they're on pills and they're looking down on people. You're either sober or you're not sober."*

A more detailed description of experiences and perceptions of institutional racism and discriminatory policies at a systems level can be found in the Violence and Trauma section.

Community Assets and Resources

Why is This Important?

Understanding the resources and services available in a community—as well as their distribution—helps to elucidate the assets that can be drawn upon to address community health, as well as any gaps that might exist. These assets include both institutions as well as community member characteristics.

Key Findings in This Section

Boston communities have numerous strengths according to focus group members, interviewees, and community survey respondents. Neighborhoods were described as being "tight-knit" with substantial cultural diversity and strong faith communities. Sixty-eight percent of community survey respondents identified racial and cultural diversity as a top strength of their community. Activism and resiliency are other notable characteristics of Bostonians. The city's colleges and universities are world class.

> "Regardless of the changing face of the community, there is still a real sense of community here. People looking out for each other…and the amount of services and variety of services is just incredible. We hope to keep that richness within the community." — Focus group participant

Proximity and abundance of health care is also a key strength. Across the city, there are 22 hospitals and 33 health center access sites. Community survey respondents identified proximity to medical services as the top strength of their communities, with 69% of respondents identifying this a top strength. Other assets include services and supports for students at Boston Public Schools, and positive strides in the city for LGBTQ residents, including within the school system through Gay Straight Alliances. Finally, the social services network in Boston was perceived to be large, strong, and collaborative, although some suggested more could be done to enhance cooperation across institutions and reduce duplication.

Perceptions of Community Strengths and Assets

When asked about community strengths, participants identified several assets including cultural diversity, collaborative social service organizations, and engaged community residents, among others. Many residents indicated belonging to a strong faith-based community that provides emotional and tangible supports for those who have unmet needs. Key informants who worked with children described an "*incredible resilience*" among children who have experienced trauma.

Proximity to health care services and educational institutions were also described as assets among focus group and interview participants. One focus group participant in Mattapan noted, *"There's so much that the city of Boston has to offer; it has some of the best colleges and universities, best teaching hospitals and traveling [health care]."* Similarly, residents in Chinatown described the close proximity to services as a strength in their neighborhood. One key informant shared, *"One of Chinatown's greatest strengths is that you have access to almost everything you need. You can go to restaurants, you can buy groceries, you can access services, you can get health care. As long as you know what you are looking for, you likely are able to find it in Chinatown."* Jamaica Plain was described as a neighborhood with ample green space, local business, and accessible transportation. One resident shared, *"In JP we are very lucky to have the pond and the Arboretum. There is good transportation and not a lot of fast food restaurants around. People are able to access primary care services without having to go too far...the neighborhood has a lot going for it."*

Diversity and multiculturalism were seen as strengths across the city. Focus group and interview participants described their communities as "tight-knit". Participants described an engaged community that is willing to help those who are struggling. One focus group participant shared, *"Regardless of the changing face of the community, there is still a real sense of community here. People looking out for each other...and the amount of services and variety of services is just incredible. We hope to keep that richness within the community."* Another key informant echoed this sentiment and shared, *"Every community in Boston has profound assets. We have a strong history of activism, strong connections to diverse communities and cultures, and close proximity to leading researchers and thinkers."* Focus group and interview participants described the strong work ethic and "*will to survive*" as a strength in immigrant communities. Neighborhoods like Chinatown were noted as a strong cultural hub by key informants, with one sharing, *"The Chinatown Gate now has an inclusive and well-maintained park, and many tourists from all over the world come to take photos at the Gate; it's become a tourist attraction for a lot of people."* Residents who identified as LGBTQ indicated that Boston is making positive strides related to care for LGTBQ residents and cited Fenway Health and the Justice Resource Institute as strengths.

Survey data reinforce many of these themes from qualitative discussions. When Boston CHNA survey respondents were asked to mark the biggest strengths in their community, a majority of respondents noted "my community is close to medical services" (69.0%), "my community has people of many races and cultures" (67.5%), "people speak my language" (54.8%), and "my community has good access to resources" (54.6%) (Figure 47). Table 13 provides the breakdown of the top five strengths noted among respondents by neighborhood, while Table 14 provides data on this same question by primary language spoken by survey respondent.

Figure 47. Percent Boston CHNA Survey Respondents Reporting Strengths of Their Community or Neighborhood (N=2,022), 2019

Strength	Percent
My community is close to medical services	69.0%
My community has people of many races and cultures	67.5%
People speak my language	54.8%
My community has good access to resources	54.6%
People care about improving their community	48.4%
People are proud of their community	45.0%
People accept others who are different than themselves	44.8%
People feel like they belong in this community	38.8%
People like to work together in this community	34.5%
People can deal with challenges in this community	28.1%
There are innovation and new ideas in my community	27.9%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "none of the above"

Table 13. Percent Boston CHNA Survey Respondents Reporting Strengths of Their Community or Neighborhood, by Selected Neighborhoods, 2019

	Allston/ Brighton (N=202)	Chinatown (N=67)	Dorchester (N=454)	East Boston (N=169)	Hyde Park (N=85)	Jamaica Plain (N=176)	Mattapan (N=82)	Roslindale (N=128)	Roxbury (N=152)	South End (N=102)
1	My community is close to medical services	My community is close to medical services	My community has people of many races and cultures	My community is close to medical services	My community has people of many races and cultures	My community has people of many races and cultures	My community has people of many races and cultures	My community has people of many races and cultures	My community has people of many races and cultures	My community is close to medical services
2	My community has people of many races and cultures	People speak my language	People speak my language (tied)	My community has people of many races and cultures	My community has good access to resources	People accept others who are different than themselves (tied)	My community is close to medical services	People care about improving their community	My community is close to medical services	My community has people of many races and cultures
3	My community has good access to resources	My community has good access to resources	My community is close to medical services (tied)	People speak my language	People care about improving their community (tied)	People care about improving their community (tied)	People care about improving their community	My community is close to medical services (tied)	People speak my language	My community has good access to resources
4	People speak my language	My community has people of many races and cultures	My community has good access to resources	My community has good access to resources	People are proud of their community (tied)	My community is close to medical services	People speak my language	People are proud of their community (tied)	People accept others who are different than themselves	People care about improving their community
5	People accept others who are different than them-selves	People care about improving their community	People accept others who are different than themselves	People care about improving their community	People speak my language	People are proud of their community	People can deal with challenges in this community	My community has good access to resources (tied)	My community has good access to resources	People speak my language
Tie			People feel like they belong in this community		My community is close to medical services	My community has good access to resources		People accept others who are different than themselves (tied)		
Tie								People speak my language		

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "none of the above"

Table 14. Percent Boston CHNA Survey Respondents Reporting Strengths of Their Community or Neighborhood, by Primary Language Spoken, 2019

	Chinese (N=140)	English (N=1,779)	Haitian Creole (N=54)	Portuguese (N=48)	Spanish (N=360)	Vietnamese (N=87)
1	My community is close to medical services	My community has people of many races and cultures	My community has people of many races and cultures	My community has people of many races and cultures	My community is close to medical services	People speak my language
2	People speak my language	My community is close to medical services	People speak my language	People speak my language	My community has people of many races and cultures	My community is close to medical services (tied)
3	My community has good access to resources	My community has good access to resources	My community is close to medical services	My community is close to medical services	People speak my language	My community has people of many races and cultures (tied)
4	My community has people of many races and cultures	People speak my language	People are proud of their community (tied)	My community has good access to resources	My community has good access to resources	My community has good access to resources
5	People care about improving their community	People care about improving their community	My community has good access to resources (tied)	People accept others who are different than themselves	People accept others who are different than themselves	People are proud of their community
Tie			People care about improving their community (tied)			People accept others who are different than themselves
Tie			People accept others who are different than themselves (tied)			

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "none of the above"

Services and Organizational Resources

Survey, focus group, and interview participants all noted proximity and abundance to health care services were major strengths of their community. Health care is the largest industry in Boston, and, as Figure 48 shows, there are 22 hospitals and 33 health center access sites in Boston, including 16 federally qualified health center organizations (with 28 sites as some have more than one location) and 5 hospital-licensed health center organizations. See APPENDIX I for number of hospitals and health centers by neighborhood.

Figure 48. Hospitals and Community Health Centers in Boston, by Neighborhood, 2019
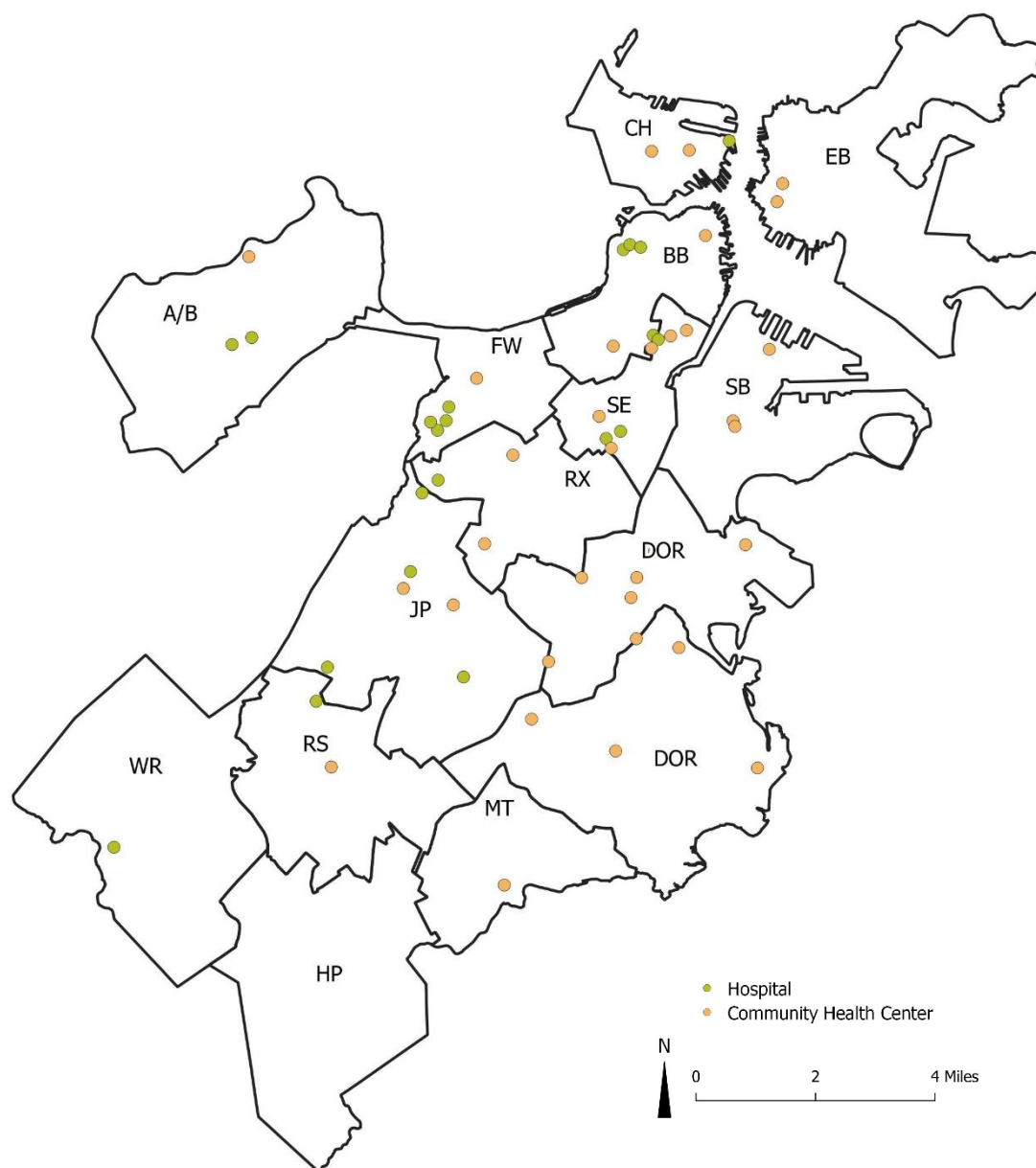
DATA SOURCES: American Hospital Directory, https://www.ahd.com, 2019; Massachusetts League of Community Health Centers, http://www.massleague.org/, 2019

NOTES: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

As noted, focus group participants who identified as LGBTQ indicated that Boston is making positive strides related to care for LGTBQ residents. Specifically, BPS has made many inroads in this area for LGTBQ students. In the 2017-2018 school year, out of 74 BPS schools with grades 6-12 who responded to the School Health Profiles survey, 33 BPS schools reported there were Gay Straight Alliances (GSA) in the schools.[45]

Additionally, BPS offers various services and supports for different sub-populations, as reported in the School Health Profiles survey. As shown in Table 15, more than three-quarters of BPS schools offer additional supports for students experiencing trauma, students experiencing homelessness, and English Language Learners.

Table 15. Number of and Percent Boston Public Schools Offering Additional Supports for Sub-Populations, by Sub-Population, 2018

	Number	Percent
Expectant and parenting students	30	42.3%
Refugee, asylee, documented and undocumented immigrant students	63	56.3%
LGBTQ students	69	61.1%
Court-involved students	75	65.2%
ELL students and ELL students with disabilities	99	83.2%
Students experiencing homelessness	105	89.0%
Students experiencing trauma	110	94.0%

DATA SOURCE: Boston Public Schools, Health and Wellness Department, School Health Profiles Survey, 2018

Many focus group and interview participants, particularly those working for a variety of organizations across the city, described the city of Boston as having a strong network of social services with strong partnerships and collaborations. One key informant described, *"Generally Boston is deeply collaborative; even though there isn't a plan, there is a willingness and appetite to collaborate and pull together in ways that affect the common good."* However, there is still a need to reduce duplicative services and strengthen collaborations. One key informant summarized, *"Community connectedness matters. The more we are talking to each other, the more success we're going to have."* Another interviewee echoed this sentiment and added, *"It can feel like an inundation of services that makes people feel disengaged. Instead we should combine services or be better partners."* An important next step, suggested key informants, is to fix infrastructure challenges around data sharing. This includes strengthening data repositories to interact across systems and tracking health and environmental data.

COMMUNITY HEALTH ISSUES – WHAT IS THE HEALTH STATUS OF BOSTON RESIDENTS?

Community Perceptions of Health

Why is This Important?

Understanding the health issues that community residents perceive as pressing is a critical step in the CHNA process, providing a "real life" perspective lived experiences, challenges, and facilitators around certain issues that complements more quantitative data about health status and conditions. Although not statistically representative, a community member survey such as was conducted for this CHNA is a useful way to obtain directional information from a large number of people. It also fills in gaps on specific topic areas or population groups where limited secondary data are available. Finally, understanding what community members see as important can be a first step to garnering the buy-in to programs and services that can be most effective in addressing those needs.

Key Findings in this Section

Understanding residents' perceptions of health is a critical step in the CHNA process, providing insights into lived experiences, including key health concerns and facilitators and barriers to addressing health conditions. The top community health concerns among Boston CHNA survey respondents were housing quality or affordability (51%) and alcohol/drug abuse (49%), followed by mental health (42%) and community violence (31%); these were also top concerns by neighborhood, race/ethnicity, age group, gender, and sexual orientation, with the addition of chronic diseases and related behaviors as well as the environment. However, there were some notable statistically significant differences by race/ethnicity and age. Asian respondents were more likely to identify smoking (37%) and elder/aging health issues (32%), Black respondents were more likely to identify diabetes (35%), Latino respondents were more likely to identify obesity (37%), and White respondents were more likely to identify the environment (39%) as one of their top five community health concerns, when compared to other groups. Youth (under 18 years) were more likely to indicate smoking (42%) and employment/job opportunities (32%) as top concerns relative to other age groups. For young adults (18-24 years) issues such as hunger/food insecurity (30%) and homelessness (29%) also rose to the top. Respondents 65 years of age and older were significantly more likely to indicate as concerns: elder/aging health issues (50%) and the environment (38%) compared to younger age groups. Boston CHNA survey results align with themes that emerged from interviews and focus groups; when asked about top health concerns participants also identified mental health and substance use, trauma, community violence, chronic diseases like asthma and obesity, healthy aging, and environmental health concerns.

Perceptions of a Healthy Community

When asked about top health concerns in Boston, focus group participants and interviewees identified mental health and substance use, trauma, community violence, chronic diseases like asthma and obesity, healthy aging, and environmental health concerns as especially concerning.

As discussed in previous sections, key informants described a need for more emphasis on prevention to address these issues. The lack of providers and services—especially that meet the needs of diverse population groups—was noted as a barrier to addressing some of these issues which contribute to extensive wait lists according to participants.

As shown in Figure 49, access to health care (65%) and affordable housing (64%) were the first and second leading factors, respectively, that Boston CHNA Survey respondents identified as important for a healthy community. Access to public transportation (52%) and access to healthy food (51%) emerged as the third and fourth leading factors that respondents characterized as important for a healthy community.

When looking at definitions of a healthy community across Boston neighborhoods (Table 16), respondents in Chinatown and Hyde Park were more likely to endorse several factors as important for community health. The majority of respondents in Chinatown (82%), East Boston (73%), and Roxbury (72%) identified access to health care as important for community health. Respondents in Chinatown (72%), Jamaica Plain (73%), and Roxbury (75%) cited affordable housing as an area of importance. Reflecting findings from focus groups (discussed in the Transportation chapter), a clean environment stood out amongst respondents in Chinatown (43%). Healthy behaviors and lifestyles were a priority in the South End (28%). Relative to other neighborhoods, a greater proportion of respondents from Hyde Park cited good roads/infrastructure (21%), low level of child abuse (11%), and strong sense of community (24%). Nearly half of respondents in Hyde Park (57%) and Chinatown (49%) cited low crime and violence as important.

Figure 49. Percent Boston CHNA Survey Respondents Reporting the Five Most Important Factors That Define a "Healthy Community" (N=2,052), 2019

Factor	Percent
Access to health care	64.5%
Affordable housing	64.1%
Access to public transportation	52.2%
Access to healthy food	50.7%
Access to good education	45.0%
Low crime and low violence/safe neighborhoods	43.3%
Access to good jobs	35.4%
Clean environment	31.7%
Effective city services	31.6%
Respect and inclusion for diverse members of the community	24.7%
Healthy behaviors and lifestyles	21.4%
Parks and recreation	19.1%
Strong sense of community	19.1%
Arts and cultural events	13.3%
Strong community leadership	12.0%
Good sidewalks and trails	11.4%
Good roads/infrastructure	10.7%
Low death and disease rates	8.7%
Low level of child abuse	8.4%
Low infant deaths	5.8%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "none of the above"

Table 16. Percent Boston CHNA Survey Respondents Reporting the Five Most Important Factors That Define a "Healthy Community," by Selected Neighborhoods, 2019

	Allston/ Brighton (N=206)	Chinatown (N=67)	Dorchester (N=463)	East Boston (N=175)	Hyde Park (N=85)	Jamaica Plain (N=179)	Mattapan (N=90)	Roslindale (N=131)	Roxbury (N=148)	South End (N=104)
1	Affordable housing	Access to health care	Affordable housing	Access to health care	Affordable housing	Affordable housing	Access to health care	Affordable housing	Affordable housing	Access to health care
2	Access to health care	Affordable housing	Access to health care	Affordable housing (tied)	Low crime and low violence/safe neighbor-hoods	Access to health care	Affordable housing	Access to health care (tied)	Access to health care	Affordable housing
3	Access to public trans-portation	Access to public trans-portation	Access to healthy food	Access to public trans-portation (tied)	Access to health care (tied)	Access to healthy food	Access to healthy food	Access to public trans-portation (tied)	Access to healthy food	Access to healthy food
4	Access to healthy food	Access to good education	Access to good education	Access to healthy food	Access to healthy food (tied)	Access to public trans-portation	Access to public trans-portation	Access to healthy food	Access to public trans-portation	Access to public trans-portation
5	Low crime and low violence/safe neighbor-hoods	Low crime and low violence/safe neighbor-hoods	Access to public trans-portation	Access to good education	Access to good education	Access to good education	Access to good education	Access to good education	Access to good education	Low crime and low violence/safe neighbor-hoods
Tie				Low crime and low violence/safe neighbor-hoods	Access to public trans-portation			Low crime and low violence/safe neighbor-hoods		

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "none of the above"

Priority Community Health Concerns

When asked to identify the top most important concerns in their community or neighborhood that shape their community's health, housing quality or affordability (51%) and alcohol/drug abuse (49%) were the top priorities, followed by mental health (42%) and community violence (31%) (Figure 50). Approximately one-quarter of respondents cited the environment (28%), obesity (25%), homelessness (24%), smoking (23%), poverty (23%), and diabetes (23%), employment/job opportunities (22%), and elder/aging health issues (22%) as among the leading concerns.

Presented in Table 17 are priority community health concerns that emerged across neighborhoods. Alcohol/drug abuse was the leading concern for respondents in Dorchester, East Boston, Roxbury, and the South End, and was among the top five concerns for respondents in other neighborhoods including Hyde Park and Jamaica Plain. Community violence was the leading concern in Mattapan and was among the top five concerns for respondents in other neighborhoods. Housing quality/affordability emerged as the leading concern in Allston/Brighton, Hyde Park, Jamaica Plain, and Roslindale. Homelessness was among the top five priorities in Dorchester, Roxbury, and the South End. The leading concern for respondents in Chinatown was smoking, followed by chronic conditions. In Allston/Brighton and Roslindale, employment and job opportunities were among the top five priorities for respondents. Hunger and food insecurity were among the top five concerns for residents of Roslindale. In Hyde Park, the health of elders and aging-related concerns was among the top five concerns. Other priority areas that emerged in multiple neighborhoods included mental health, diabetes, and the environment. Additional data by neighborhood can be found in APPENDIX I.

Figure 50. Percent Boston CHNA Survey Respondents Reporting Topmost Important Concerns in Their Community or Neighborhood That Affect Their Community's Health (N=2,053), 2019

Concern	Percent
Housing quality or affordability	50.5%
Alcohol/drug abuse	49.0%
Mental health	42.1%
Community violence	31.1%
Environment	27.7%
Obesity	24.5%
Homelessness	24.1%
Smoking	23.1%
Poverty	22.8%
Diabetes	22.8%
Employment/job opportunities	22.3%
Elder/aging health issues	22.1%
Cancer	19.8%
Hunger/food insecurity	19.0%
Heart disease and stroke	17.7%
Asthma	15.6%
Access to healthcare or other services	11.6%
Domestic violence	8.8%
Vaping	8.0%
Sexually transmitted infections (STIs)	7.0%
Rape/sexual assault	5.6%
Teenage pregnancy	4.6%
Other	4.6%
Infant and child health	4.4%
Child abuse and neglect	3.9%

DATA SOURCE: Boston CHNA Community Survey, 2019

Table 17. Percent Boston CHNA Survey Respondents Reporting Top Five Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Selected Neighborhoods, 2019

	Allston/ Brighton (N=206)	Chinatown (N=68)	Dorchester (N=470)	East Boston (N=174)	Hyde Park (N=85)	Jamaica Plain (N=177)	Mattapan (N=91)	Roslindale (N=125)	Roxbury (N=154)	South End (N=103)
1	Housing quality or affordability	Smoking	Alcohol/ drug abuse	Alcohol/ drug abuse	Housing quality or affordability	Housing quality or affordability	Community violence	Housing quality or affordability	Alcohol/ drug abuse	Alcohol/drug abuse
2	Mental health	Heart disease and stroke	Community violence	Housing quality or affordability	Mental health	Mental health	Obesity	Mental health	Housing quality or affordability	Housing quality or affordability
3	Alcohol/ drug abuse	Cancer	Housing quality or affordability	Obesity	Alcohol/ drug abuse	Alcohol/ drug abuse	Diabetes	Alcohol/ drug abuse (tied)	Mental health	Mental health (tied)
4	Environment	Environment	Mental health	Mental health	Elder/aging health issues	Community violence	Alcohol/drug abuse (tied)	Environment (tied)	Community violence	Homelessness (tied)
5	Employment / job opportunities	Diabetes (tied)	Diabetes (tied)	Diabetes	Community violence	Poverty	Housing quality or affordability (tied)	Employment / job opportunities	Homelessness	Community violence
Tie		Housing quality or affordability (tied)	Homelessness (tied)				Mental health	Hunger/food insecurity		Environment

DATA SOURCE: Boston CHNA Community Survey, 2019

When looking at priority community health concerns by various sub-populations, there were both similarities and differences across the sub-populations (Table 18). For several sub-populations, housing quality or affordability, alcohol/drug abuse, and mental health were among the most frequently selected concerns in their neighborhoods. For Asian respondents, smoking was most frequently selected as a concern in their community, and similarly for under 18 respondents, smoking was the second most frequently selected concern.

Table 19 shows the top five respondents' reported concerns affecting the health of their community by primary language spoken. Consistent with what was seen for the aforementioned sub-populations, housing quality or affordability and alcohol/drug abuse rose up as the top concerns in communities when looking across primary languages spoken. Among Chinese speaking respondents; however, smoking and heart disease/stroke were identified as the top two concerns affecting the health of their communities.

Table 18. Percent Boston CHNA Survey Respondents Reporting Top Five Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Selected Indicators, 2019

	Asian (N=310)	Black (N=457)	Latino (N=468)	White (N=678)	Under 18 years (N=197)	65+ years (N=207)	LGBTQ (N=238)	Parent of child under 18 (N=544)
1	Smoking	Alcohol/drug abuse	Alcohol/drug abuse	Housing quality or affordability	Alcohol/drug abuse	Elder/aging health issues	Housing quality or affordability	Housing quality or affordability
2	Housing quality or affordability	Housing quality or affordability	Housing quality or affordability	Alcohol/drug abuse	Smoking	Housing quality or affordability	Alcohol/drug abuse	Alcohol/drug abuse
3	Alcohol/drug abuse	Mental health	Mental health	Mental health	Mental health	Environment	Mental health	Mental health
4	Elder/aging health issues	Community violence	Obesity	Environment	Housing quality or affordability	Alcohol/drug abuse	Environment	Community violence
5	Environment	Diabetes	Community violence	Elder/aging health issues	Employment/ job opportunities	Heart disease and stroke	Community violence	Obesity

DATA SOURCE: Boston CHNA Community Survey, 2019

Table 19. Percent Boston CHNA Survey Respondents Reporting Top Five Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Primary Language, 2019

	Chinese (N=142)	English (N=1,800)	Haitian Creole (N=59)	Portuguese (N=49)	Spanish (N=371)	Vietnamese (N=86)
1	Smoking	Housing quality or affordability	Housing quality or affordability	Alcohol/drug abuse (tied)	Alcohol/drug abuse	Alcohol/drug abuse
2	Heart disease and stroke	Alcohol/drug abuse	Mental health (tied)	Housing quality or affordability (tied)	Housing quality or affordability	Community violence
3	Cancer (tied)	Mental health	Diabetes (tied)	Community violence	Mental health (tied)	Mental health
4	Elder/aging health issues (tied)	Community violence	Alcohol/drug abuse	Mental health	Obesity (tied)	Smoking
5	Environment	Environment	Community violence (tied)	Diabetes (tied)	Community violence	Elder/aging health issues
	Housing quality or affordability		Obesity (tied)	Smoking (tied)	Diabetes	
Tie			Employment/job opportunities	Homelessness		

DATA SOURCE: Boston CHNA Community Survey, 2019

Overall Morbidity and Mortality

Why is This Important?

Understanding disease and mortality patterns in a population. Death rates help to measure the burden and impact of disease on a population.[46] Premature mortality data provide a picture of preventable deaths and point to areas where additional health and public health interventions may be warranted. Life expectancy at birth measures health status across all age groups and shifts in life expectancy are often used to describe trends in mortality.[47]

Key Findings in This Section

Cancer and heart disease continued to be the top two leading causes of death in Boston. Accidents was third, where unintentional overdoses accounted for 55% of all deaths due to accidents. For premature death—death among those under 65 years old—accidents were the leading cause of premature death for Whites and Latino residents, with unintentional opioid overdoses accounting for 70.2% of all deaths due to accidents for Latino residents and 76.7% of all deaths due to accidents for White residents. Homicide was one of the top five leading causes of premature death for Black and Latino residents, while suicide was in the top five leading causes of premature death for White and Asian residents.

Leading Causes of Death and Premature Death

Cancer and heart disease were the leading causes of death in Boston and have remained so for the last six years (Table 20). In the most recent years, accidents, which include drug overdoses, has been the third leading cause of death. In 2016, unintentional opioid overdoses accounted for 55.3% of all deaths due to accidents. Other leading causes of death in the top five are cerebrovascular diseases which includes stroke, and chronic lower respiratory diseases which includes conditions such as chronic obstructive pulmonary disease (COPD) and emphysema complete the top five leading causes of death.

Table 20. Leading Causes of Mortality in Boston, Age-Adjusted Rate per 100,000 Residents, 2011–2016

	2011	2012	2013	2014	2015	2016
1	Cancer 171.7	Cancer 187.3	Cancer 175.9	Cancer 153.3	Cancer 163.4	Cancer 163.6
2	Heart Disease 130.4	Heart Disease 132.3	Heart Disease 133.7	Heart Disease 125.7	Heart Disease 136.8	Heart Disease 126.0
3	Accidents 28.9	Cerebrovascular Diseases 34.4	Accidents 32.1	Accidents 34.8	Accidents 44.8	Accidents 54.6
4	Chronic Lower Respiratory Diseases 28.8	Accidents 29.4	Chronic Lower Respiratory Diseases 30.4	Cerebrovascular Diseases 29.8	Cerebrovascular Diseases 29.3	Cerebrovascular Diseases 26.7
5	Cerebrovascular Diseases 26.1	Chronic Lower Respiratory Diseases 23.5	Cerebrovascular Diseases 26.6	Chronic Lower Respiratory Diseases 25.6	Chronic Lower Respiratory Diseases 27.9	Chronic Lower Respiratory Diseases 25.3

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Death Files, 2011-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

While cancer and heart disease were the leading cause of death for residents of all races/ethnicities, the leading causes of death for after these two conditions varied for different groups (Table 21). For Asian residents, cerebrovascular diseases, Alzheimer's Disease, and hypertension/renal disease round out the top five leading causes of death. For Black, Latino, and White residents, accidents were the third leading cause of death, with unintentional opioid overdoses accounting for a large part of these deaths (40.9% of all deaths due to accidents for Black residents, 66.7% for Latino residents, and 57.2% for White residents). For Black and Latino residents, diabetes was one of the top five leading causes of death.

Table 21. Leading Causes of Mortality in Boston, by Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents, 2014–2016 Combined

	Asian	Black	Latino	White
1	Cancer 127.0	Cancer 175.3	Cancer 109.4	Cancer 173.1
2	Heart Disease 64.6	Heart Disease 133.9	Heart Disease 87.8	Heart Disease 149.3
3	Cerebrovascular Diseases 21.5	Accidents 38.3	Accidents 41.6	Accidents 56.5
4	Alzheimer's Disease 18.1	Cerebrovascular Diseases 39.9	Diabetes 25.1	Chronic Lower Respiratory Diseases 32.7
5	Hypertension/ Renal Disease 16.1	Diabetes 38.6	Cerebrovascular Diseases 20.2	Cerebrovascular Diseases 26.6

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Death Files, 2014-2016 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

When examining leading causes of premature death—death before age 65—cancer has been the leading cause of death from 2011-2016 (Table 22). Heart disease was the second leading cause of premature death from 2011-2013 and fell to third after 2013, while accidents has become the second leading cause of premature death. In 2016, unintentional opioid overdoses accounted for 69.3% of all premature deaths due to accidents in 2016. Suicide and homicide were also in the top five leading causes of premature death in 2016.

Table 22. Leading Causes of Premature Mortality in Boston, Age-Adjusted Rate per 100,000 Residents, 2011-2016

	2011	2012	2013	2014	2015	2016
1	Cancer 55.3	Cancer 59.6	Cancer 53.9	Cancer 44.5	Cancer 48.9	Cancer 45.8
2	Heart Disease 31.0	Heart Disease 33.4	Heart Disease 28.0	Accidents 28.0	Accidents 37.6	Accidents 46.0
3	Accidents 19.6	Accidents 19.4	Accidents 25.9	Heart Disease 25.3	Heart Disease 26.6	Heart Disease 25.6
4	Homicide 7.1	Homicide 6.7	Suicide 6.1	Homicide 7.3	Suicide 6.9	Suicide 6.5
5	Suicide 8.1	Chronic Liver Disease & Cirrhosis 8.4	Homicide 4.7	Diabetes 6.3	Homicide 4.9	Homicide 4.7

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Death Files, 2011-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

Among Latino and White residents, accidents were the leading cause of premature death in 2014-2016 (Table 23), with unintentional opioid overdoses accounting for 70.2% of all deaths due to accidents for Latino residents and 76.7% of all deaths due to accidents for White residents. For White and Asian residents, suicide was the fourth leading cause of premature death, while it was homicide for Black and Latino residents.

Table 23. Leading Causes of Premature Mortality in Boston, by Race/Ethnicity, Age-Adjusted Rate per 100,000 Residents, 2014-2016 Combined

	Asian	Black	Latino	White
1	Cancer 48.6	Cancer 61.5	Accidents 41.4	Accidents 47.7
2	Heart Disease 8.0	Heart Disease 34.6	Cancer 34.7	Cancer 41.1
3	Accidents 6.0	Accidents 31.5	Heart Disease 21.7	Heart Disease 28.3
4	Suicide 2.6	Homicide 19.9	Homicide 7.5	Suicide 7.2
5	NA	Diabetes 9.1	Chronic Liver Disease & Cirrhosis 6.7	Chronic Liver Disease & Cirrhosis 5.5

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Death Files, 2014-2016 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: NA indicates insufficient number of records for analysis; Mortality rates due to heart disease, accidents, and suicide for Asian residents and the mortality rate due to chronic liver disease and cirrhosis for Latino residents were based on 20 or fewer cases and should be interpreted with caution

Table 24 presents the leading causes of premature death for men and women in Boston, 2014-2016. For men, the death rate by accidents, their leading cause of premature death, was 2 ½ times that for women. However, for both sexes, unintentional opioid overdoses accounted for approximately 70% of the deaths due to accidents. Heart disease was the third leading cause of premature death for both men and women. However, for men, homicide and suicide were the

fourth and fifth leading causes of premature death, while for women it was chronic lower respiratory diseases and cerebrovascular diseases. Premature mortality rates by neighborhood can be found in APPENDIX I.

Table 24. Leading Causes of Premature Mortality in Boston, by Sex, Age-Adjusted Rate per 100,000 Residents, 2014–2016 Combined

	Female	Male
1	Cancer 41.5	Accidents 55.9
2	Accidents 19.6	Cancer 52.0
3	Heart Disease 15.0	Heart Disease 37.8
4	Chronic Lower Respiratory Diseases 3.9	Homicide 10.7
5	Cerebrovascular Diseases 3.6	Suicide 9.5

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Death Files, 2014-2016 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

Obesity, Nutrition, and Physical Activity

Why is This Important?

> "When your kid is hungry, it's much cheaper to buy a soda and a bag of chips than buy some fruit. There's a huge difference in paying almost $10 for berries versus $3 for a soda and large bag of chips that'll fill you." — Key informant interviewee

Given that cancer and heart disease are the leading causes of death in Boston and the U.S., it is critical to examine the pervasiveness of their risk factors, such as obesity, nutrition, and physical activity. Obesity is the second leading cause of preventable death in the United States; currently, about 40% of American adults and 19% of American youth are considered obese.[48] Adults who are obese are at increased risk of morbidity from heart disease, stroke, type 2 diabetes, and certain types of cancer.[49] Children who are obese are more likely to have high blood pressure and high cholesterol, type 2 diabetes, asthma and sleep apnea, and suffer from psychological problems such as anxiety and depression.[50] The causes of obesity are several and largely preventable including eating healthy food and engaging in physical activity, as well as limiting screen time. Community environment such as availability of healthy food and opportunities for fitness are critical factors – and lack of these resources at the neighborhood and population level follow similar patterns by race, ethnicity, and socioeconomic status to the inequities seen across nearly all other topics.

Key Findings in This Section

Concerns related to obesity were frequently discussed among focus group and interview participants. More than half of Boston adults and one-third of Boston Public high school students reported being overweight or obese; Black and Latino adults and high school students were more likely to be overweight or obese than White residents or students. The prevalence of obesity and overweight also follows a socioeconomic gradient; residents who are renters, have lower levels of education, and lower income, were more likely to be obese or overweight compared to their counterparts. Neighborhood level obesity rates also are patterned by racial composition and socioeconomic status in most instances. Mattapan, Hyde Park, Dorchester, West Roxbury, East Boston, and Roslindale have significantly greater proportions of adults who are obese or overweight compared to the rest of Boston.

Obesity and Overweight

Issues related to overweight and obesity and food insecurity are intertwined, coupled with the racial and economic inequities that are the drivers for the health disparities seen in the data. Focus group and interview participants discussed these issues as they cited concerns related to affordable and accessible food options for healthy eating and safe open green spaces for exercise, which they viewed as barriers to combating obesity.

Childhood obesity was a common theme that emerged among focus group and interview discussions, who linked challenges related to healthy eating with socioeconomic status. Concerns about childhood obesity were especially prominent in focus groups with immigrant parents and with low-income residents from Dorchester. Parents in these groups described challenges affording and accessing healthy food, time constraints, and economic challenges that create barriers for them to provide healthy opportunities for their children. One interviewee shared, *"When your kid is hungry, it's much cheaper to buy a soda and a bag of chips than buy some fruit. There's a huge difference in paying almost $10 for berries versus $3 for a soda and large bag of chips that'll fill you."* Other key informants perceived that limited physical activity and increased screen time is exacerbating the issue. One shared, *"When you look at the full picture around obesity it makes sense. You have kids spending the majority of their time in front of a screen, less investments in physical education and health classes, and finally poor eating."* School nutrition was mentioned in one focus; participants in Dorchester perceived that public schools were making positive efforts to enhance nutritional food and provide prevention resources to communities; however, more is needed during school breaks and the summer time.

As shown in Figure 51, more than half (57%) of adults across Boston reported being classified as obese or overweight in 2013-2017. Data in APPENDIX I indicate that the percent of adults who are obese or overweight has remained steady over the last several years. However, rates are different by various population groups. Nearly seven in ten Black (68%) and Latino (68%) adults reported being obese or overweight compared with five in ten White (51%) adults across Boston (a statistically significant difference). One-third of Asian adults (34%) reported being obese or overweight, significantly lower than the prevalence for White adults (51%). The prevalence of obesity and overweight also follows a socioeconomic gradient, with a significantly higher percent of renters (53%-68%), residents with lower levels of educational attainment (61%-70%), residents with lower income (54%-62%), residents out of work (63%) being obese or overweight compared to their counterparts.

Figure 51. Percent Adults Reporting Obesity or Overweight, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Boston 56.8%

Asian 34.4%*
Black 68.4%*
Latino 68.1%*
White 51.3%

Male 61.2%
Female 52.6%*

18-34 years 39.6%
35-49 years 54.0%*
50-64 years 69.1%*
65+ years 64.8%*

BHA resident 65.3%*
Renter, rental assistance 68.2%*
Renter, no assistance 53.4%*
Other housing arrangement 53.8%
Home owner 57.9%

Less than HS graduate 69.9%*
HS graduate 61.1%*
Some college or more 53.0%

Less than 10 years in U.S. 44.7%*
More than 10 years in U.S. 64.7%*
Born in U.S 56.7%

Heterosexual/non-transgender 56.9%
LGBTQ 55.7%

Less than $25,000 61.9%*
$25,000-$49,999 58.5%*
$50,000 or more 53.5%

Out of Work 62.5%*
Other 57.7%
Employed 55.5%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

At the neighborhood level, the percent of adults in Mattapan (71%), Hyde Park (65%), Dorchester (63-65%), West Roxbury (64%), East Boston (63%), Roslindale (63%) who were obese or overweight was significantly higher than the rest of Boston (Figure 52).

Figure 52. Percent Adults Reporting Obesity or Overweight, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
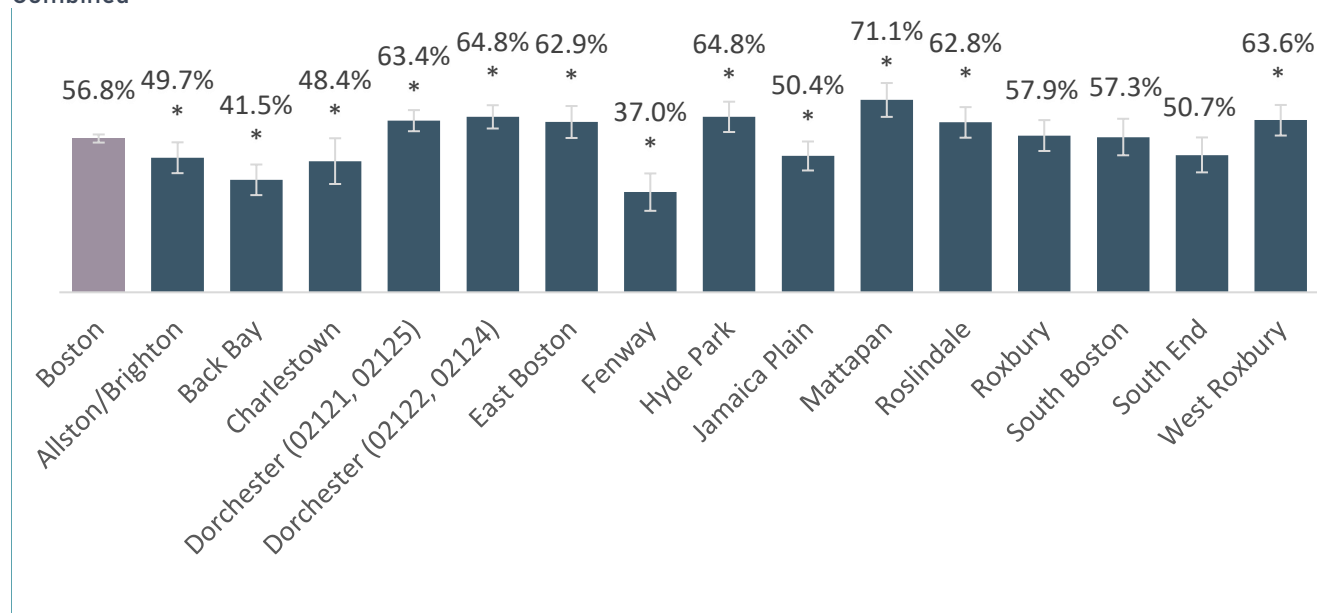
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p< 0.05); Error bars show 95% confidence interval

Nearly one-third of Boston high school youth (33%) reported being obese or overweight in 2013-2017 (Figure 53). Rates have stayed steady over time, data which can be found in APPENDIX I. Similar to patterns for adults, a significantly higher proportion of Latino (37%) and Black (36%) high school youth reported being obese or overweight than White high school youth (23%). Racial/ethnic differences in the prevalence of obesity or overweight were similar for males and females. More than one-third of LGBTQ (38%) youth reported being obese or overweight, a proportion that was significantly higher than that of heterosexual or non-transgender youth (32%). These trends reflect those seen at the national level for LGBTQ youth. [51]

Figure 53. Percent Boston Public High School Youth Reporting Obesity or Overweight, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Boston	32.9%
Asian	20.6%
Black	36.1%*
Latino	37.2%*
White	22.7%
Female	32.3%
Male	33.4%
Asian females	14.6%
Black females	37.2%*
Latina females	37.3%*
White females	19.2%
Asian males	26.5%
Black males	35.1%*
Latino males	37.1%*
White males	25.8%
Heterosexual/non-transgender	32.1%
LGBTQ	37.7%*

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined

DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Physical Activity

Limited access to affordable opportunities for physical activity was a common theme in discussions with residents. As one focus group parent shared, *"Not everyone is able to afford a $150 for a camp during school vacation."* Community resources such as the YMCA and Boys and Girls Club were identified as inaccessible to many due to cost. One resident from Dorchester explained, *"The only gym by me is the YMCA, but that is now $30 a month. Who has an extra $30 a month? They say they do it by your income but there's no way I can afford that."* Seniors also expressed challenges affording these resources. One shared, *"I tried to keep up with my monthly fee at the Y but I just can't afford it anymore."* Focus group participants in Chinatown and Dorchester suggested investing in fitness installations in public spaces such as parks and community centers.

Reflecting residents' concerns, a low percent of youth across Boston reported regular exercise. Three in ten (30%) Boston high school youth reported engaging in regular physical activity in 2013-2017 (Figure 54). Among female high school youth, less than one quarter of Asian (17%), Latina (21%), and Black (22%) students engaged in regular physical activity, significantly lower than the percent reported among White female youth (37%). One-quarter of Asian male high school youth (28%) reported engaging in regular physical activity, which was significantly lower than 44% reported by White male high school youth reporting in engaging in physical activity. About one in five high school youth who identified as LGBTQ (21%) reported regular

physical activity, a proportion that was significantly lower than that of heterosexual and non-transgender students (31%).

Figure 54. Percent Boston Public High School Youth Reporting Engagement in Regular Physical Activity, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Regular physical activity is defined as at least 60 minutes per day for at least 5 of the past 7 days; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval
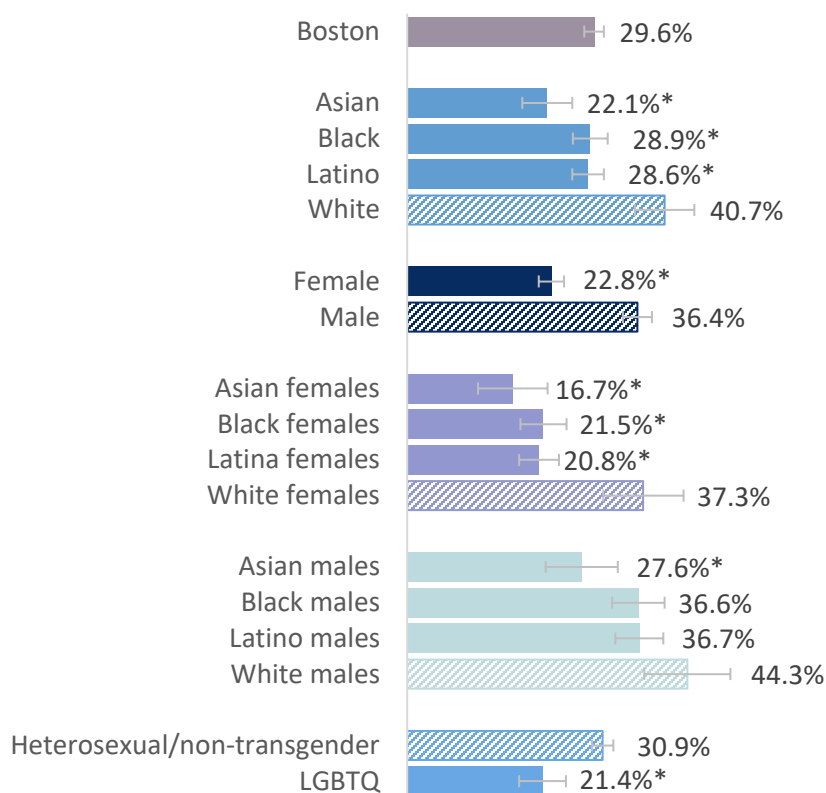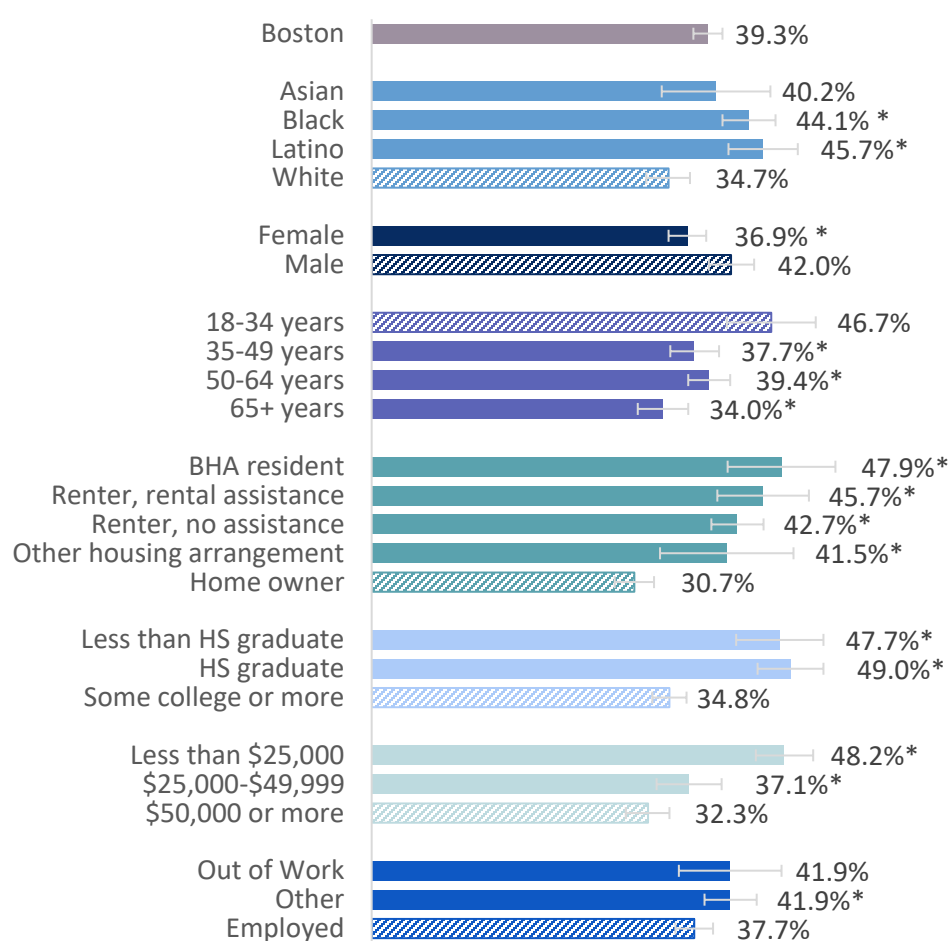
Healthy Eating

In 2013-2015, four in ten (39%) Boston adults reported consuming less than one fruit per day (Figure 55). A significantly higher proportion of adults who were Black (44%), Latino (46%), male (42%), renters (42%-48%), and younger (18-34 years of age; 47%) reported not consuming fruit on a daily basis compared to their counterparts. As with patterns for obesity and overweight, adults with lower socioeconomic status were more likely report fruit consumption on a less than daily basis.

Figure 55. Percent Adults Reporting Fruit Consumption of Less Than Once per Day, by Boston and Selected Indicators, 2013 and 2015 Combined

Boston	39.3%
Asian	40.2%
Black	44.1% *
Latino	45.7%*
White	34.7%
Female	36.9% *
Male	42.0%
18-34 years	46.7%
35-49 years	37.7%*
50-64 years	39.4%*
65+ years	34.0%*
BHA resident	47.9%*
Renter, rental assistance	45.7%*
Renter, no assistance	42.7%*
Other housing arrangement	41.5%*
Home owner	30.7%
Less than HS graduate	47.7%*
HS graduate	49.0%*
Some college or more	34.8%
Less than $25,000	48.2%*
$25,000-$49,999	37.1%*
$50,000 or more	32.3%
Out of Work	41.9%
Other	41.9%*
Employed	37.7%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, and 2015 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

As shown in Figure 56, one-quarter (25%) of adults across Boston reported less than daily vegetable intake in 2013-2015, combined. Adults who identified as Black (33%), Latino (29%), male (28%), adults 35-49 and 50-64 years of age (21-25%), renters (25%-34%), having less than a college education (35-37%), and immigrants living in the US for less than 10 years (29%) were significantly more likely than their counterparts to report consuming vegetables less than daily.

Figure 56. Percent Adults Reporting Vegetable Consumption of Less Than Once per Day, by Boston and Selected Indicators, 2013 and 2015 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, and 2015 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

More than four in ten (45%) Boston public high school students reported consuming fruit on a less than daily basis in 2013-2017 (Figure 57). Among female high school students, a significantly higher proportion of Latina (52%), Black (50%), and Asian (45%) female students reported less than daily fruit consumption than White female students (35%). Among male high school students, Latino male students (46%) were significantly more likely than White male students (38%) to consume fruit on a less than daily basis.

Figure 57. Percent Boston Public High School Youth Reporting Fruit Consumption Less Than Once per Day, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
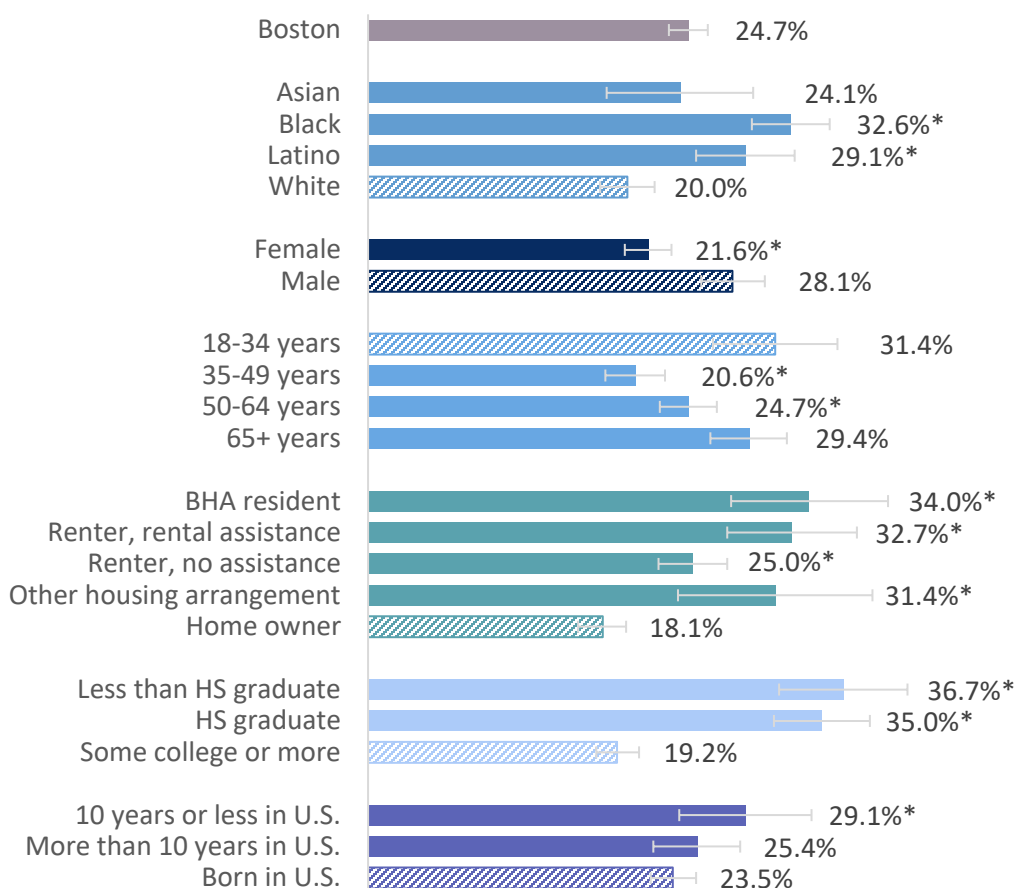
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office

NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Half (50%) of Boston Public High School students reported consuming vegetables on a less than daily basis in 2013-2017 (Figure 58). When looking at patterns by race/ethnicity and gender, a significantly high proportion of Latina/o (59% and 54%) and Black (57% and 52%) female and male students, respectively, ate vegetables less than daily compared to 31% of White female students and 40% of White male students.

Figure 58. Percent Boston Public High School Youth Reporting Vegetable Consumption Less Than Once per Day, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Boston — 50.1%
Asian — 30.2%
Black — 54.6% *
Latino — 56.9% *
White — 35.8%
Female — 51.4%
Male — 48.8%
Asian females — 29.3%
Black females — 57.0% *
Latina females — 59.2% *
White females — 31.4%
Asian males — 31.1%
Black males — 52.2% *
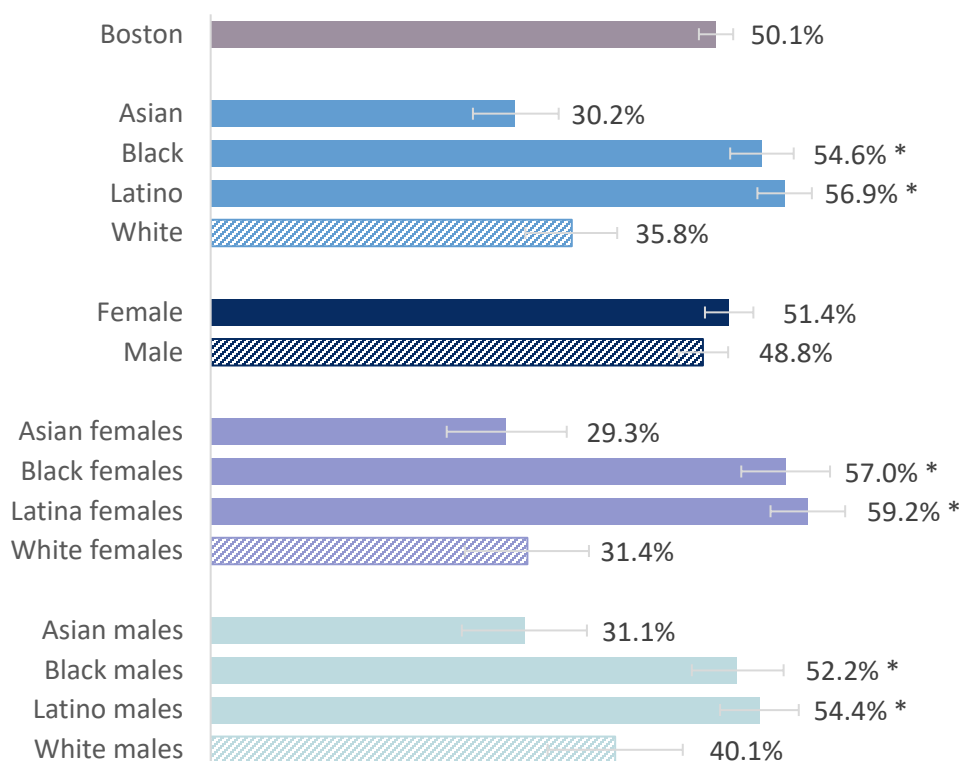Latino males — 54.4% *
White males — 40.1%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

A few key informants and focus group participants mentioned concerns related to obesity in immigrant communities. Interviewees perceived an increase in obesity among immigrants and attributed the concerns to American diets, citing easy access to fast food restaurants and processed foods. One interviewee explained, "*Coming from a country with undernutrition, the change in diet impacts obesity.*"

Approximately one in seven Boston CHNA survey respondents reported sometimes choosing fast food because it was cheaper (16%) As shown in Figure 59, the percent of residents who indicated that they chose fast food because it was cheaper appeared to vary by language use. Three in ten (31%) respondents who primarily spoke Haitian Creole reported selecting fast food on a weekly basis because it was cheaper, followed by two in ten residents who spoke primarily Vietnamese (24%) and Spanish (20%). However, these figures should be interpreted with caution given the small sample sizes for some groups.

Figure 59. Percent Boston CHNA Survey Respondents Reporting They Chose Fast Food Because It Was Cheaper Than Other Options At Least Once Per Week in Past Month, by All Respondents and Primary Language Spoken, 2019
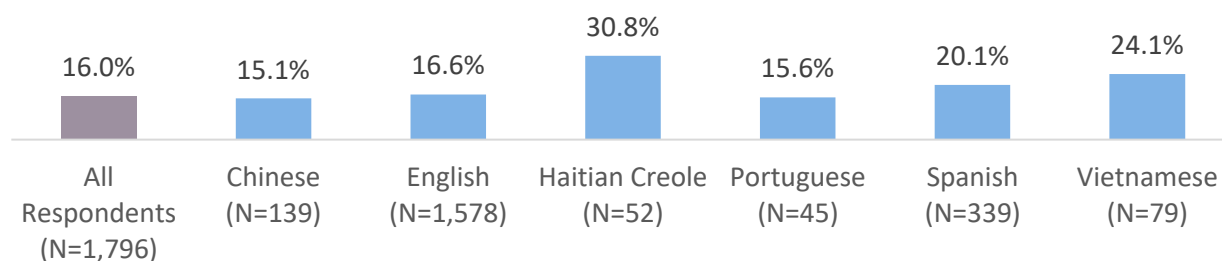
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Question was worded: "In the past month, how often did you choose fast food (such as McDonalds, KFC, or Wendy's) because it was cheaper than other options?"; response options: never/rarely, 1-3 times per month (less than once a week), 1-2 times per week, 3-4 times per week, 5-6 times per week, 1+ times per day, and prefer not to answer; Percentage calculations do not include respondents who selected "prefer not to answer"; there were statistically significant differences for the following primary languages spoken when compared to the rest of the survey sample ($p < 0.05$): Haitian Creole, Spanish, and Vietnamese

Food and Physical Activity Access

Focus group and interview participants expressed concern about limited healthy food options in lower income neighborhoods across the city—particularly in Dorchester, Mattapan, and Roxbury. The higher cost of fresh produce and lack of time for healthy food preparation were identified as barriers to healthy eating. One Dorchester resident shared, "*Buying cheap food is not good for your kids but I can't afford Whole Foods.*" Similarly, another resident who identified as low income summarized, "*People work so many jobs that it's very difficult to cook. There's no time so you just work to eat any kind of junk food.*"

Some residents in focus groups described a prevalence of convenient stores and fast food restaurants in low-income communities, which many linked to the rise of obesity and diabetes. One parent from Dorchester shared, "*In our neighborhood we have a lot of corner stores full of a bunch of junk foods. If you go to fruit and veggie areas in corner stores…those fruits have often been sitting there a long time and have fruit flies. If you can't make it out to South Bay or Grove Hall, that's what your healthy options are.*" Further, focus group participants from these communities perceived that their neighborhoods had lower quality food compared to more affluent areas of the city. One resident shared, "*The problem is that you can't get quality food unless you leave your community. It feels like the food in our supermarkets [in Dorchester] is what the other stores are not able to sell…the fruit is bad, the meat low quality…*" In addition, transportation was cited a barrier to accessing healthy food by a few focus group participants and interviewees. One shared, "*Some places are only accessible by car; folks come to the food pantry and only get things based on what they can carry sometimes. Grocery stores accessible by T [stations] are some of the more expensive; so, cost of nutritious and high-quality food is a challenge.*"

As shown in Figure 60, more than half of East Boston includes regions where there is not a grocery store within half a mile, as indicated by light blue shading. The neighborhoods of Jamaica Plain, West Roxbury, and Hyde Park, and portions of Roxbury, Mattapan, and Dorchester are also characterized by sizable geographic areas with limited access to grocery stores. Much of these areas where there is no grocery store also do not include convenience

stores, drug stores, or specialty markets. In Dorchester, grocery store access is concentrated in the northern region, with convenience stores and drug stores covering the remaining area where grocery store access is within half a mile of residents.

Figure 60. Access to Food Retailers, by Type and Neighborhood, 2019

Food Retailers

- Small Convenience stores
- Convenience stores, Pharmacies and Drug Stores
- Specialty Food Stores, Meat Markets, and Fish and Seafood Markets
- Small Supermarkets and Other Grocery, Farmers Markets, Fruits and Vegtable Markets
- Supermarkets and Other Grocery, Warehouse and Supercenter

☐ Boston Neighborhoods

Access to a Grocery Store? (1/2 mile)

- No
- Unlikely
- Likely
- Yes

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Producted by: Metropolitan Area Planning Council
Data Sources: MAPC, MassGIS, BostonGIS
Date: February 2019

0   0.5   1   1.5   2 Miles

DATA SOURCE: Courtesy of Metropolitan Area Planning Council, 2019

Chronic Disease

Why is This Important?

Chronic disease is both prevalent and costly. Six in ten American adults have a chronic disease and four in ten have two or more. [52] The total costs in the U.S. for direct health care treatment for chronic health conditions totaled $1.1 trillion in 2016—equivalent to 5.8 percent of the U.S. gross domestic product (GDP). [53] Although chronic diseases are among the most common and costly health problems, they are also among the most preventable through changes in behavior such as reduced use of tobacco and alcohol and improved diet and physical activity. Two of the most preventable chronic diseases, heart disease and diabetes, accounted for an estimated 715,000 deaths in 2016. [54] As seen across other health issues, many chronic conditions such as heart disease, diabetes, and asthma disproportionately affect communities of color, lower income individuals, and residents of low resourced neighborhoods, the same groups more likely to experience employment, financial, and housing insecurity.

Key Findings in This Section

Among focus group and interview participants, diabetes was frequently mentioned as a community concern that impacts both adults and children, followed by pediatric asthma. While there is a low prevalence of diabetes and asthma in Boston (9% and 11% respectively), there were significant differences across the population. Black and Latino residents have a higher prevalence of diabetes and experience higher diabetes-related hospitalization and death rates than White residents. Similar to diabetes, there were disparities in the distribution of asthma across the population, including by race/ethnicity, socioeconomic status, and neighborhood. Black and Latino adults and children experience significantly higher asthma-related emergency department visits compared to White adults and children. Participants shared that young children living in poverty are disproportionally affected by pediatric asthma as a result of poor environmental factors and/or poor living conditions including exposure to air pollutants, rodents, mold, tobacco smoke, and lead. Also disproportionately affected by diabetes and asthma are residents of Roxbury and Dorchester, who experience diagnoses and hospitalizations at significantly higher rates than residents in the rest of Boston. Additionally, in 2013-2017, one-quarter (25%) of Boston adults reported being diagnosed with hypertension, one of the most significant risk factors for heart disease and stroke.

Diabetes

Diabetes was frequently mentioned as a community concern that had an impact on both adults and children. Many focus group and interview participants discuss diabetes in connection with obesity. For example, participants in East Boston explained that stress often triggers unhealthy coping mechanisms such as unhealthy eating that cause illness. One resident shared, "*I work with a lot of women and what I see is a lack of motivation [to exercise]. Moms have to work so much and all of their energy goes to mechanisms to cope like eating poorly; stress often means weight gain.*" Further, key informants perceived the rise in Type 2 Diabetes symptoms among young children—particularly among Black and Latino children. One interviewee shared, "*I'm seeing many of our elementary-aged kids exhibiting early signs of Type 2 Diabetes...the darkening ring behind the neck, blurred vison, and frequent urination. Lots of times parents don't realize that these early symptoms are dangerous.*" Lastly, a couple of focus group participants

from Dorchester described challenges affording insulin, sharing that they often skipped doses to make it last longer.

While the prevalence of reported diabetes across Boston was 9% in 2013-2017, there were significant differences in the distribution of diabetes across the population. Compared to their counterparts, a significantly higher proportion of adults who identified as Black (15%), Latino (12%), older (≥50 years; 16-23%), Boston Housing Authority residents (18%), renters receiving rental assistance (17%), adults with a high school education or less (12%-18%), immigrants who have resided in the US for more than 10 years (14%) reported a diabetes diagnosis (Figure 61).

Figure 61. Percent Adults Reporting Diabetes Diagnosis, by Boston and Selected Indicators, 2013, 2015, and 2017
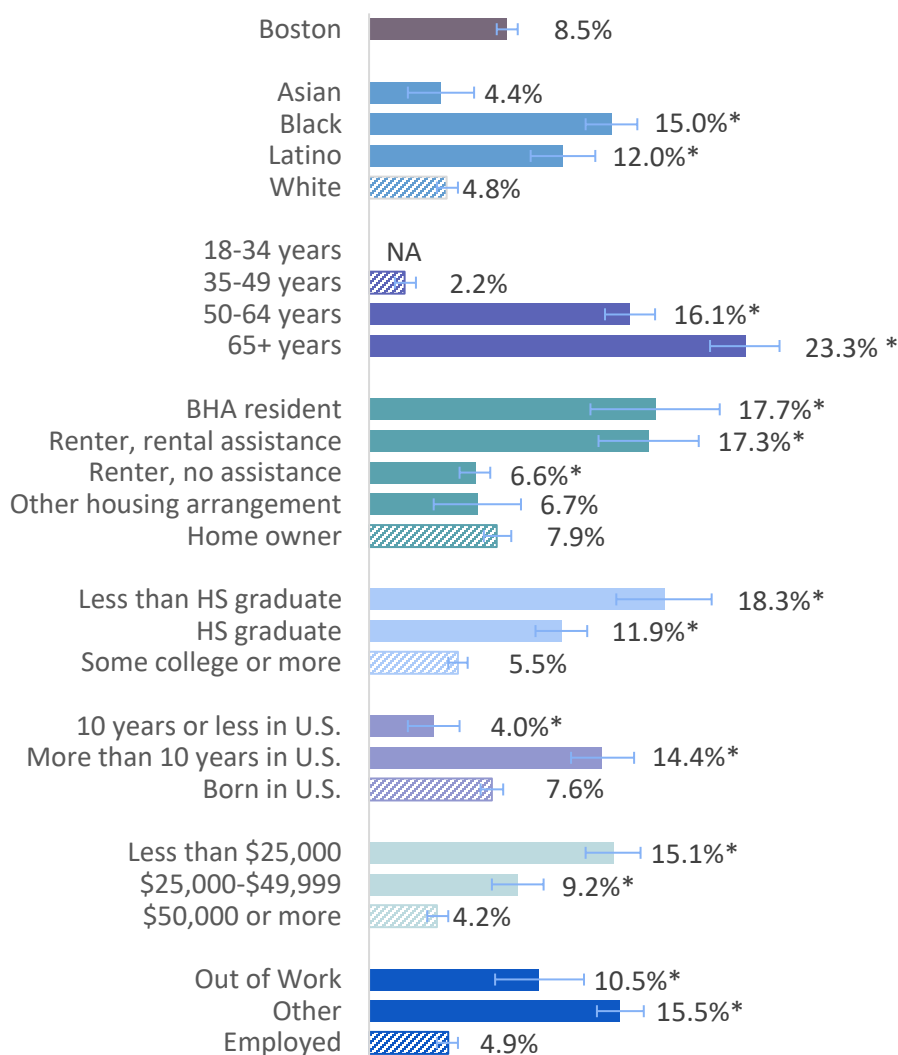
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: NA denotes where data not presented due to insufficient sample size; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

In 2013-2017, compared to the rest of Boston, a significantly higher percent of adults in Mattapan (18%), Roxbury (14%), and Dorchester (02122, 02124; 13%) reported a diabetes diagnosis (Figure 62). By comparison, a significantly lower percent of adults in Allston/Brighton (4%), Fenway (4%), Back Bay (5%), Charlestown (5%), Jamaica Plain (5%), and South Boston (6%) reported a diabetes diagnosis during this period.

Figure 62. Percent Adults Reporting Diabetes Diagnosis, by Boston and Neighborhood, 2013, 2015, and 2017

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

In 2016-2017, there were 22.4 diabetes-related hospitalizations per 10,000 Boston residents. Notably, the diabetes hospitalization rate for Black residents (46.2 hospitalizations per 10,000 residents) was three times the rate for White residents (14.5 hospitalizations per 10,000 residents). Black and Latino residents were significantly more likely than White residents to experience a diabetes-related hospitalization, while Asian residents were significantly less likely than White residents to experience a diabetes-related hospitalization. The diabetes hospitalization rate increased with age: compared to adults 65 years of age or older, younger and middle-aged adults were significantly less likely to experience diabetes-related hospitalizations (Figure 63).

Figure 63. Diabetes Hospitalization Rate, by Boston and Selected Indicators, Age–Adjusted Rate per 10,000 Residents, 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 10,000 residents

The diabetes hospitalization rate significantly was significantly higher in Roxbury (44.4 hospitalizations per 10,000 residents) compared to the rest of Boston (Boston overall minus Roxbury). Mattapan, Dorchester (02122, 02124), Hyde Park, Dorchester (02121, 02125), and the South End also had significantly higher diabetes hospitalization rates. The diabetes hospitalization rate was lowest in Allston/Brighton and Back Bay, where it was significantly lower than the rest of Boston. See APPENDIX I for data by neighborhood.

Similar to patterns for diabetes diagnoses and hospitalizations, the diabetes mortality rate for Black (40.7 deaths per 10,000 residents) and Latino (28.7 deaths per 10,000 residents) residents was significantly higher than that for White residents (17.4 deaths per 10,000 residents) in 2016-2017 (Figure 64). The diabetes mortality rate among Asian residents (9.1 deaths per 10,000 residents) was nearly half of that for White residents during the same period.

Figure 64. Diabetes Mortality Rate, by Boston and Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents, 2016–2017 Combined

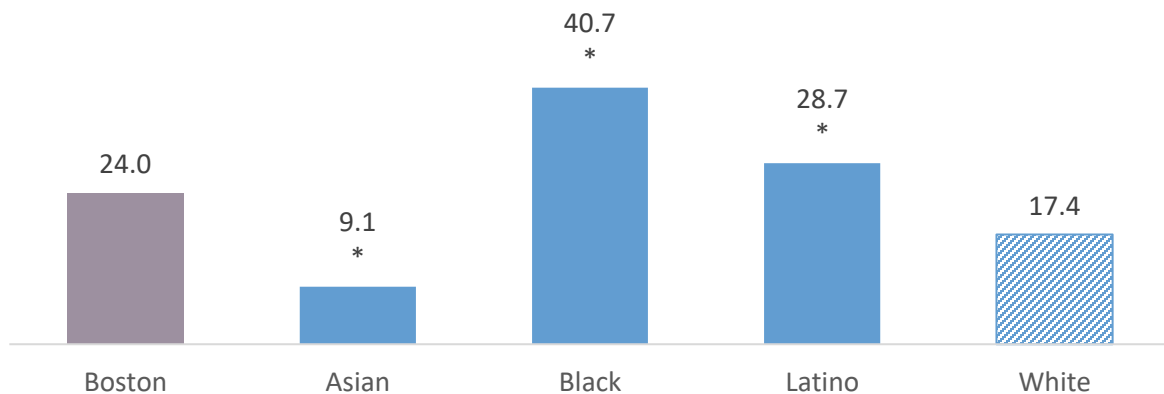DATA SOURCE: Boston Public Health Commission, Boston resident deaths, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Sample size for Asian is ≤ 20 and rate should be interpreted with caution; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Looking across the Boston neighborhoods, the diabetes mortality rate in Roxbury (44 deaths per 10,000 residents), Dorchester (02122 and 02124; 37 deaths per 10,000 residents), and Mattapan (36 deaths per 10,000 residents) were the highest in the city across neighborhoods. See APPENDIX I for data.

Asthma

After diabetes and obesity, pediatric asthma was the most frequently cited chronic concern among focus group participants and key informants, especially for those who lived or worked in Dorchester, Roxbury, and East Boston. One key informant explained, *"So many of our kids…are suffering from chronic and active asthma, where they need their inhalers every single day."* Participants shared that young children living in poverty are disproportionality affected by pediatric asthma as a result of poor environmental factors and/or poor living conditions including exposure to air pollutants, rodents, mold, tobacco smoke, and lead. For example, one key informant from Chinatown explained that the neighborhood's proximity to the highway, and poor ventilation systems in older buildings exacerbated asthma rates. One resident shared, *"Asthma rates are high [in Chinatown]. This is related to the prevalence of tobacco use, as well as living conditions; so many housing developments have pests like rats and cockroaches."* Further, pediatric asthma was also described as a factor affecting school attendance. Key informants explained that when children are sent home due to asthma concerns, it impedes a parent's ability to maintain stable employment. One interviewee shared, *"It's really hard for parents to pick kids up from school or make meetings, because making meetings means missing work."*

Second hand smoke from tobacco and marijuana were also mentioned as concerns in the home and workplace. For example, an interviewee that worked with children explained, *"We're seeing a trend of increases in asthma; this can go in line with more experiences of second-hand smoke now that marijuana is legalized. A lot of kids are in cars or homes where marijuana smoke is present."*

In 2013-2017, across Boston 11% of adults reported a diagnosis of asthma (Figure 65). The prevalence of asthma was significantly higher for adults who identified as Black (15%), female (15%), residents of Boston Housing Authority units (18%), renters receiving rental assistance (22%), renters not receiving assistance (11%), adults with less than a high school education (16%), LGBTQ (17%), and less than $25,000 income (16%) compared with their counterparts. Of note, the a significantly lower proportion of Asian adults (5%) and immigrants living in the US for less than 10 years (4%) or 10 years or more (9%) reported an asthma diagnosis.

Figure 65. Percent Adults Reporting Having Asthma, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

The neighborhoods of Roxbury (15%) and Dorchester (02122, 02124; 15%) had a significantly higher proportion of residents with diagnosed asthma compared to the rest of Boston (Figure 66). Nearly 16% of Mattapan's adult residents indicated that they have asthma; however, this estimate is not significantly different than the rest of Boston potentially due to insufficient statistical power.

Figure 66. Percent Adults Reporting Having Asthma, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
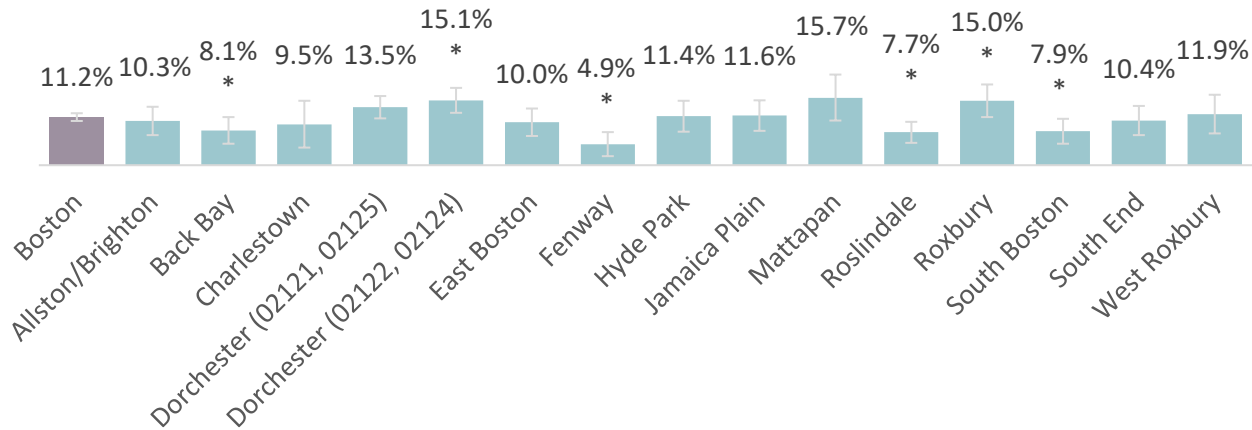
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

One in four Boston Public High School students (26%) reported an asthma diagnosis, as seen in Figure 67. A significantly greater percent of Asian (28%) and Latino (29%) high school students reported being diagnosed with asthma compared to White students (19%). The prevalence of diagnosed asthma among female students (23%) was significantly lower than that of male students (29%). When looking at patterns by race/ethnicity and sex, the asthma prevalence among Latina female students (29%) was significantly higher than that of White female students (15%).

Figure 67. Percent Boston Public High School Youth Reporting Having Asthma, by Boston and Selected Indicators, 2013 and 2017 Combined
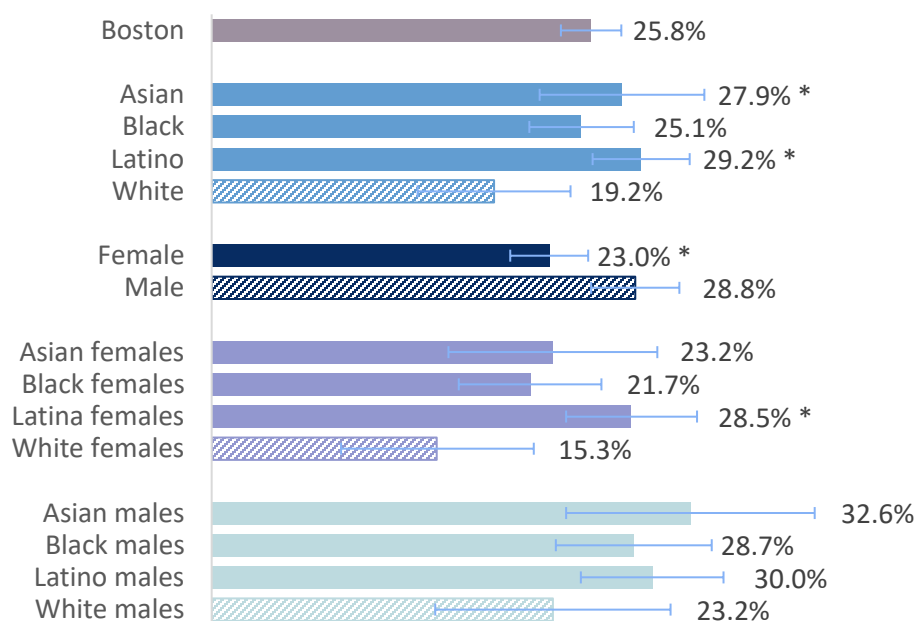
Boston — 25.8%

Asian — 27.9% *
Black — 25.1%
Latino — 29.2% *
White — 19.2%

Female — 23.0% *
Male — 28.8%

Asian females — 23.2%
Black females — 21.7%
Latina females — 28.5% *
White females — 15.3%

Asian males — 32.6%
Black males — 28.7%
Latino males — 30.0%
White males — 23.2%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013 and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

In 2016-2017, the asthma-related emergency department visit rate for Black (213.6 visits per 10,000 residents) and Latino (122.7 visits per 10,000 residents) residents was over five and three times higher than that for White residents (36.9 visits per 10,000 residents), respectively (Figure 68). The asthma ED rate for Asian residents (24.0 visits per 10,000 residents) was significantly lower than that for White residents during this same period.

Figure 68. Asthma Emergency Department Visit Rate, by Boston and Race/Ethnicity, Age-Adjusted Rate per 10,000 Residents, 2016–2017 Combined

Boston — 101.0
Asian — 24.0 *
Black — 213.6 *
Latino — 122.7 *
White — 36.9

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

The asthma emergency department (ED) visit rate was highest in Roxbury, followed by Mattapan, and Dorchester (02122, 02124), Dorchester (02121, 02125), the South End, and Hyde Park – each of which had rates that were significantly higher than the asthma ED rate compared to the rest of Boston (Figure 69). The asthma ED visit rate was significantly lower in the neighborhoods of West Roxbury, East Boston, Back Bay, South Boston, Allston/Brighton, Fenway, Jamaica Plain, Roslindale, and Charlestown.

Figure 69. Asthma Emergency Department Visit Rate, by Boston and Neighborhood, Age–Adjusted Rate per 10,000 Residents, 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 70 shows asthma ED visit rates for children under 18 across the Boston neighborhoods. Dorchester (02121, 02125) and (02122, 02124), Mattapan, and Roxbury had significantly higher rates of asthma emergency department visits for children under 18 compared to the rest of Boston.

Figure 70. Asthma Emergency Department Visit Rate (Children Under 18 Years), by Boston and Neighborhood, Age–Specific Rate per 10,000 Residents, 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Among children, across each age category the ED rate for Black children and Latino children was significantly higher than that for White children, with the highest ED rates seen for Black children (Figure 71).

Figure 71. Asthma Emergency Department Visit Rate, by Boston and Race/Ethnicity by Age, Age–Specific Rate per 10,000 Residents, 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Asian in the 0-2 years, 6-12 years, and 13-17 years are ≤ 20 and rates should be interpreted with caution; Bars with pattern indicate reference group within each age category; Asterisk (*) denotes where estimate was significantly different compared to reference group within each specific age category (p <0.05)

As shown in APPENDIX I, in 2017, there were 14.8 asthma hospitalizations per 10,000 residents, significantly lower than the hospitalization rate in 2016 (16.8 hospitalizations per 10,000 residents). Examining the age-adjusted asthma hospitalization rates by race/ethnicity,

Figure 72 shows that the asthma hospitalization rate for Black residents (28.7 hospitalizations per 10,000 residents) was five times higher than that for White residents (5.6 hospitalizations per 10,000 residents) and 3.5 times higher for Latino residents (19.7 hospitalizations per 10,000 residents) relative to White residents in 2016-2017.

Figure 72. Asthma Hospitalization Rate, by Boston and by Race/Ethnicity, Age–Adjusted Rate per 10,000 Residents, 2016–2017 Combined
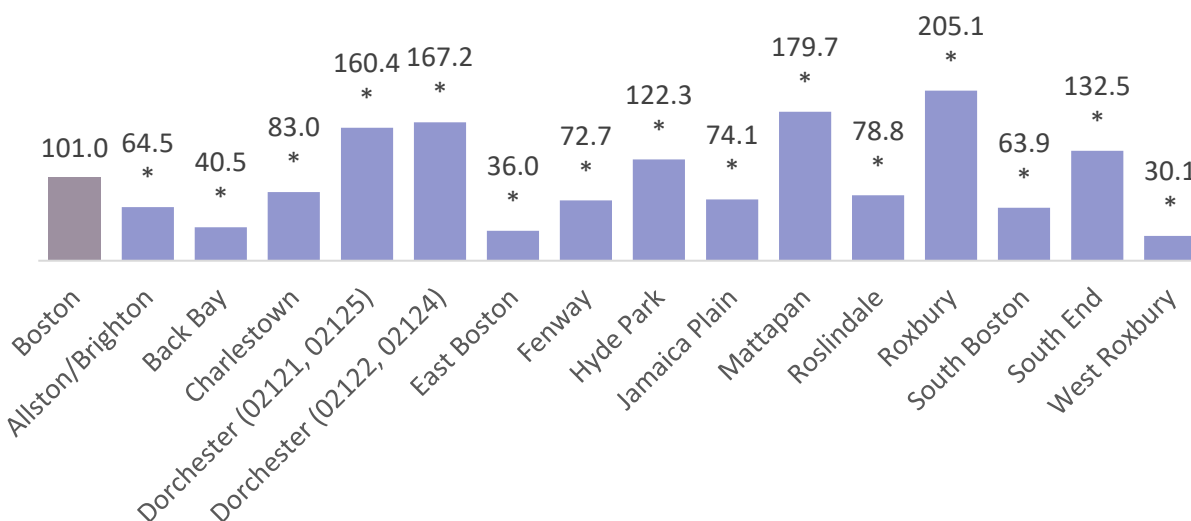

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

While there were nearly 15.8 asthma-related hospitalizations per 10,000 residents across Boston, there were vast differences by neighborhood. Roxbury, Mattapan, Dorchester (02121, 02125), and Dorchester (02122, 02124) had rates higher compared to the rest of Boston (Figure 73).

Figure 73. Asthma Hospitalization Rate, by Boston and by Neighborhood, Age–Adjusted Rate per 10,000 Residents, 2016–2017 Combined
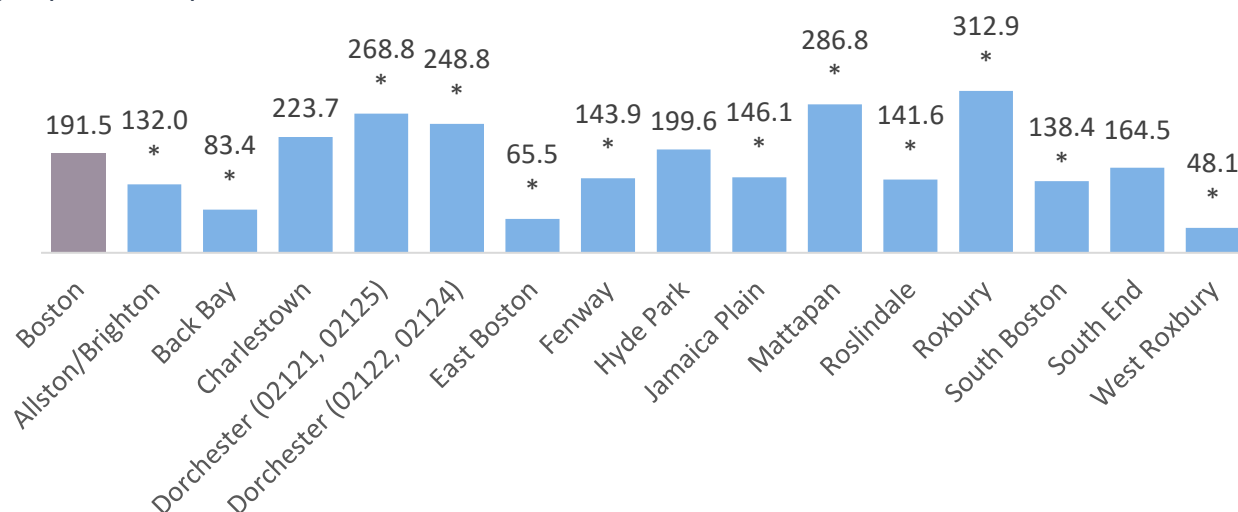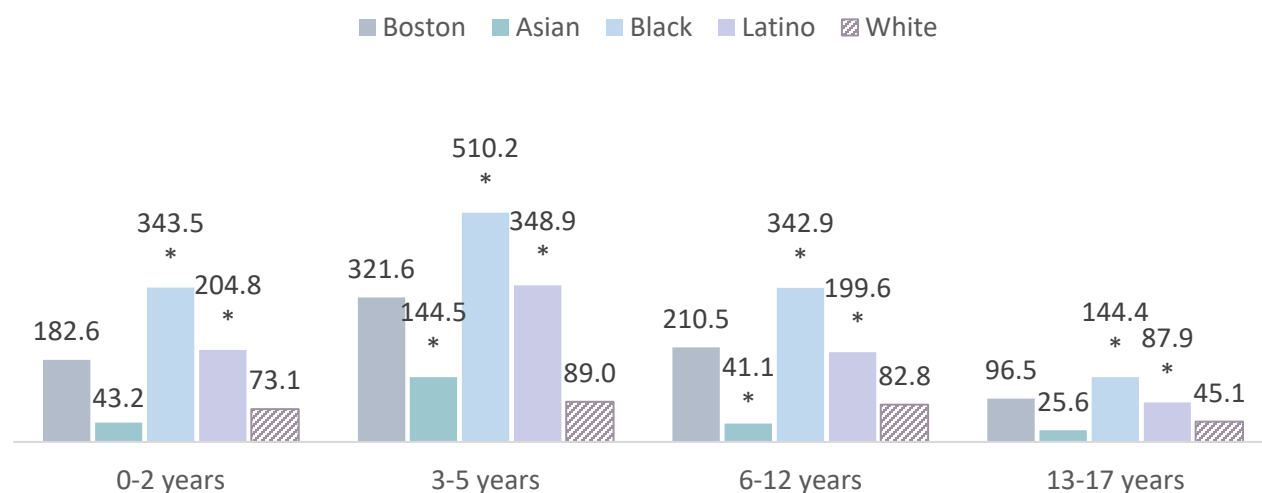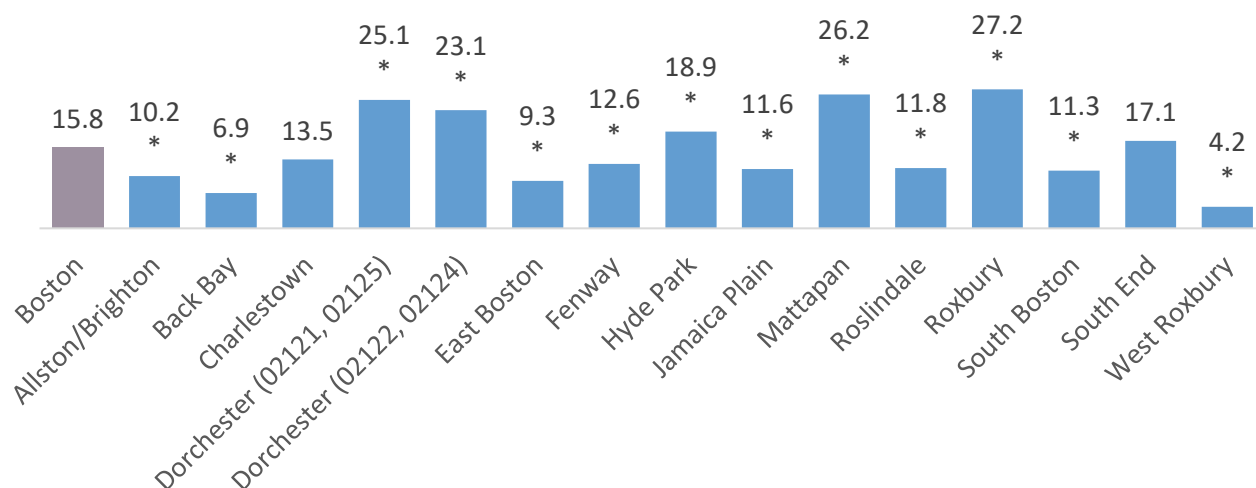

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
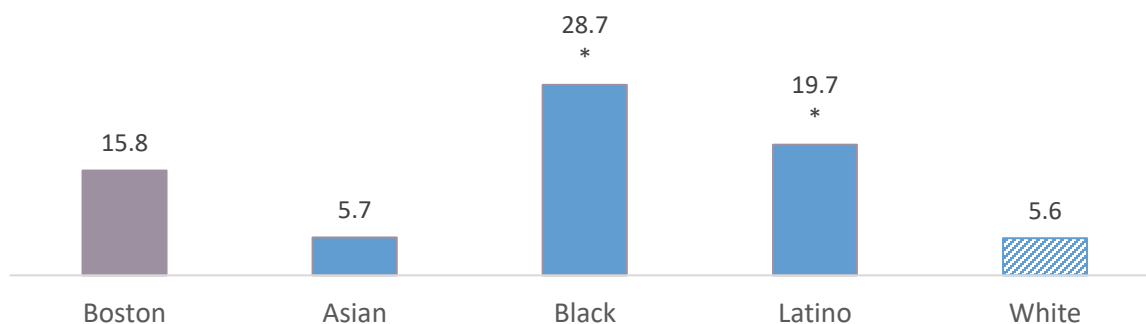DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Cancer

While cancer is the leading cause of death in the city of Boston, it was not frequently mentioned as a pressing concern among focus group and interview participants. The exception to this was in groups in East Boston and Chinatown. In Chinatown, focus group participants perceived that the high rates of tobacco use impacted cancer rates in their neighborhood. East Boston participants spoke of cancer in the context of environmental concerns; specifically, residents worried about an electrical plant that was being built by the harbor. A few key informants described the need for more supports for caretakers. One shared, *"Family members of a cancer patient likely find it hard to think critically about other matters when they are focused on their loved one struggling with such a difficult condition."*

Cancer Screening

When discussing cancer screenings, a few interviewees and focus group participants noted that some of the biggest barriers to cancer screenings included lack of awareness about the importance of screening, discomfort and fear of screenings particularly those considered more invasive such as colonoscopies, inability to take time off work, confusion about changing screening guidelines, and for a few, insurance and transportation issues.

Nearly nine in ten women 50 to 74 years of age across Boston (88%) reported receiving a mammogram in the past two years (Figure 74). Of note, compared to their counterparts, Latina women (93%) and immigrants living in the US for fewer than 10 years (97%) were significantly more likely to report receiving a mammogram in the past two years. There was no significant difference by Boston neighborhoods in the percent of women who reported receiving a mammogram in the past two years (data in APPENDIX I).

Figure 74. Percent Female Adults (Aged 50–74 Years) Reporting Having Had a Mammogram in Past Two Years, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Category	Percent
Boston	88.3%
Black	89.2%
Latina	93.0% *
Asian	77.3%
White	87.3%
BHA resident	89.8%
Renter, rental assistance	89.2%
Renter, no assistance	87.5%
Other housing arrangement	82.7%
Home owner	88.9%
Less than HS graduate	88.4%
HS graduate	86.6%
Some college or more	88.8%
10 years or less in U.S.	96.7% *
More than 10 years in U.S.	89.1%
Born in U.S.	87.5%
LGBTQ	81.5%
Heterosexual/non-transgender	88.7%
Less than $25,000	88.5%
$25,000-$49,999	89.6%
$50,000 or more	89.1%
Employed	88.4%
Out of Work	89.3%
Other	88.2%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

The following graphs provide data on women who reported receiving a pap smear, an important screening for cervical cancer (Figure 75 and Figure 76). In 2013-2017, 84% of Boston women (21-64 years of age) reported receiving a pap smear test in the past two years. The prevalence of reported pap tests in Fenway (65%) was significantly lower than the rest of Boston in 2013-2017. By comparison, the prevalence of pap tests among residents of Charlestown (91%), Jamaica Plain (89%), and Roslindale (89%) was significantly higher than the rest of Boston.

Figure 75. Percent Female Adults (Aged 21–64 Years) Reporting Having Had a Pap Test in Past Two Years, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Category	Percent
Boston	83.7%
Black	83.4% *
Latina	83.3% *
Asian	57.7% *
White	88.5%
BHA resident	73.6% *
Renter, rental assistance	84.2% *
Renter, no assistance	83.3% *
Other housing arrangement	75.9% *
Home owner	90.0%
Les than HS graduate	82.8%
HS graduate	76.2% *
Some college or more	85.5%
10 years or less in U.S.	63.5% *
More than 10 years in U.S.	82.7% *
Born in U.S.	88.1%
LGBTQ	83.6%
Heterosexual/non-transgender	83.7%
Less than $25,000	77.3%*
$25,000-$49,999	84.7%*
$50,000 or more	89.8%
Employed	87.0%
Out of Work	84.2%
Other	75.1%*

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Figure 76. Percent Female Adults (Aged 21–64 Years) Reporting Having Had a Pap Test in Past Two Years, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
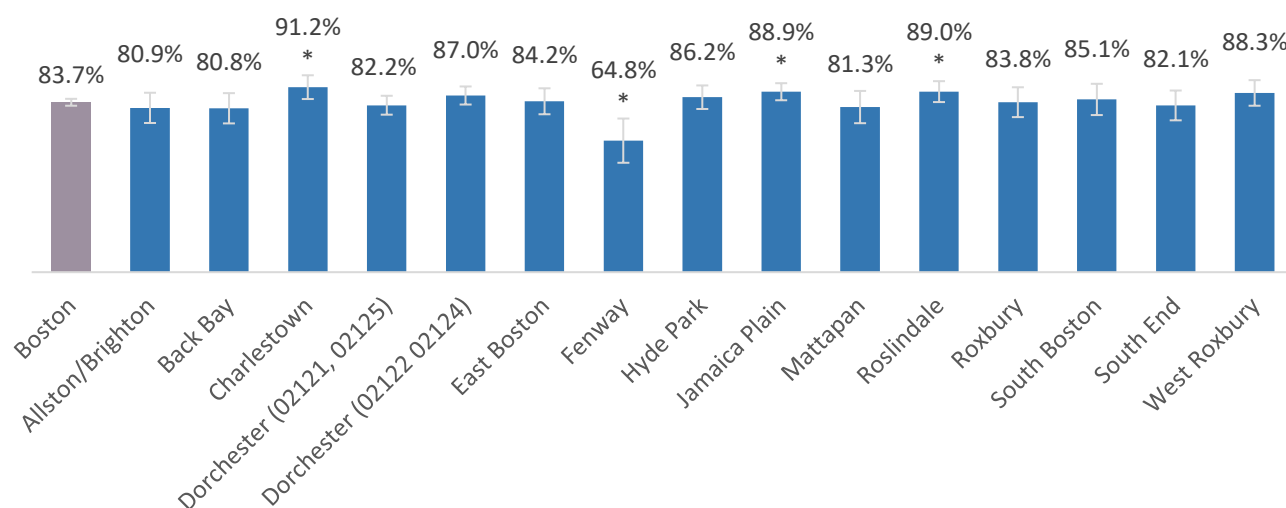
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

In 2013-2017, only two-thirds (65%) of Boston adults 50 to 75 years of age reported ever receiving a colonoscopy or sigmoidoscopy (Figure 77). Compared to their counterparts, a significantly lower proportion of Asian adults (50%), immigrants living in the US for less than 10 years (37%), residents with incomes <$25,000 (63%), and adults who were out of work (55%) reported receiving colon cancer screening.

Figure 77. Percent Adults (Aged 50–75 Years) Reporting Having Ever Had a Colonoscopy or Sigmoidoscopy, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

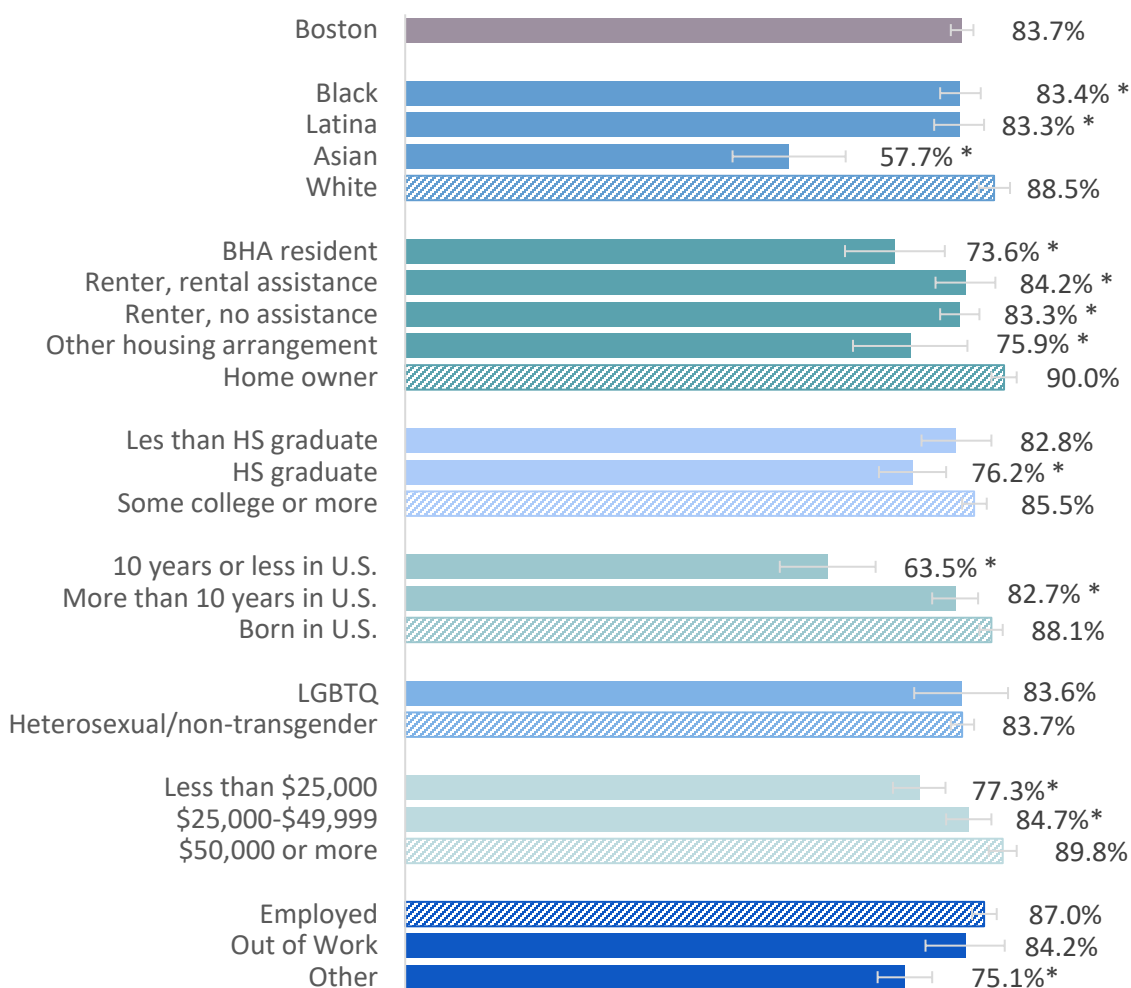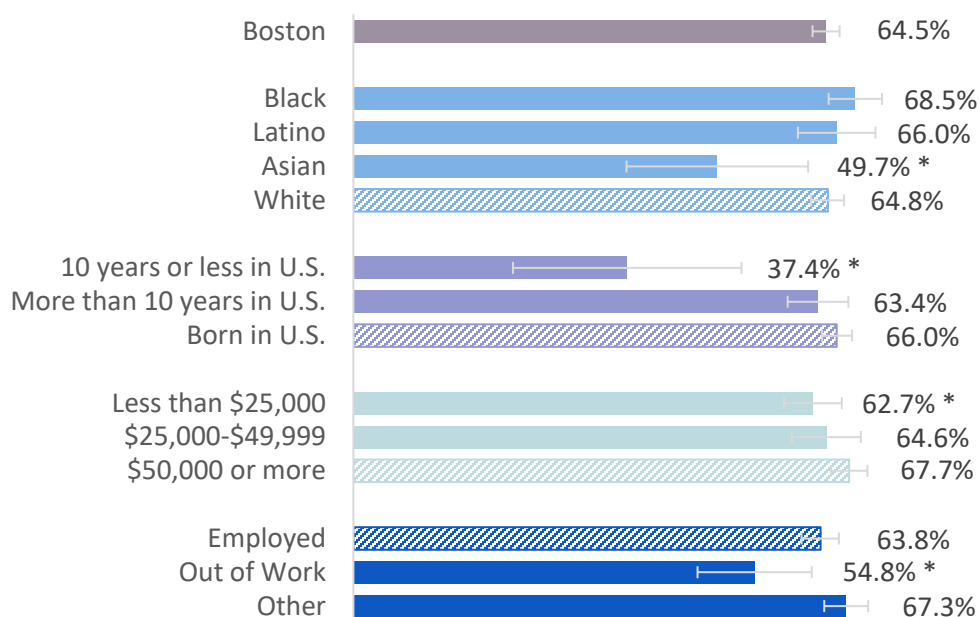| Category	Percent
Boston	64.5%
Black	68.5%
Latino	66.0%
Asian	49.7% *
White	64.8%
10 years or less in U.S.	37.4% *
More than 10 years in U.S.	63.4%
Born in U.S.	66.0%
Less than $25,000	62.7% *
$25,000-$49,999	64.6%
$50,000 or more	67.7%
Employed	63.8%
Out of Work	54.8% *
Other	67.3%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Data on colon cancer screening by neighborhood can be found in APPENDIX I. A data point to note is that the prevalence of colon cancer screening among adults 50 to 75 years of age was lowest in East Boston (56%), a difference that was significantly lower than the rest of Boston in 2013-2017.

Cancer Incidence

According to the Massachusetts Department of Public Health, in 2015, cancer incidence rates for Asian (390.5 per 100,000 population) and Latino (349.4 per 100,000 population) residents in Boston were significantly lower than for White residents (546.7 per 100,000 population) (Figure 78). Between 2001 to 2015, cancer incidence rates for Boston significantly decreased over time (see APPENDIX I for data). A significant decrease in incidence rates was also seen among White residents in Boston between 2001 and 2015.

Figure 78. Overall Invasive Cancer Incidence Rate, by Boston and Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents, 2015

DATA SOURCE: Massachusetts Department of Public Health, Cancer Registry, 2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 79 shows incidence rates by select types of cancer and by race/ethnicity. The incidence rate for female breast cancer in Boston was 132.7 cases per 100,000 population, followed by prostate cancer (126.7 per 100,000), and lung and colorectal cancers (64.7 and 40.9 per 100,000, respectively). Colorectal and prostate cancer incidence rates were statistically higher for Black residents compared to White residents.

Figure 79. Cancer Incidence Rate, by Boston, Race/Ethnicity, and Type, Age–Adjusted Rate per 100,000 Residents, 2013–2015

	Colorectal	Lung	Female Breast	Prostate
Boston	40.9	64.7	132.7	126.7
Asian	32.4	65.7	80.3*	74.5*
Black	51.6*	62.8*	140.1*	190.0*
Latino	28.9*	30.9*	90.0*	111.8
White	41.3	77.2	160.1	110.8

DATA SOURCE: Massachusetts Department of Public Health, Cancer Registry, 2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Cancer Mortality

Quantitative data around cancer mortality from the Massachusetts Department of Public Health show that the overall cancer mortality rate in Boston was 160.0 per 100,000 residents (Figure 80). Rates of cancer mortality differed, however, across different subgroups. Across racial/ethnic groups, Black residents experienced significantly higher rates of cancer mortality (181.9 deaths per 100,000 residents) compared to White residents. Females (138.5 per 100,000) in Boston had significantly lower cancer mortality rates than males (192.5 per 100,000). Figure 81 shows that between 2011 and 2017, cancer mortality rate had significantly decreased over time.

Figure 80. Overall Cancer Mortality Rate, by Boston and Selected Indicators, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

Indicator	Rate
Boston	160.0
Asian	123.2*
Black	181.9
Latino	109.0*
White	171.9
Female	138.5*
Male	192.5
Under 45 years	7.5*
45-64 years	168.6*
65+ years	962.5

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
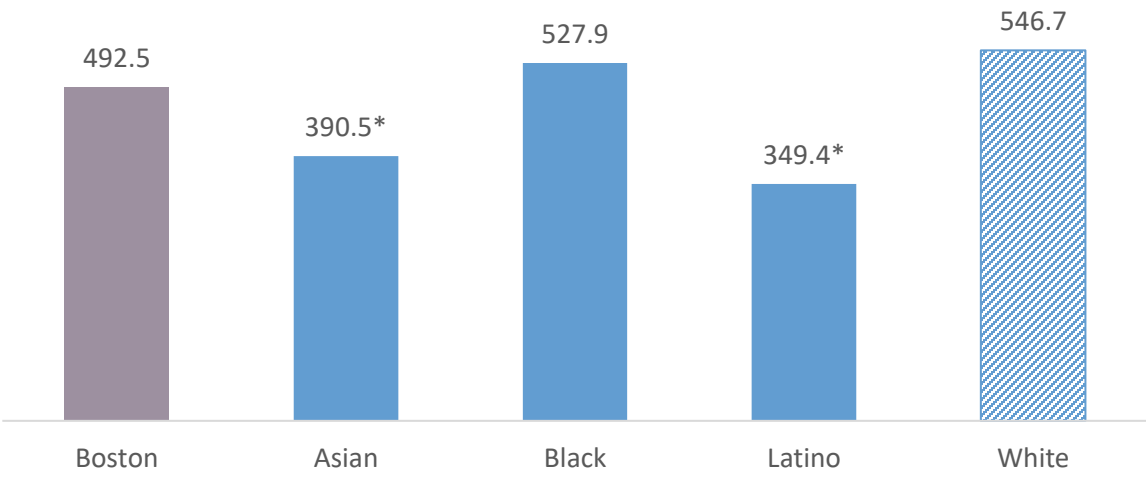DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Figure 81. Overall Cancer Mortality Rate, by Boston and Over Time, Age–Adjusted Rate per 100,000 Residents, 2011–2017

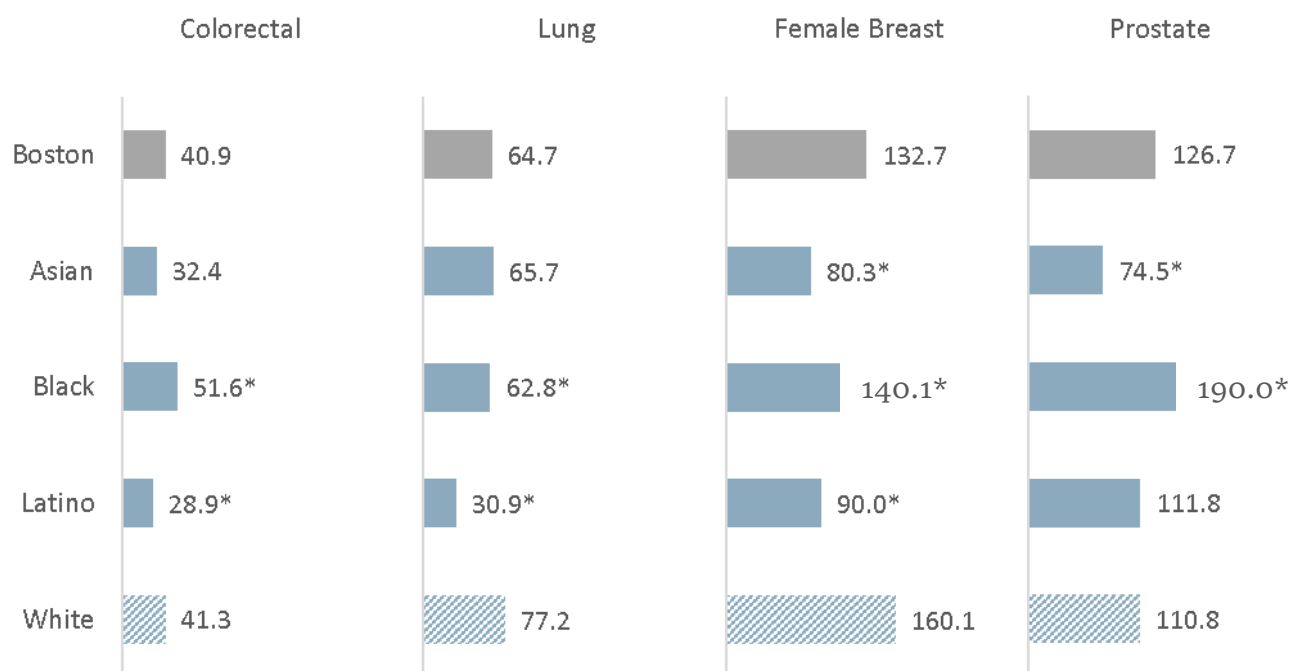| Year	Rate
2011	171.7
2012	187.3
2013	175.9
2014	153.3
2015	163.4
2016	163.6
2017	153.2

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Change over time was statistically significant (decrease over time)

Figure 82 shows mortality rates for select types of cancer by race/ethnicity. Among the select cancer types, the highest mortality rate for Boston was for lung cancer (36.5 deaths per 100,000 residents). Black residents experienced significantly higher mortality rates for prostate cancer (49.8 deaths per 100,000 residents) when compared to White residents (19.1 deaths per 100,000 residents).

Figure 82. Cancer Mortality Rate, by Boston, Race/Ethnicity, and Type, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

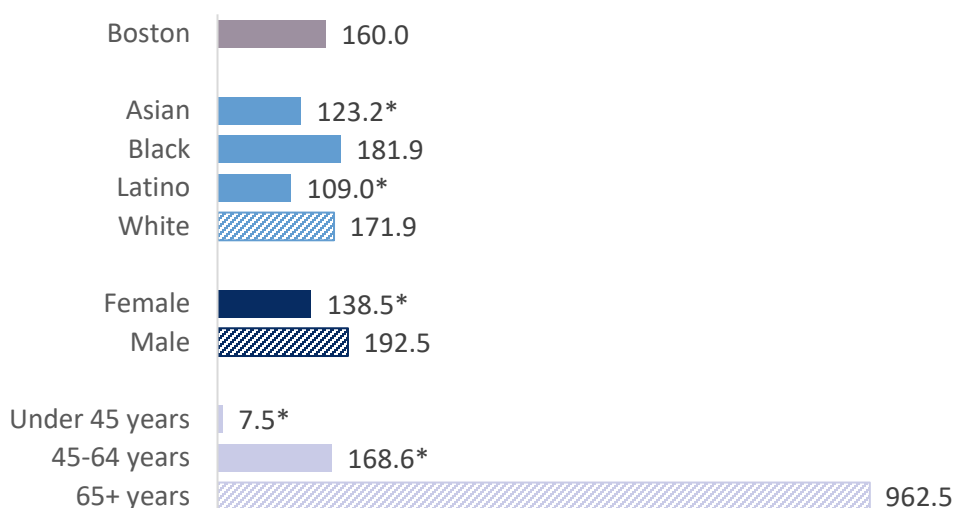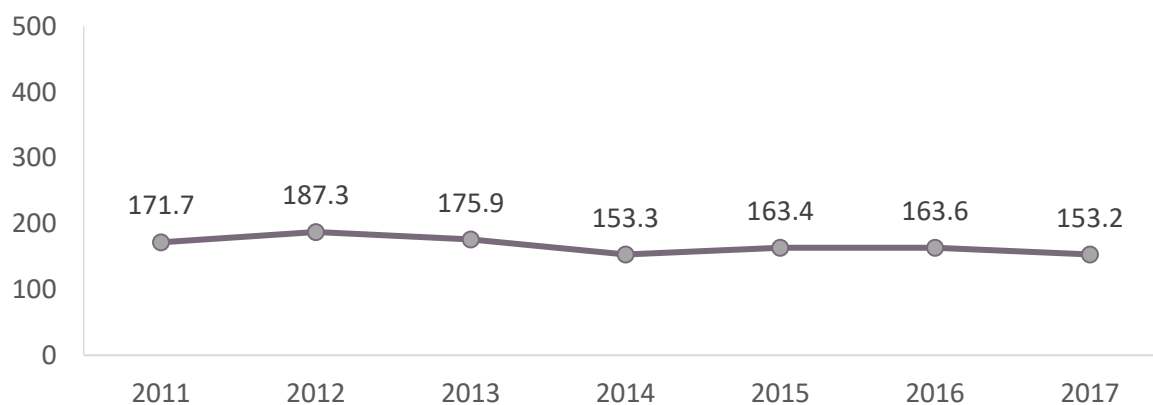DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: NA denotes where data are suppressed due to insufficient sample size; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Heart Disease and Stroke

Heart disease and stroke were only mentioned by a few key informants, and neither topics emerged as a priority theme in focus groups. The key informants that did mention it perceived that there was a trend of early onset heart disease, with one sharing, "*We are seeing a lot of cases of heart disease and COPD in younger populations.*" Another key informant who worked with seniors identified congestive heart failure as a common issue among the aging population.

Although hypertension was not an issue often discussed by focus group participants, it is the biggest risk factor for heart disease and stroke.[55] In 2013-2017, one-quarter (25%) of Boston adults reported being diagnosed with hypertension (Figure 83). A significantly higher proportion of adults who identified as Black (38%), Latino (26%), aged 35-49 (12%), aged 50-65 (40%), 65 and older (65%), residents living in Boston Housing Authority units (39%), renters on rental assistance (37%), and immigrants living in the US for more than ten years (35%) reported being diagnosed with hypertension or high blood pressure, compared to their counterparts. Additionally, there was a consistent socioeconomic gradient in the prevalence of hypertension: a significantly higher percent of adults with less than a high school education (42%), a high school education (28%), incomes <$25,000 (34%); incomes $25,000-$49,999 (27%), out of work (27%), and other employment statuses (38%) reported a hypertension diagnosis compared with their counterparts of higher socioeconomic status, A significantly lower percent of adults who identified as Asian (16%), renters without assistance (19%),

residents with other housing arrangements (19%), immigrants living in the US for less than ten years (10%), and LGBTQ (19%) reported a hypertension diagnosis when compared to the comparison groups.

Figure 83. Percent Adults Reporting Hypertension, by Boston and Selected Indicators, 2013, 2015, 2017 Combined
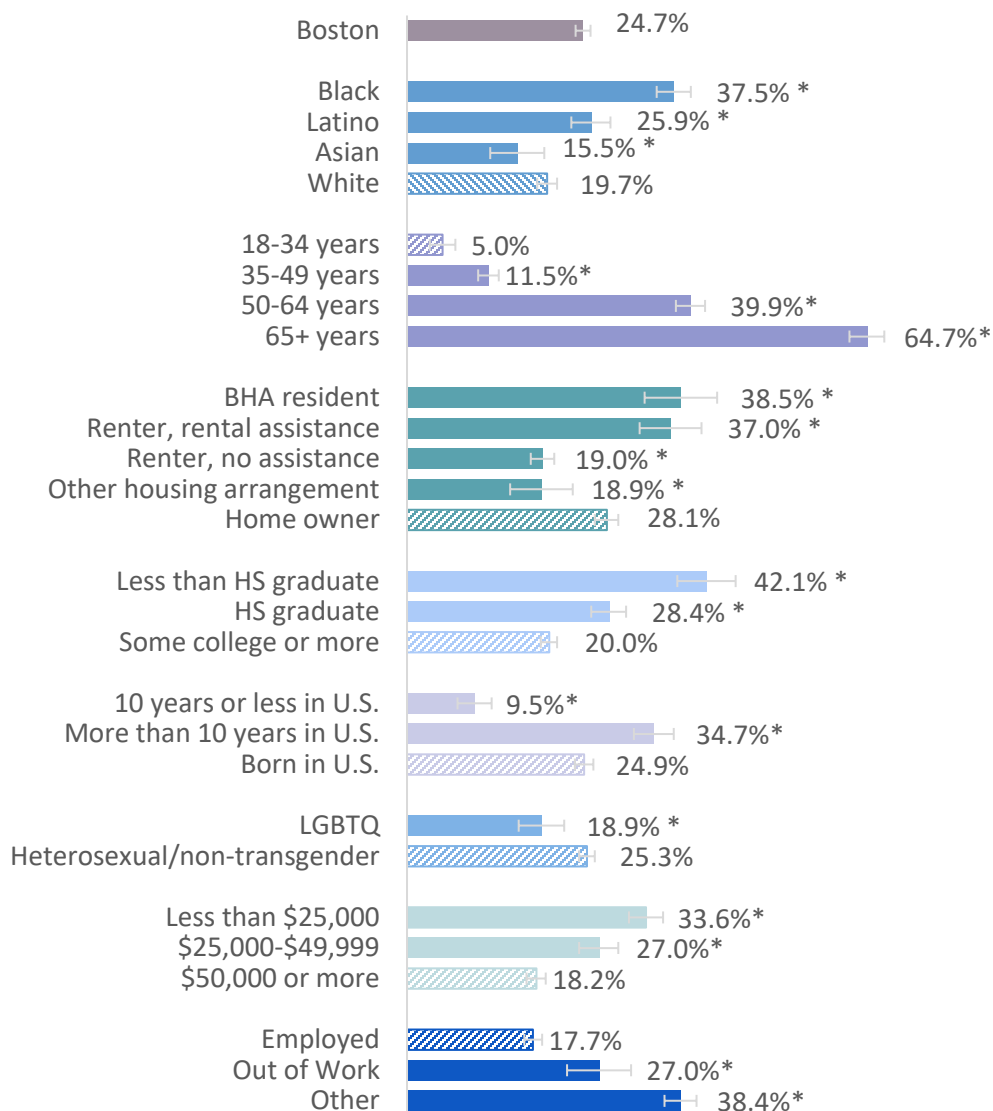
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

As shown in Figure 84, there was substantial variation in the prevalence of diagnosed hypertension across Boston neighborhoods. A significantly higher proportion of residents in Mattapan (38%), Roxbury (30%), Dorchester (02121, 02125; 30%); and Dorchester (02122, 02124; 30%) reported a hypertension diagnosis compared to the rest of Boston. By comparison, the neighborhoods of Fenway (13%), Allston/Brighton (17%), Charlestown (19%), Jamaica Plain (20%), and Back Bay (21%) had a significantly lower percent of residents reporting a hypertension diagnosis than the rest of Boston.

Figure 84. Percent Adults Reporting Hypertension, by Boston and Neighborhood, 2013, 2015, 2017 Combined
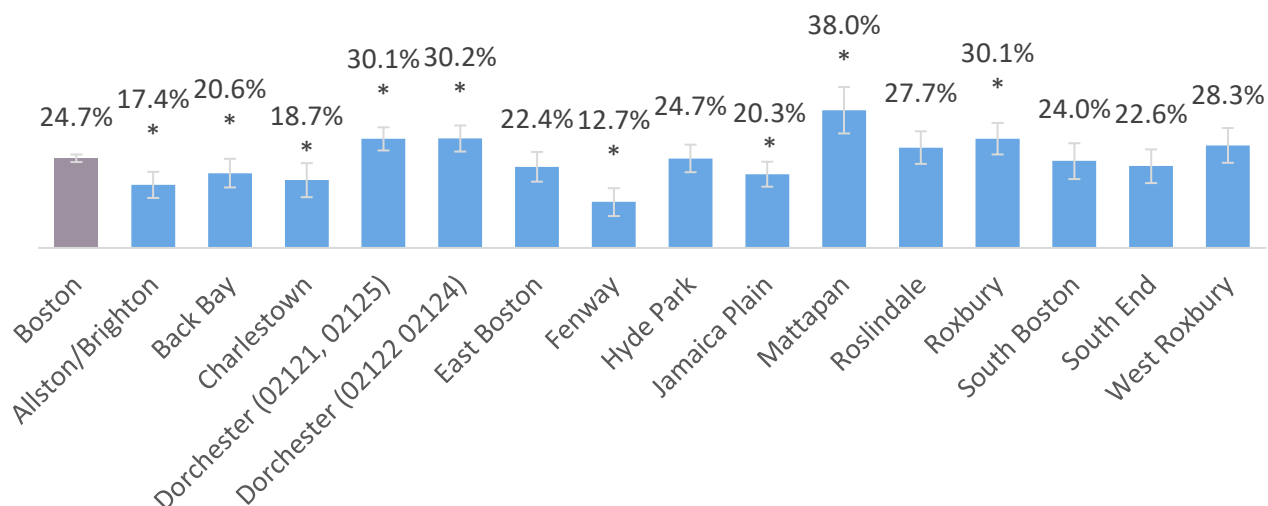
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

In 2017, 3% of adults across Boston reported ever being diagnosed with a heart attack. As shown in the APPENDIX I, there was not a statistically significant difference in these patterns by sex, but there was a significantly higher proportion of Black (4%) and Latino (5%) adults reported a heart attack compared to White adults (2%).

In 2016-2017, the heart disease hospitalization rate for Black residents (135.3 hospitalizations per 10,000 residents) was 48% greater than the rate for White residents (90.5 hospitalizations per 10,000 residents), a difference that was statistically significant (Figure 85). The heart disease hospitalization rate for Asian residents (39.4 hospitalizations per 10,000 residents) was significantly lower than that for White residents.

Figure 85. Heart Disease Hospitalization Rate, by Boston and Race/Ethnicity, Age-Adjusted Rate per 10,000 Residents, 2016-2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p<0.05)

As shown in Figure 86, hospitalization rates for heart disease differed by neighborhood. Compared to the rest of Boston (Boston overall minus the population of that specific neighborhood), the age-adjusted hospitalization rate for heart disease was significantly higher for Roxbury, East Boston, Hyde Park, Dorchester (02122, 02124), Dorchester (02121, 02125), Mattapan, and the South End. The neighborhoods of Back Bay, Fenway, West Roxbury, Allston/Brighton, and Jamaica Plain each had a significantly lower heart disease hospitalization rate than the rest of Boston.

Figure 86. Heart Disease Hospitalization Rate, by Boston and Neighborhood, Age-Adjusted Rate per 10,000 Residents, 2016–2017 Combined
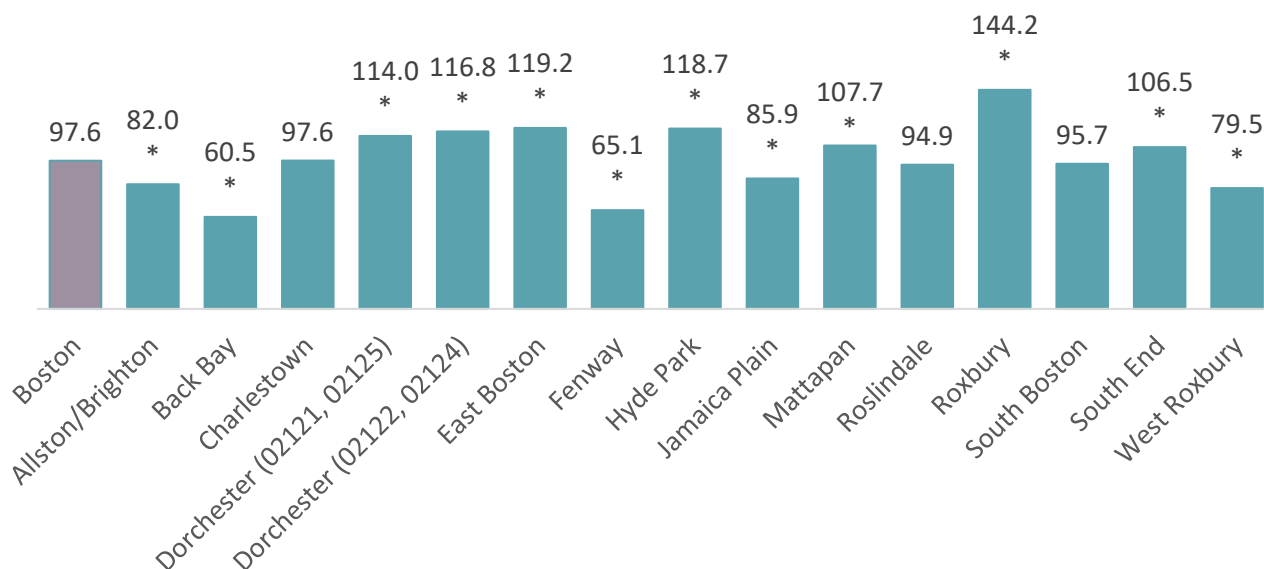
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where estimate was significantly different compared to the rest of Boston

As shown in APPENDIX I, from young adulthood to 50 to 64 years of age, the heart disease mortality rate was highest for Black adults. More specifically, among adults 18 to 34 years of age and 35 to 49 years of age, the heart disease mortality rate for Black adults was statistically higher than the mortality rate for White adults. For adults 65 years of age and older, the heart disease mortality rate for Asian, Black, and Latino adults was significantly lower than that for White residents.

As with other chronic conditions, in 2016-2017 the heart disease mortality rate was highest in East Boston (174 deaths per 10,000 residents), where it was 36% higher than the rest of Boston (Figure 87). The heart disease mortality rate was also significantly higher in East Boston, Hyde Park, Roxbury, and South Boston than the rest of Boston. The heart disease mortality rate was significantly lower in the neighborhoods of Back Bay, Fenway, and the South End.

Figure 87. Heart Disease Mortality Rate in Boston, by Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2016–2017 Combined

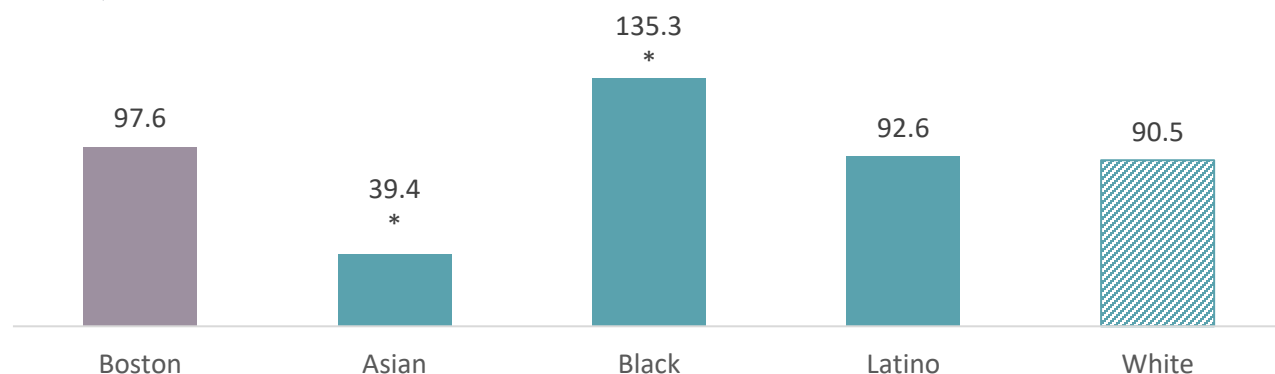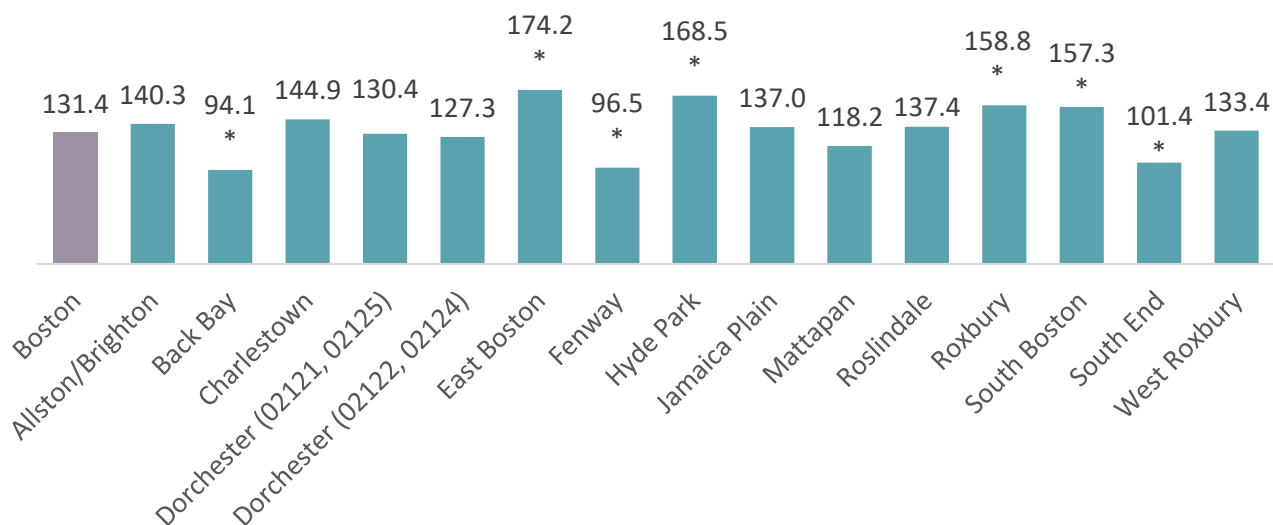DATA SOURCE: Boston Public Health Commission, Boston resident deaths, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where estimate was significantly different compared to the rest of Boston

As shown in Figure 88, in 2017 3% of adults across Boston reported being diagnosed with a stroke in the past year. The prevalence of stroke among Black adults (5%) was more than twice the prevalence among White adults (2%), a difference that was statistically significant. A significantly higher proportion of adults with incomes <$25,000 (6%) or $25,000-$49,999 (2%), residents of Boston Housing Authority units (6%), renters with rental assistance (7%), and residents with less than a high school education (5%) reported a diagnosis of stroke relative to residents with higher socioeconomic status. The prevalence of a stroke diagnosis was significantly lower for LGBTQ adults (1%) relative to heterosexual and non-transgender adults (3%).

Figure 88. Percent Adults Reporting Having Ever Had a Stroke, by Boston and Selected Indicators, 2017

Category	Value
Boston	2.8%
Asian	NA
Black	4.7% *
Latino	2.5%
White	2.1%
BHA resident	6.0%*
Renter, rental assistance	7.2%*
Renter, no assistance	1.9%
Other housing arrangement	NA
Home Owner	2.4%
Less than HS graduate	5.4%*
HS graduate	4.3%*
Some college or more	1.8%
LGBTQ	1.1%*
Heterosexual/non-transgender	2.9%
Less than $25,000	6.1% *
$25,000-$49,999	2.2% *
$50,000 or more	1.2%
Out of Work	NA
Other	5.9%*
Employed	1.3%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: NA denotes where data are not presented due to insufficient sample size; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

In 2016-2017, for Boston overall the stroke-related mortality rate was 29.2 deaths per 100,000 residents (Figure 89). Across racial and ethnic groups, for Black (41.2 deaths per 10,000 residents) and Asian (30.6 deaths per 10,000 residents), rates were significantly higher than that for White residents (22.8 deaths per 10,000 residents). Neighborhood level data mortality data for stroke can be found in APPENDIX I.

Figure 89. Stroke Mortality Rate, by Boston and Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents, 2016–2017 Combined

Boston	Asian	Black	Latino	White
29.2	30.6 *	41.2 *	25.8	22.8

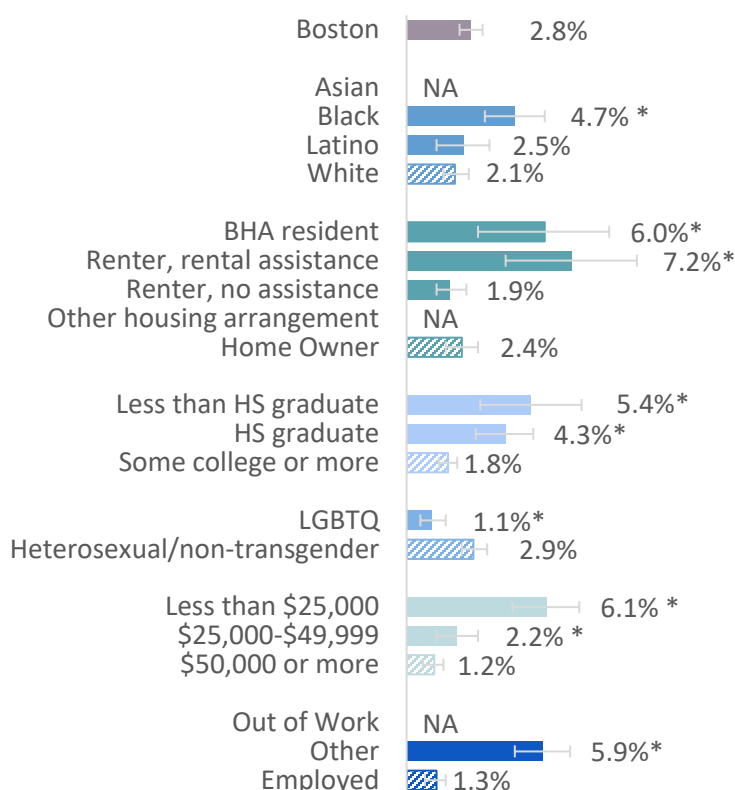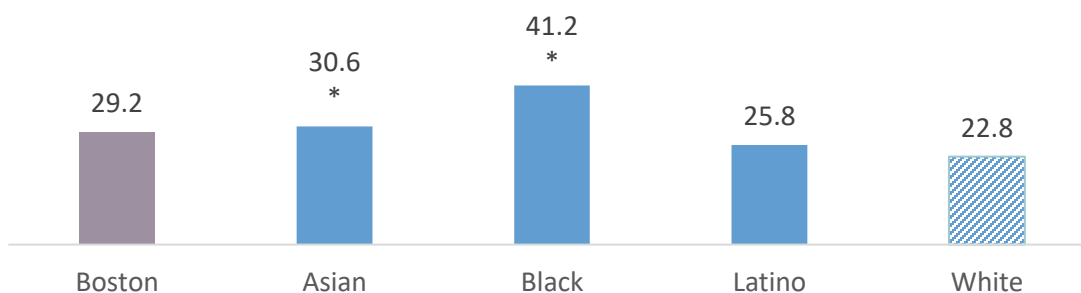DATA SOURCE: Boston Public Health Commission, Boston resident deaths, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Mental Health

Why is This Important?

Mental and physical health are intricately connected, and mental illness is among one of the leading causes of disability in the United States. Suicide, for example, is the 10th leading cause of death in the United States.[56] Mental health disorders can affect individuals' mental health treatment, maintenance of physical health, and engagement in health-promoting behaviors.[57] People with depression, for example, have an increased risk of cardiovascular disease, diabetes, stroke, Alzheimer's disease, and osteoporosis.[58] Social, environmental, and genetic factors across the lifespan, as well as physical health, such as chronic illnesses, are risk factors for mental disorders such as depression and anxiety.[59,60] Mental health concerns have substantial economic costs as well: total spending from all public and private sources for mental health and substance use treatment in 2009 was $171.7 billion and is expected to total $280.5 billion in 2020.[61]

> "We want help, it's not in our community to get help because we were raised… to not talk about what happens in our house; but when we ask for help, you get somebody who clearly does not understand what you're going through." — Focus group participant

Key Findings in This Section

Mental health issues were described as a priority concern across almost all focus group and interviews, and often discussed in connection with trauma and poverty. Stress, anxiety, and depression were the most frequently cited challenges among Boston residents, especially those who identify as LGBTQ, low-income, seniors, children, immigrants, and communities of color. Surveillance and survey data indicate that anxiety and depression are somewhat common across Boston residents, with one in five adult residents reporting that they felt persistent anxiety and one in eight reporting persistent sadness. Furthermore, the proportion of residents reporting persistent anxiety has increased over time; a higher proportion of females, Latinos, lower income individuals, younger, LGBTQ, and unemployed residents reported persistent anxiety than other groups.

The age-adjusted suicide rate for Boston is 6.7 deaths per 100,000 residents, with the highest rates occurring among White residents, men, and individuals ages 45-64. Concern for mental health issues among children and youth were a prominent theme in focus groups and interviews and this was validated through quantitative data: about one-third of Boston public high school students reported feeling persistent sadness and this has grown substantially over the past few years. The rate of students reporting persistent sadness is even higher among those who identify as Latino, Black, female, and LGBTQ. Nearly one in eight Boston public high school students (12%) has reported seriously considering suicide and 7.6% reported having attempted suicide, with rates for females, Latinos, and those who identify as LGBTQ as higher than for other groups. While statistics indicate that the proportion of people receiving treatment for depression has grown, barriers such as stigma, cultural and linguistic differences, and lack of providers constrain access to services for many residents.

Depression and Anxiety

Mental health issues were described as a priority concern across almost all focus group and interviews, and often discussed in connection with trauma. Stress, anxiety, and depression were the most frequently cited challenges among Boston residents, especially those who belong to underrepresented groups; specific groups that were mentioned include: LGBTQ, low-income residents, seniors, children, immigrants, and communities of color. In conversations, mental health issues were often discussed in relation to social determinant factors such as poverty, employment, and safety. One interviewee summarized, "*Many residents are significantly impacted by untreated mental health, addiction, and untreated chronic conditions. They are at significant disadvantages in terms of the social determinants of health; communities and families that have multigenerational issues around poverty, lack of education, histories of trauma and violence...*" Additional factors affecting mental health, according to key informants, included: unstable housing situations; parental incarceration, especially for Black and Latino men; and domestic violence.

Immigrants and communities of color were described as especially vulnerable to mental health issues due to limited English language skills, cultural norms, and stigma related to seeking mental health services. In focus groups in East Boston and Chinatown, for example, residents described the need to address issues such as migratory trauma or domestic violence but indicated strong cultural influences at play, with one sharing, "*We don't take care of ourselves emotionally; as Hispanics, it's hard to navigate all of these emotions and ask [for help].*" Another non-English speaking focus group participant expressed concerns about mental health issues related to unhealthy home situations in immigrant communities, sharing, "*Marriage and divorce are very difficult; there are a lot of people marrying because of necessity, even if it's not the healthiest situation.*" In Dorchester, focus group participants perceived that discussing mental health issues was often taboo in Black communities, with one sharing, "*In the Black community we are raised on, 'what goes on in this house stays in this house'; we aren't seeing no therapist. It's something a lot of us were raised with, but it's crippling us.*" Further, undocumented residents were described as especially susceptible to mental health struggles, with one interviewee in the field sharing, "*Immigrant status is a big stressor for many residents—undocumented residents have been so nervous in the last couple of years with the proposed changes to immigration rules. Folks are dropping out of programs and services because they're afraid.*"

Surveillance and survey data indicate that anxiety and depression are somewhat common across Boston residents. According to the Boston Behavioral Risk Factor Surveillance System (BBRFSS), nearly one in eight Boston residents (12.3%) indicated feeling persistent sadness in the past 30 days (feeling sad, blue, or depressed for more than 15 days within the past 30 days) (Figure 90). When examining responses by sub-groups, responses were significantly higher among Black residents, Latino residents, females, non-home owners, residents with less than some college education, those making less than $50,000 a year, LGBTQ residents, and those not employed compared to the referent in their sub-group (shaded bar). Data by neighborhood and over time are provided in APPENDIX I.

Figure 90. Percent Adults Reporting Persistent Sadness, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Category	Percent
Boston	12.3%
Asian	10.0%
Black	13.9% *
Latino	16.8% *
White	10.1%
Female	14.2% *
Male	10.3%
BHA resident	19.7%*
Renter, rental assistance	25.6% *
Renter, no assistance	13.2% *
Other housing arrangement	13.8% *
Home owner	6.0%
Less than HS graduate	21.5% *
HS graduate	14.8% *
Some college or more	9.7%
LGBTQ	17.2% *
Heterosexual/non-transgender	11.8%
Less than $25,000	21.4% *
$25,000-$49,999	10.8% *
$50,000 or more	6.0%
Employed	8.6%
Out of Work	25.2% *
Other	16.7%*

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Persistent sadness is defined as feeling sad, blue, or depressed for more than 15 days within the past 30 days; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

More than one in five Boston residents indicated that they have experienced persistent anxiety (feeling worried, tense, or anxious for more than 15 days within the past 30 days) (Figure 91). Responses were significantly lower among Asian residents compared to White residents, those who were 65+ years old compared to 18-34 years old, and foreign-born residents compared to U.S. born residents. However, females, non-homeowners, LGBTQ residents, those earning less than $25,000 a year, and those not employed were significantly more likely than the referent in their sub-group to report experiencing persistent anxiety. Data on persistent anxiety by neighborhood can be found in APPENDIX I.

Figure 91. Percent Adults Reporting Persistent Anxiety, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined
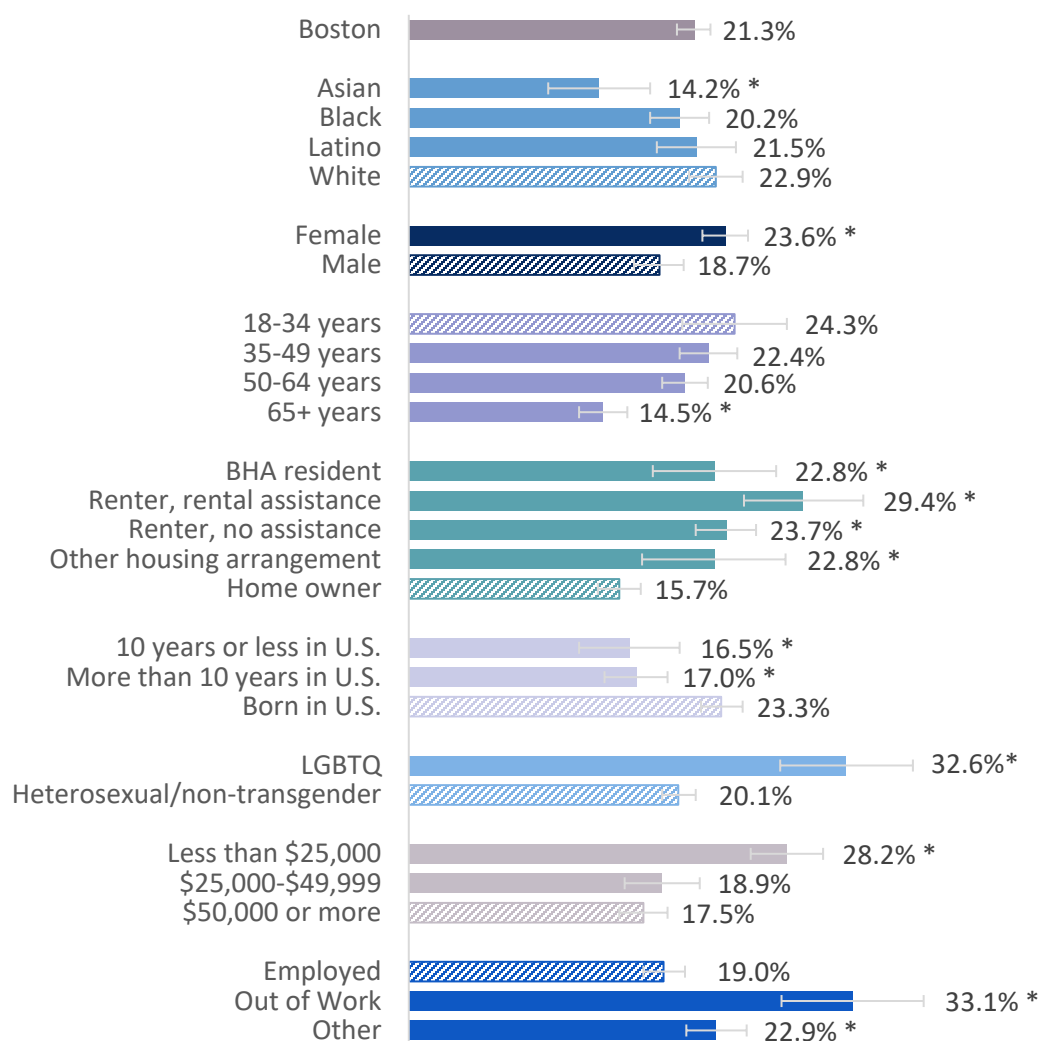
Category	Percent
Boston	21.3%
Asian	14.2% *
Black	20.2%
Latino	21.5%
White	22.9%
Female	23.6% *
Male	18.7%
18-34 years	24.3%
35-49 years	22.4%
50-64 years	20.6%
65+ years	14.5% *
BHA resident	22.8% *
Renter, rental assistance	29.4% *
Renter, no assistance	23.7% *
Other housing arrangement	22.8% *
Home owner	15.7%
10 years or less in U.S.	16.5% *
More than 10 years in U.S.	17.0% *
Born in U.S.	23.3%
LGBTQ	32.6% *
Heterosexual/non-transgender	20.1%
Less than $25,000	28.2% *
$25,000-$49,999	18.9%
$50,000 or more	17.5%
Employed	19.0%
Out of Work	33.1% *
Other	22.9% *

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Persistent Anxiety is defined as feeling worried, tense, or anxious for more than 15 days within the past 30 days; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Data from the BBRFSS indicate a significant increase in the trend over time of the percentage of adults who reported persistent anxiety in the past 30 days, from 16.3% in 2010 to 21.7% in 2017 (see APPENDIX I for data). Additional data on persistent sadness and anxiety by various population characteristics can be found in APPENDIX I.

Mental health concerns were not just specific to adults. Focus group and interview participants also expressed increasing concern about mental health issues experienced by children and teens. Key informants spoke of how poor social and economic factors exacerbate mental health issues for children; for example, poor children who are at risk of living under chronic stress or experiencing vicarious trauma through their parent's experiences. One interviewee explained, "*Children feed off the stress of their parents. A child comes to school thinking, 'my parents don't*

have rent money, we don't have any food' and it impacts their mental health and their ability to learn." Children of immigrants were also described as susceptible to mental health challenges because of competing pressures and identities, often serving as a *"liaison between both worlds".* Though not as frequently discussed as stress, anxiety was also identified as a common concern for parents and young people who participated in focus groups. Online bullying and social media were mentioned as components of this anxiety, as well as high-pressures to perform in school.

The concern about youth mental health issues is validated by survey data. Responses from the Youth Risk Behavior Survey indicate approximately 30% of Boston public high school students reported feeling persistent sadness (measured by feeling sad or hopeless every day for 2 weeks or more in the past 12 months) (Figure 92). When looking at data by specific groups, female students (36.8%) were significantly more likely than male students (23.3%) and students who identify as LGBTQ (48.4%) were significantly more likely than students identifying as heterosexual/non-transgender (27.1%) to report feeling persistent sadness.

Figure 92. Percent Boston Public High School Youth Reporting Persistent Sadness, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Students were asked in the past 12 months if they felt sad or hopeless every day for 2 weeks or more; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

The YRBS data in the previous graph were aggregated across years to provide a large enough sample for sub-group analyses. When examining YRBS data by year, Figure 93 shows a statistically significant increase over time, from 24.8% of Boston public high school students reporting persistent sadness in 2011 to 33.4% reporting the same in 2017.

Figure 93. Percent Boston Public High School Youth Reporting Persistent Sadness, by Boston and Over Time, 2011–2017

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Students were asked in the past 12 months if they felt sad or hopeless every day for 2 weeks or more; Error bars show 95% confidence interval; Change over time was statistically significant (increase over time)

Suicide and Suicidal Ideation

Aggregating data from 2012-2016, the age-adjusted suicide rate for Boston overall is 6.7 deaths per 100,000 residents (Figure 94). Suicide rates were significantly lower among Asian and Latino residents compared to White residents. Rates were highest among males compared to females and those ages 45-64 years compared to the referent of 65+ years. Additional data by neighborhood in APPENDIX I show that Dorchester (zip code 02122, 02124) was the only neighborhood with a significantly higher suicide rate than the rest of Boston.

Figure 94. Suicide Rate, by Boston and Selected Indicators, Age–Adjusted Rate per 100,000 Residents, 2012–2016 Combined

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2012-2016 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents
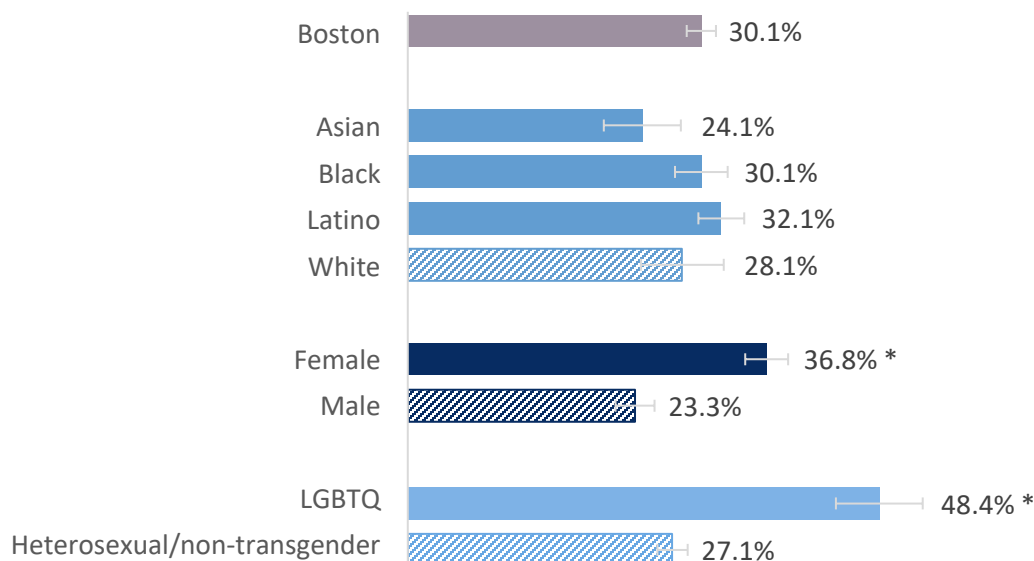
Nearly one in eight Boston public high school students have reported seriously considering suicide (Figure 95). Responses were most likely among LGBTQ students, where nearly 26% indicated that they seriously considered suicide, compared to 9.9% of students who identified as heterosexual or non-transgender. Female students (15%) were also significantly more likely than male students (8.8%) to report considering suicide. The percentage of students who reported seriously considering suicide generally remained steady over time from 2011-2017 (Figure 96).

Figure 95. Percent Boston Public High School Youth Reporting Seriously Considering Suicide in the Past Year, by Boston and Selected Indicators, 2013, 2015, 2017 Combined
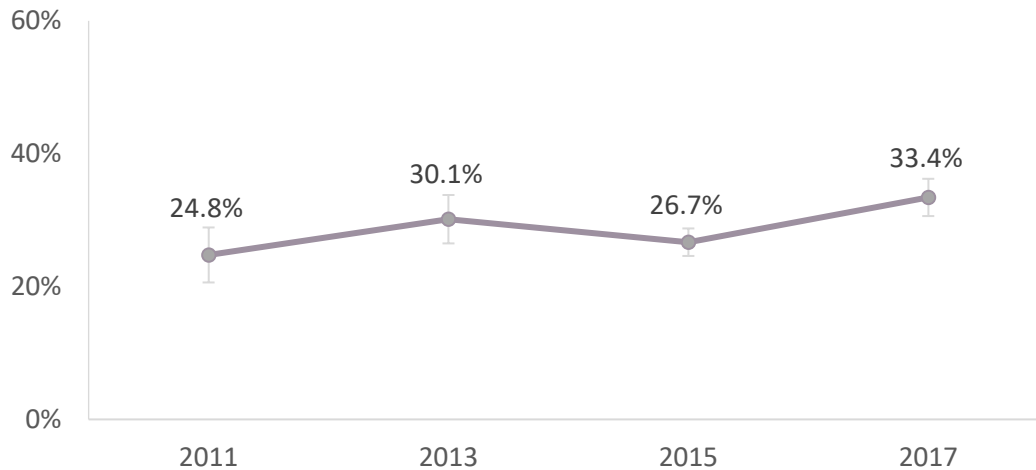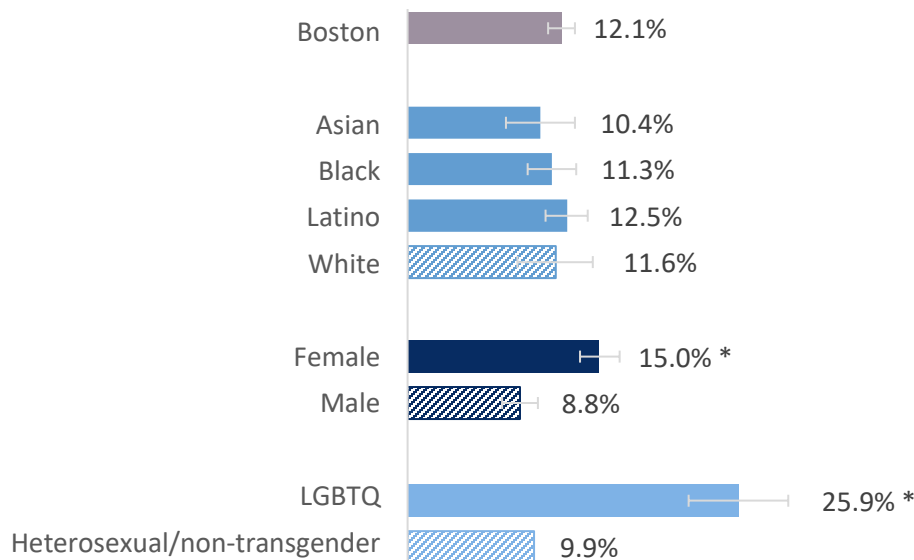

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months, did they seriously consider attempting suicide; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Figure 96. Boston Public High School Youth Reporting Seriously Considering Suicide in the Past Year, by Boston and Over Time, 2011–2017

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months, did they seriously consider attempting suicide; Error bars show 95% confidence interval; Change over time was not statistically significant

Similar to the pattern of suicide ideation, LGBTQ students, at 18.2%, were more likely to report attempting suicide in the past year compared to heterosexual/non-transgender students (5.9%) (Figure 97). There were also differences by race/ethnicity among students responding to this question. Latino students overall (9.2%) were significantly more likely than White students (6.0%) to report attempting suicide in the past year. Among male students, Black and Latino males were significantly more likely than White males to report attempting suicide in the past year.

Figure 97. Percent Boston Public High School Youth Reporting Attempting Suicide in the Past Year, by Boston and Selected Indicators, 2013, 2015, 2017 Combined

Category	Percent
Boston	7.6%
Asian	4.6%
Black	6.7%
Latino	9.2% *
White	6.0%
Female	7.7%
Male	7.1%
Asian females	4.5%
Black females	5.1%
Latina females	10.5%
White females	8.3%
Asian males	NA
Black males	8.4% *
Latino males	7.4% *
White males	4.7%
LGBTQ	18.2% *
Heterosexual/non-transgender	5.9%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; NA denotes where data not presented due to insufficient sample size; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

While the earlier figures indicated that the responses stayed generally the same over time on whether students considered suicide, Figure 98 shows a significant decrease in the percentage of students who reported attempting suicide in the past year, from 8.6% in 2011 to 5.6% in 2017.

Figure 98. Percent Boston Public High School Youth Reporting Attempting Suicide in the Past Year, by Boston and Over Time, 2011–2017

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
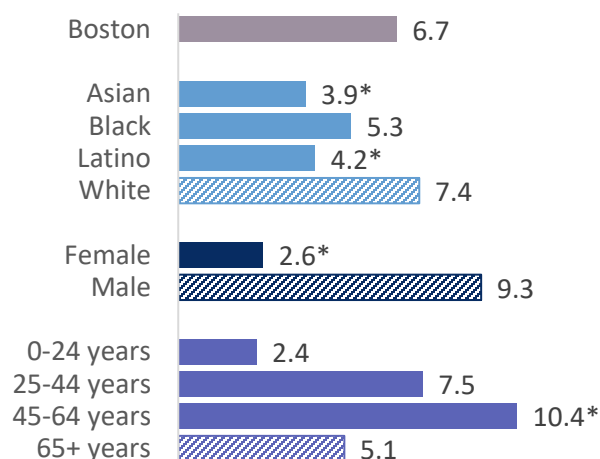DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months, did they seriously consider attempting suicide; Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

Social Connectedness

Connectedness is an important protective factor in mental health; having a trusted adult in one's life is one indicator of positive youth development and support. While two-thirds of Boston public high school students reported that they have at least one trusted adult at school, responses were significantly lower among Asian, Black, and Latino students (Figure 99). Responses among Asian and Latino students are particularly contrasted when broken out by gender. An additional indicator on youth connectedness to adults at school from the BPS Student Climate Survey can be found in APPENDIX I.

Figure 99. Percent Boston Public High School Youth Reporting Having At Least One Trusted Adult at School, by Boston and Selected Indicators, 2013, 2015, 2017 Combined
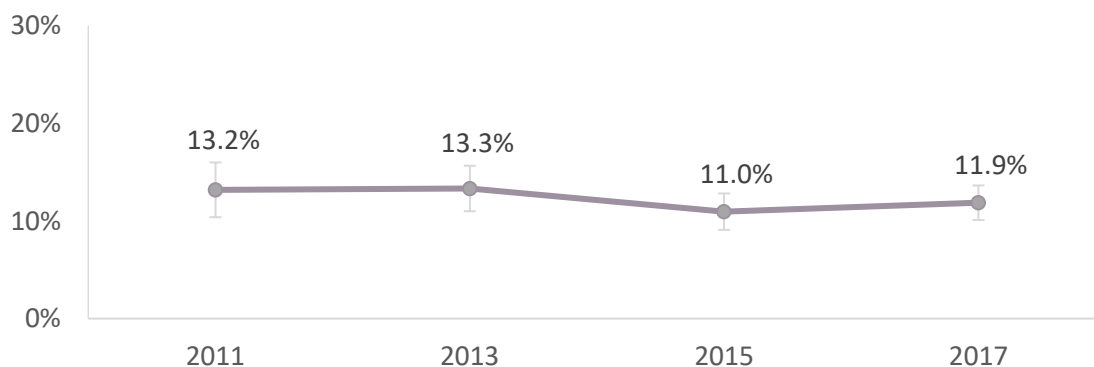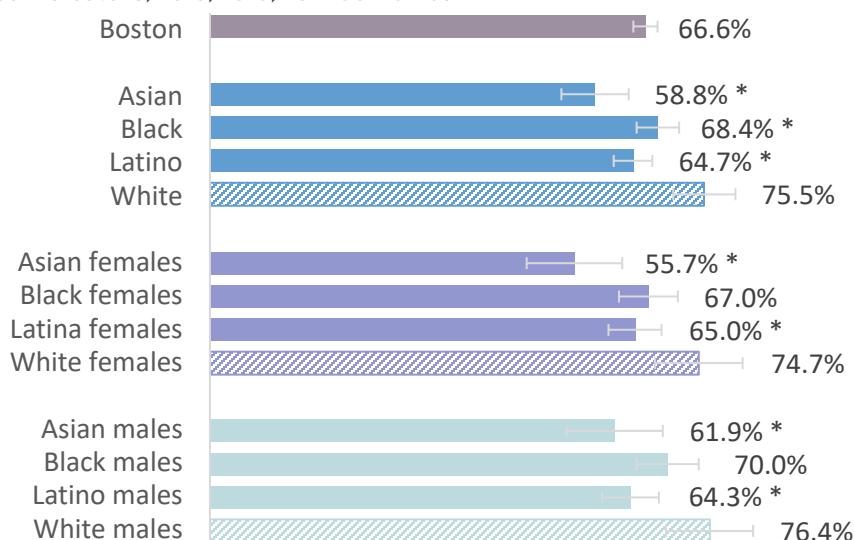

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if there was at least one adult at school they could talk to if they had a problem; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

The Boston Public Schools Student Climate Survey is conducted every year to students in grades 4-11. In 2018, nearly 60% of students indicated that they belong quite a bit or almost totally belong at school, while 6.8% of students reported feeling like they do not belong (Figure 100). Similarly, 60% of students reported quite or extremely accepted by other students at school, while 4.2% reported feeling not accepted at all (Figure 101).

Figure 100. Percent Boston Public School Students Reporting Feeling Like They Belong at School (N=10,458), 2018
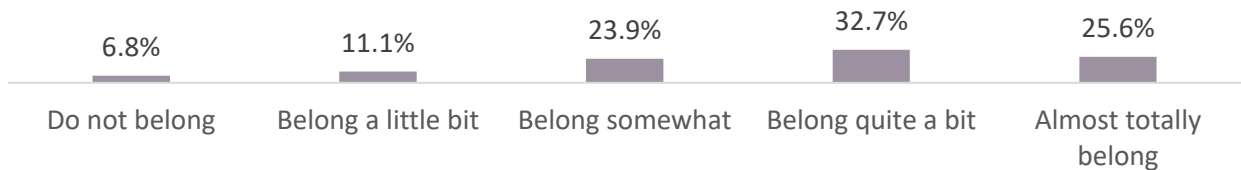
Do not belong	Belong a little bit	Belong somewhat	Belong quite a bit	Almost totally belong
6.8%	11.1%	23.9%	32.7%	25.6%

DATA SOURCE: Boston Public Schools, Office of Data and Accountability, Student Climate Survey, 2018

Figure 101. Percent Boston Public School Students Reporting Feeling Accepted by Other Students at School (N=10,461), 2018
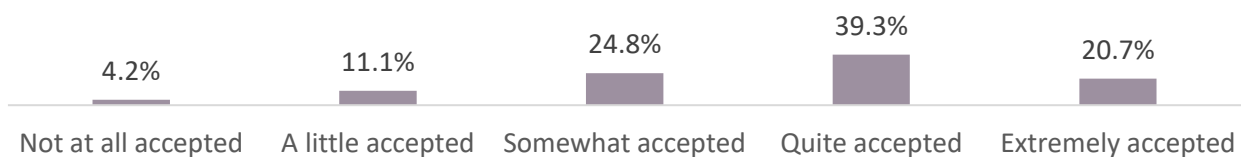
Not at all accepted	A little accepted	Somewhat accepted	Quite accepted	Extremely accepted
4.2%	11.1%	24.8%	39.3%	20.7%

DATA SOURCE: Boston Public Schools, Office of Data and Accountability, Student Climate Survey, 2018

Mental Health Service Utilization and Barriers

While there was no statistically significant increase over time in the percent of BBRFSS respondents who reported persistent sadness, there was a significant increase over time in the percent who indicated they were receiving treatment for depression. As shown in Figure 102, 13.9% of respondents in 2010 reported receiving treatment for depression while 18.5% reported receiving treatment in 2017.

Figure 102. Percent Adults Reporting Receiving Treatment for Depression in the Past Year, by Boston and Over Time, 2010–2017

Year	2010	2013	2015	2017
Percent	13.9%	17.9%	16.8%	18.5%
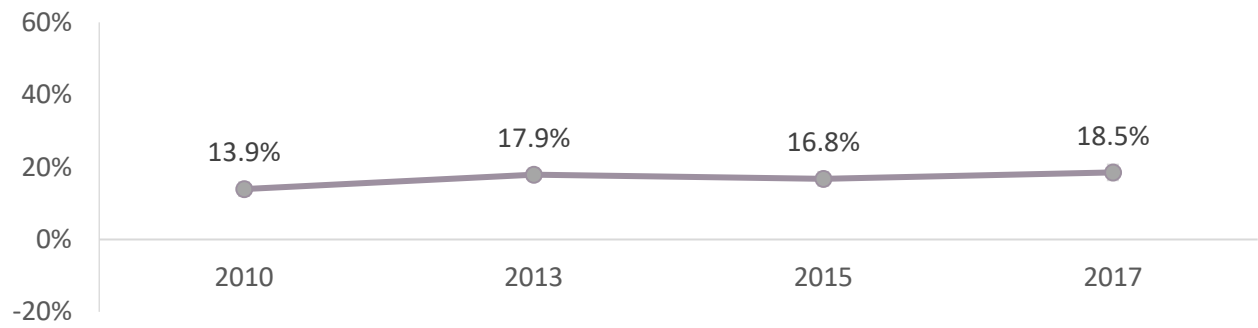
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Error bars show 95% confidence interval; Change over time was statistically significant (increase over time)

Among those who reported receiving treatment for depression, rates were significantly lower among Asian and Black residents compared to White residents and foreign-born residents

compared to those who were born in the U.S. (Figure 103). However, rates were higher among those 50-64 years old, females, BHA and renter with assistance, and LGBTQ residents compared to the referent in each of their sub-groups.

Figure 103. Boston Adult Residents Receiving Treatment for Depression in the Past Year by Selected Indicators, 2013, 2015, and 2017 Combined

Indicator	Percent
Boston	17.7%
Asian	8.5% *
Black	14.9% *
Latino	19.4%
White	20.3%
Female	21.6% *
Male	13.5%
18-34 years	15.5%
35-49 years	17.8%
50-64 years	21.8% *
65+ years	13.5%
BHA resident	26.4% *
Renter, rental assistance	33.2% *
Renter, no assistance	16.4%
Other housing arrangement	18.6%
Home owner	14.5%
10 years or less in U.S.	9.4% *
More than 10 years in U.S.	14.2% *
Born in U.S.	20.5%
LGBTQ	30.9% *
Heterosexual/non-transgender	16.5%
Less than $25,000	24.8% *
$25,000-$49,999	15.5%
$50,000 or more	15.5%
Employed	13.7%
Out of Work	27.8% *
Other	23.9% *

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

These statistics mirror some of the themes discussed in the focus groups related to mental health services – where stigma, access barriers, and cultural competency concerns were challenges to getting the mental health care services needed. Specifically, focus group participants discussed that they perceived that mental health services were more easily available for some communities than others; where they saw gaps or challenges were specifically around services for children, non-English speakers, LGBTQ residents, seniors, and the homeless population.

Stigma around mental health was commonly discussed in key informant interviews and in many English and non-English focus groups as a challenge to seeking services. For example, one key informant explained, *"Mental health is kind of a taboo discussion; the community's willingness to embrace mental health services is an issue."* Focus group participants—namely in the neighborhoods of Dorchester, Mattapan, Chinatown, and East Boston—described issues of cost and language accessibility that create barriers to mental health access for these populations. Cost for these services was also noted as barrier for middle-income residents with private insurance who do not qualify for financial supports. Middle income seniors were identified as an underserved population, especially for homebound elders who need in-home support. One interviewee summarized, *"People spend down their savings very quickly for in-home [mental health] care."*

Cultural and lingustic differences were described as barriers to mental health utilization for immigrant communities. One interviewee summarized, *"There's a lack of mental health providers in general, and then when you add the cultural competency/language barriers among those providers it's even harder."* Other key informants explained how non-English speakers had to wait longer to receive services, with one sharing, *"The availability of interpreters at medical facilities often delays appointments, whether that is scheduling appointments in advance or the actual starting time of an appointment on the day of. And if an interpreter is not available, the client can have a very difficult time communicating with their physician."*

Focus group participants, namely those from communities of color and immigrant residents, expressed frustration at the lack of mental health providers that reflect their lived experiences. For example, mothers who experienced violence in Dorchester explained being offered mental health services from clinicians who they identified as inexperienced and lacking racial awareness. As one focus group participant explained, *"We want help, it's not in our community to get help because we were raised to not talk about what happens in our house; but when we ask for help, you get somebody who clearly does not understand what you're going through. It's not easy to balance."* Others agreed and added, *"I got a grief counselor who was a White lady in her early 20s, and she keeps telling me 'I understand, it's going to be alright' and in my mind I'm saying, 'You do not understand. Have you ever lost somebody? How can you possibly understand what I'm going through?' If you're going to tell me you understand you need to have gone through the same things I have."* Further, one key informant explained that traditional counseling services may not be the best approach for every population group; religious minority groups, for example—and it's important to consider tailored approaches for each community: *"Not everyone needs counseling or medicine; it's not easy to find a counselor who can think with you. Sometimes counselors can make things worse if [they] don't understand the basics of your faith."*

Other key informant participants pointed to systemic challenges to addressing community mental health issues. Participants described an insufficient number of providers in the community to meet the demand, noting long wait lists and limited resources for non-English speakers. Key informants with school-based experience spoke of the need for more full-time emotional supports in the school system, including social workers and counselors in every public school. Several key informants also cited larger workforce challenges that compounded these issues, including the struggle to attract and retain a diverse behavioral health work force; these challenges were attributed to low-wages, licensing demands, and costs of higher education or student debt. Key informants and focus group with parents identified a need for

additional mental health supports within schools and community-based organizations, especially for children who have experienced trauma or community violence.

Substance Use

Why is This Important?

According to the National Survey on Drug Use and Health (NSDUH), in 2017 about 19.7 million American adults (aged 12 and older) battled a substance use disorder.[62] Alcohol abuse disorder is the most common, affecting 14.5 million people (74%). About 38% of adults in 2017 battled an illicit drug use disorder; an estimated 2.1 million people (or 28% of those with an illicit drug use disorder) had an opioid use disorder.[63] The impact of substance abuse on individuals, families, and communities is tremendous, including poor health, fraying social structures, abuse and neglect of children, and crime and violence. Substance abuse also has substantial economic cost: abuse of tobacco, alcohol, and illicit drugs is estimated to cost American society more than $740 billion annually in lost workplace productivity, health care expenses, and crime.[64]

Key Findings in This Section

> "There is far too little access to treatment programs, and those that do exist are not linguistically and culturally competent."—Key informant interviewee

Substance use was considered a priority health issue in many focus group and interview discussions. Participants mentioned a variety of substances including marijuana, prescription drug use, and opioids as being among the most concerning. Co-occurring mental health and substance use issues were frequently discussed among key informants, as well as the interrelationship between trauma, mental health, and substance use. Smoking among adults and youth, as well as e-cigarette and marijuana use among youth, have significantly decreased in Boston; however, there are significant differences by population groups. Notably, LGBTQ adults and youth are more likely to use tobacco, e-cigarettes, and marijuana, compared to heterosexual/non-transgender adults and youth; a similar pattern emerged among the LGBTQ population for alcohol consumption and prescription drug use. The majority of focus group participants and key informants who discussed substance use as a concern identified opioids as a persistent issue in Boston. The rate of opioid overdose deaths in Boston has significantly increased since 2013 and was highest among Latino residents, followed by White residents.

Perceptions of Substance Use

Substance use was considered a priority health issue in many focus group and interview discussions. Participants mentioned a variety of substances including opioids, marijuana, and prescription drug use as being among the most concerning. Co-occurring mental health and substance use issues were frequently discussed among key informants. Additionally, key informant interviewees discussed the interrelationship between trauma, mental health, and substance use. As one interviewee noted, *"Significant levels of trauma and adverse childhood*

events are really huge issues that contribute to a whole host of negative health outcomes, substance use being a big one of them."

While not mentioned as frequently as opioids, a few focus group and interview participants did note that alcohol was a commonly abused substance, especially by those experiencing homelessness. Tobacco use was mentioned as a concern for specific population groups, particularly for those in Chinatown and those who identified as homeless. A couple of key informants discussed how older adults are vulnerable to addiction issues; one shared, *"There is also an intergenerational challenge [with substance use] …a son or daughter's means older folks are now taking care of their grandchildren; that must place a lot of stress on them if they weren't expecting or prepared for it."* Additionally, some key informant participants shared the perception that law enforcement is increasingly encountering residents with substance use issues and could benefit from additional support and training.

Participants were especially concerned about the impact of substance use disorders on young people. In Chinatown, East Boston, and Dorchester, for example, focus group participants perceived an increase in youth drug abuse, specifically mentioning marijuana, vaping, and prescription pills like Adderall. Some focus group participants and key informants reported that they believed that providers were over prescribing/diagnosing children, and as a result, enabling addictive behavior. For example, interviewees explained that conditions such as ADHD often mimic symptoms that are caused by trauma; there were perceptions that children are being overmedicated for these ailments because the root causes of their symptoms were not being addressed. One Roxbury resident who worked with children shared, *"There have been huge increases in ADHD diagnoses—especially in Black and Latino boys. It makes me wonder—how much of this is really ADHD and how much of these behavioral issues stem from trauma?"* Likewise, focus group participants in the South End echoed this sentiment, with one sharing, *"A lot of doctors are too quick to medicate; we need to as what brought [children] to this point. If they have depression, they give them medications instead of finding out why this is happening and connecting them to other resources other than medicating them."*

Tobacco and Marijuana Use

Tobacco use was described as a frequent concern among focus group participants in Chinatown; this was reiterated in the survey results with smoking being the top health concern among Chinatown residents who completed the CHNA survey. Interview participants described the need for more smoking cessation resources, especially for new immigrants and non-English speakers. One shared, *"Smoking remains a challenge in Chinatown. There should be an emphasis on education and support for people who want to know more about smoking and to change their behavior; behavior changes must be a long-term effort."* Tobacco use was also mentioned as a common occurrence for residents who were housing insecure. One resident who identified as chronically homeless shared, *"Everybody smokes in the shelter; it's rare when men don't do it."*

While Boston has seen a statistically significant decrease in smoking since 2010, nearly one in six adults (15.0%) reported being a current smoker in 2017 (Figure 104). As noted by focus groups participants, certain neighborhoods have higher rates of smoking. South End (which includes Chinatown) and Dorchester (zip codes 02122, 02124) have significantly higher rates of smoking than the rest of Boston, with over 20% of their adult populations reporting being a current smoker (Figure 105).

Figure 104. Percent Adults Reporting Current Smoking, by Boston and Over Time, 2010–2017
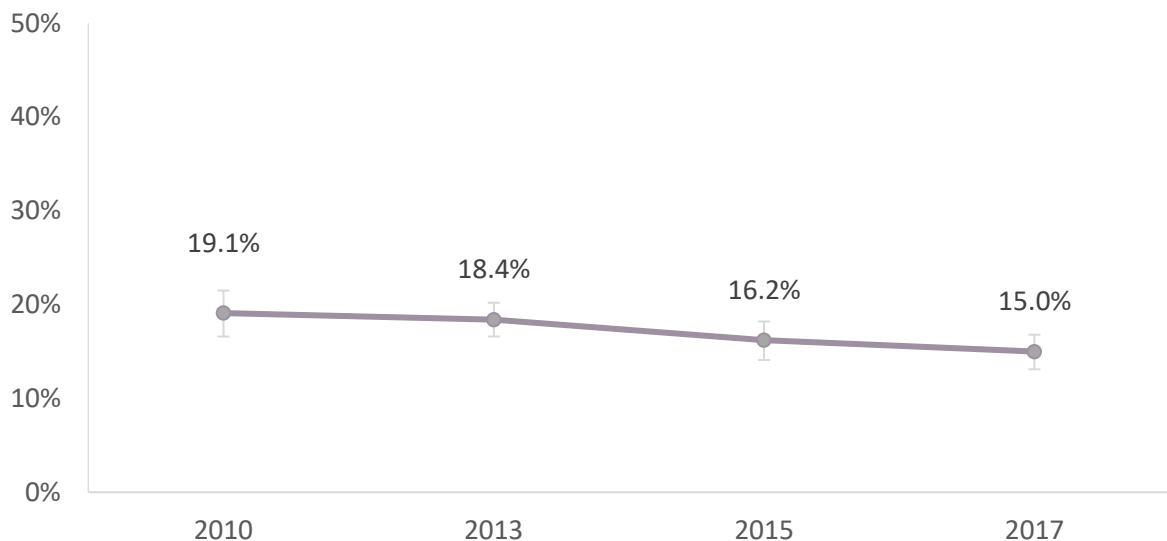
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

Figure 105. Percent Adults Reporting Current Smoking, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
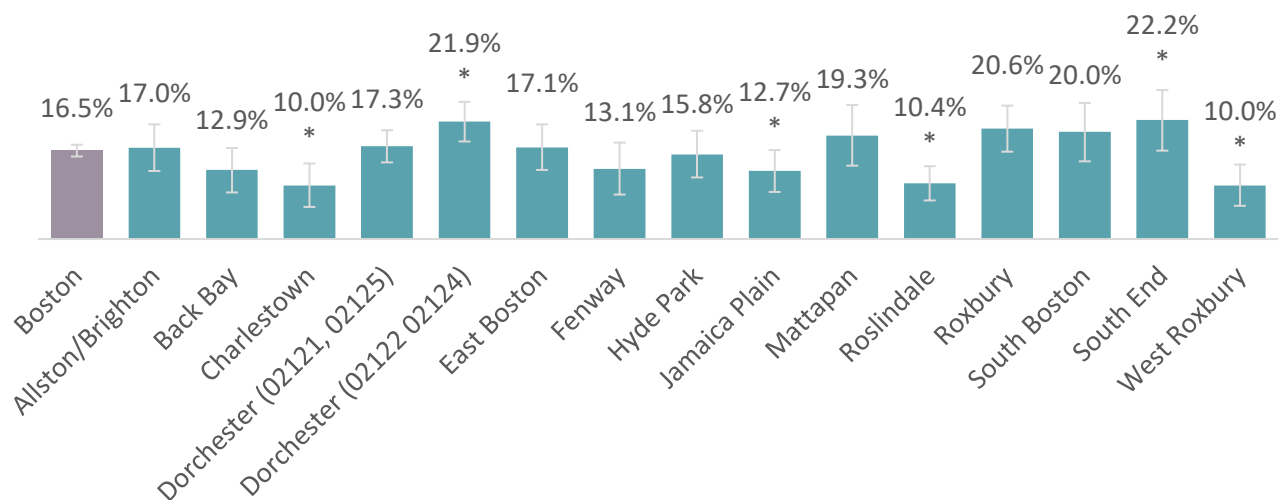
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Smoking status also varies within different groups as shown in Figure 106. Black residents are more likely to be current smokers than White residents (while Asian residents are less likely), non-homeowners in any housing situation categorized in the survey are more likely to be

smokers than homeowners, LGBTQ respondents are more likely to be smokers than heterosexual/non-transgender respondents, and those with lower levels of education, lower levels of income, and without full-time employment are more likely to be smokers than their higher socio-economic status counterparts.

Figure 106. Percent Adults Reporting Current Smoking, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Indicator	Percent
Boston	16.5%
Asian	12.4%*
Black	19.3%*
Latino	13.9%
White	16.5%
Female	13.2%*
Male	20.2%
BHA resident	30.1%*
Renter, rental assistance	30.9%*
Renter, no assistance	18.5%*
Other housing arrangement	18.3%*
Home owner	8.2%
Less than HS graduate	26.5%*
HS graduate	22.0%*
Some college or more	12.8%
LGBTQ	22.4%*
Heterosexual/non-transgender	15.9%
Less than $25,000	26.5%*
$25,000-$49,999	16.9%*
$50,000 or more	10.3%
Out of Work	30.8%*
Other	19.6%*
Employed	13.5%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Youth cigarette smoking rates in Boston have also significantly declined over time, from 10% of Boston high school students reporting being a current smoker in 2011 to only 3.1% of high school students in 2017 (Figure 107). Smoking rates among Boston high school students were significantly lower among Black students and females, and specifically among Black and Latina females when looking at rates within sex (Figure 108).

Figure 107. Percent Boston Public High School Youth Reporting Current Cigarette Smoking, by Boston and Over Time, 2011–2017
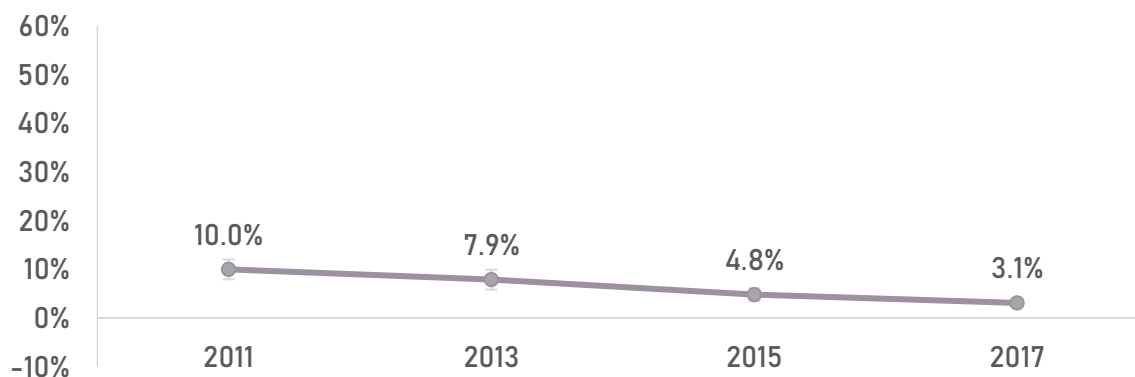
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

Figure 108. Percent Boston Public High School Youth Reporting Current Cigarette Smoking, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined
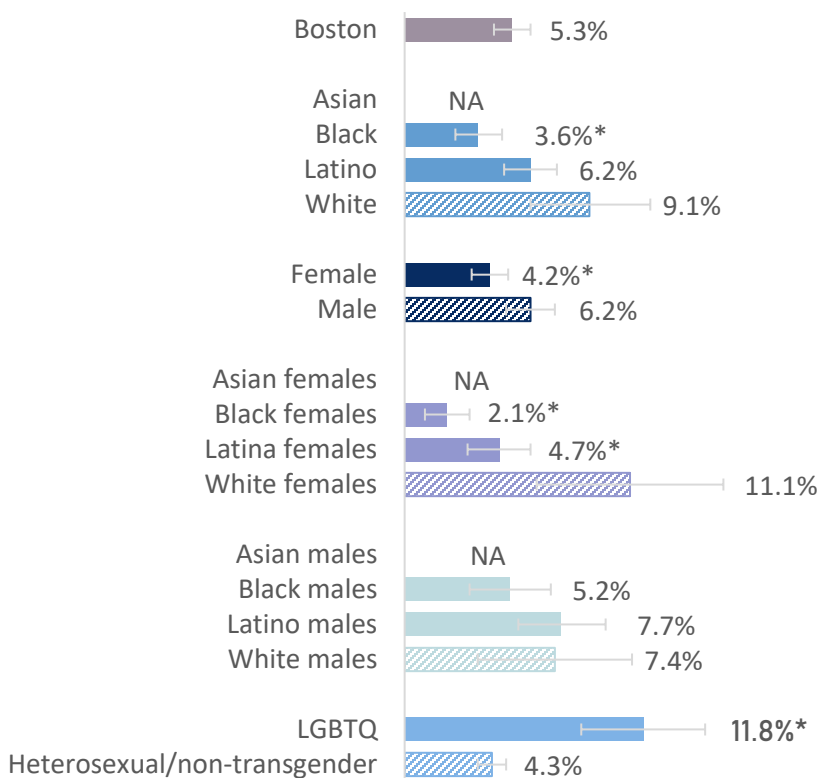
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Current smoking is defined as smoking cigarette in the past 30 days; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

A growing concern among focus group and interview participants was e-cigarettes or vaping, which was described as an increasingly popular substance used by young people and adults. However, data from the Youth Risk Behavior Risk Survey indicates that the use of e-cigarettes among high school students has significantly decreased, from 14.5% reporting use in 2015 down to 5.1% of high school students reporting any e-cigarette use in the past 30 days (data in APPENDIX I).

Key informants perceived that there were misconceptions of the health risks of vaping, with one sharing, *"Children report that they may have tried vaping because the fruity flavors were enticing, and they did not know there were other chemicals involved."* Others explained how the discreet nature of these devices made it easier for young people to use in places like schools or in public, sharing, *"E-cigarettes are discrete and appear like USB drives; a user can take a puff and put the device back in their pocket, so one does not always notice them out in public the way we do with cigarettes."*

E-cigarette use among youth does vary by different groups. At 18.3%, LGBTQ youth are significantly more likely to report having used e-cigarettes in the last 30 days than heterosexual or non-transgender youth (Figure 109). Additionally, White students are significantly more likely than Asian or Black students to use e-cigarettes.

Figure 109. Percent Boston Public High School Youth Reporting Current Electronic Cigarette Smoking, by Boston and Selected Indicators, 2015 and 2017 Combined

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2015 and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Current electronic cigarette use is defined as any use of electronic cigarettes in the past 30 days; Electronic cigarettes are not limited to tobacco consumption only; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Marijuana concerns were discussed in multiple focus groups, particularly as they related to young people and particularly given the recent legalization of the substance. Those working with young people or in community-based settings described seeing an increase in marijuana use among students and parents in recent years, which they attributed to more social acceptance. However, YRBS data over the last few years indicates that marijuana use has remained steady since 2011, with approximately one-quarter of Boston high school students reporting current marijuana use (data in APPENDIX I).

Several focus group and interview participants commented on the variety of ways that residents are consuming marijuana, with one interviewee sharing: *"Marijuana used to be simple, something kids would do behind the school; but today there are so many forms of marijuana like brownies and gummy bears, and youth are organizing parties or gatherings to try these things."*

Focus group participants from East Boston, Chinatown, and Allston/Brighton reported concerns for plans to open marijuana dispensaries in their neighborhoods. Those who identified as parents often spoke negatively of marketing campaigns that promoted marijuana use. One resident shared, *"It's very difficult to talk to your kids about marijuana because dispensaries are here and [they are] pervasive."* Another participant agreed and added, *"It's really rare to find someone who doesn't smoke weed...it's so normal to them. Every day my 11-year-old has to drive by a billboard in East Boston that says 'Smile, weed is legal.' What kind of example is that?"* Key informants discussed the importance of early prevention in elementary and middle schools. One interviewee shared, *"We can't stop [marijuana] use all together, but if we can delay first use as long as possible, that could go a long way to preventing more dangerous addictions as kids get older."*

Quantitative data show that 18.5% of Boston adults reported using marijuana in the past 30 days. Figure 110 provides responses to this question by specific population characteristics, revealing that males are significantly more likely than females and LGBTQ adults are significantly more likely than heterosexual/non-transgender adults to report current marijuana use.

Figure 110. Percent Adults Reporting Current Marijuana Use, by Boston and Selected Indicators, 2017

Boston	18.5%
Asian	NA
Black	16.5%
Latino	16.4%
White	21.5%
Female	14.2%*
Male	23.0%
18-34 years	26.0%
35-49 years	25.3%
50-64 years	10.3%*
65+ years	4.8%*
BHA resident	21.6%
Renter, rental assistance	27.2%*
Renter, no assistance	20.1%*
Other housing arrangement	28.5%*
Home owner	12.6%
10 years or less in U.S.	NA
More than 10 years in U.S.	8.6%*
Born in U.S.	23.2%
LGBTQ	33.6%*
Heterosexual/non-transgender	16.8%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval; NA denotes where data are suppressed due to insufficient sample size

Similar to patterns of adult marijuana use, LGBTQ youth (39.2%) were also significantly more likely than heterosexual/non-transgender youth to be current marijuana users (21.7%). Looking at the responses by race/ethnicity, Asian students were significantly less likely to report current marijuana use compared to White students (Figure 111).

Figure 111. Percent Boston Public High School Youth Reporting Current Marijuana Use, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Group	Percent
Boston	24.1%
Asian	8.9%*
Black	24.2%
Latino	28.1%
White	26.7%
Female	23.4%
Male	24.8%
Asian females	7.2%*
Black females	21.9%
Latina females	29.1%
White females	26.6%
Asian males	10.5%*
Black males	26.5%
Latino males	26.9%
White males	27.0%
LGBTQ	39.2%*
Heterosexual/non-transgender	21.7%
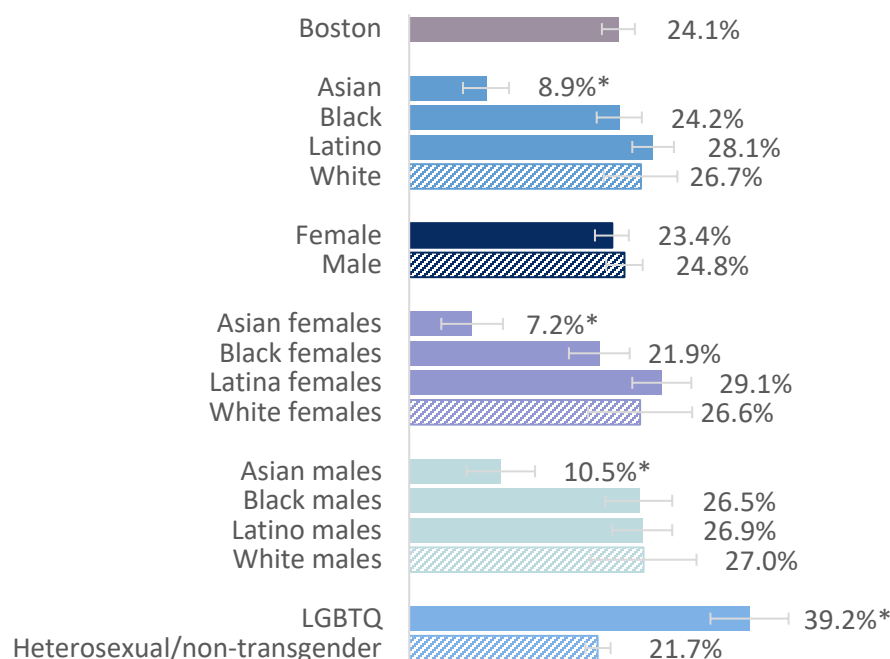
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Current marijuana use is defined as any marijuana use in the past 30 days; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval
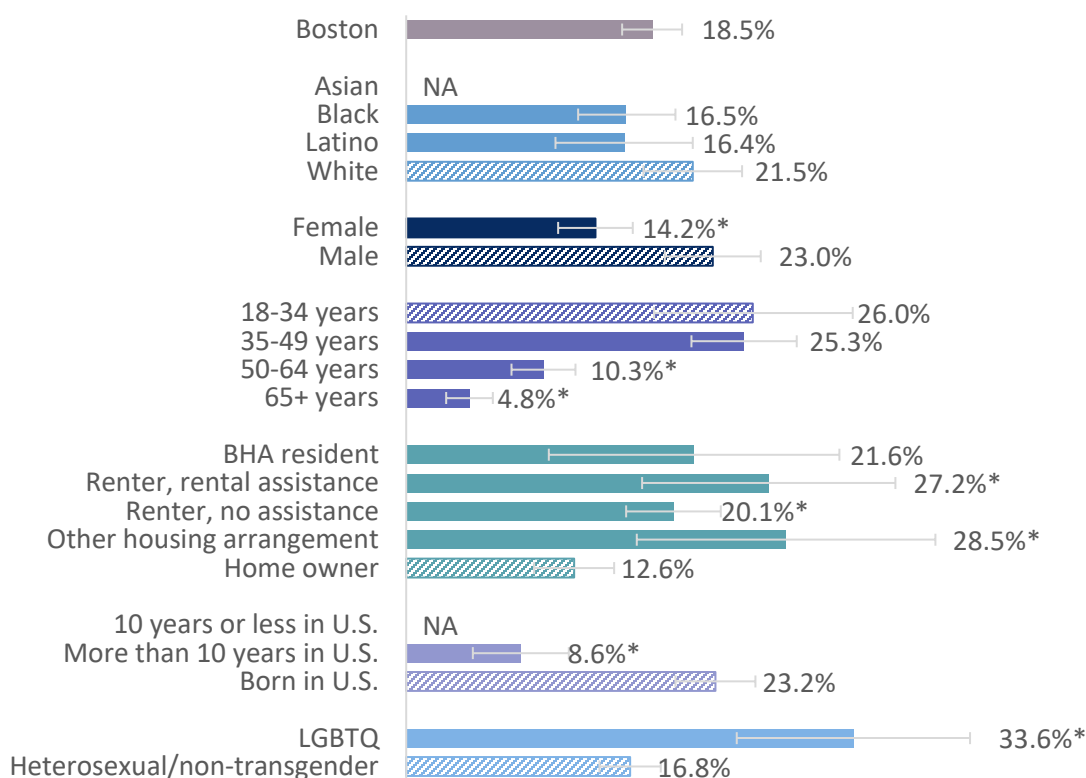
Provided in APPENDIX I is additional data on marijuana, including marijuana dependence and abuse within hospital patient encounters.

Alcohol Use

Alcohol use was not discussed as frequently as opioids in focus group and interview discussions, but some participants did comment that, even with all of the concern about opioids, alcohol was still a commonly abused substance. This section presents data specifically on binge drinking, while data on heavy drinking (>60 alcoholic drinks for males and >30 for females in past 30 days) can be found in APPENDIX I.

The percent of Boston adults reporting binge drinking (having 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women) has remained steady since 2010, with approximately one-quarter of Boston adult BRFSS respondents reporting this behavior (data over time presented in APPENDIX I). Figure 112 presents data across different population groups. There are several differences within groups, such as LGBTQ adults (30.5%) are significantly more likely than heterosexual/non-transgender adults (24.0%), males (29.8%) are significantly more likely than females (19.8%), and adults earning $50,000 or more (32.5%) are significantly more likely than those earning $25K-<$50K (21.4%) or those earning <$25K (18.5%) to report binge drinking. In terms of youth, over a quarter of high school youth reported current alcohol consumption (26.6%). Differences can be seen across sub-populations in Figure 113.

Figure 112. Percent Adults Reporting Binge Drinking, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Boston	24.6%
Asian	10.7%*
Black	16.2%*
Latino	20.9%*
White	32.2%
Female	19.8%*
Male	29.8%
18-34 years	29.4%
35-49 years	34.4%*
50-64 years	15.2%*
65+ years	6.7%*
BHA resident	15.7%*
Renter, rental assistance	16.1%*
Renter, no assistance	31.0%*
Other housing arrangement	22.2%
Home owner	21.4%
Less than HS graduate	14.3%*
HS graduate	17.3%*
Some college or more	28.8%
10 years or less in U.S.	19.7%*
More than 10 years in U.S.	15.2%*
Born in U.S.	28.6%
LGBTQ	30.5%*
Heterosexual/non-transgender	24.0%
Less than $25,000	18.5%*
$25,000-$49,999	21.4%*
$50,000 or more	32.5%
Out of Work	21.6%*
Other	14.6%*
Employed	30.0%
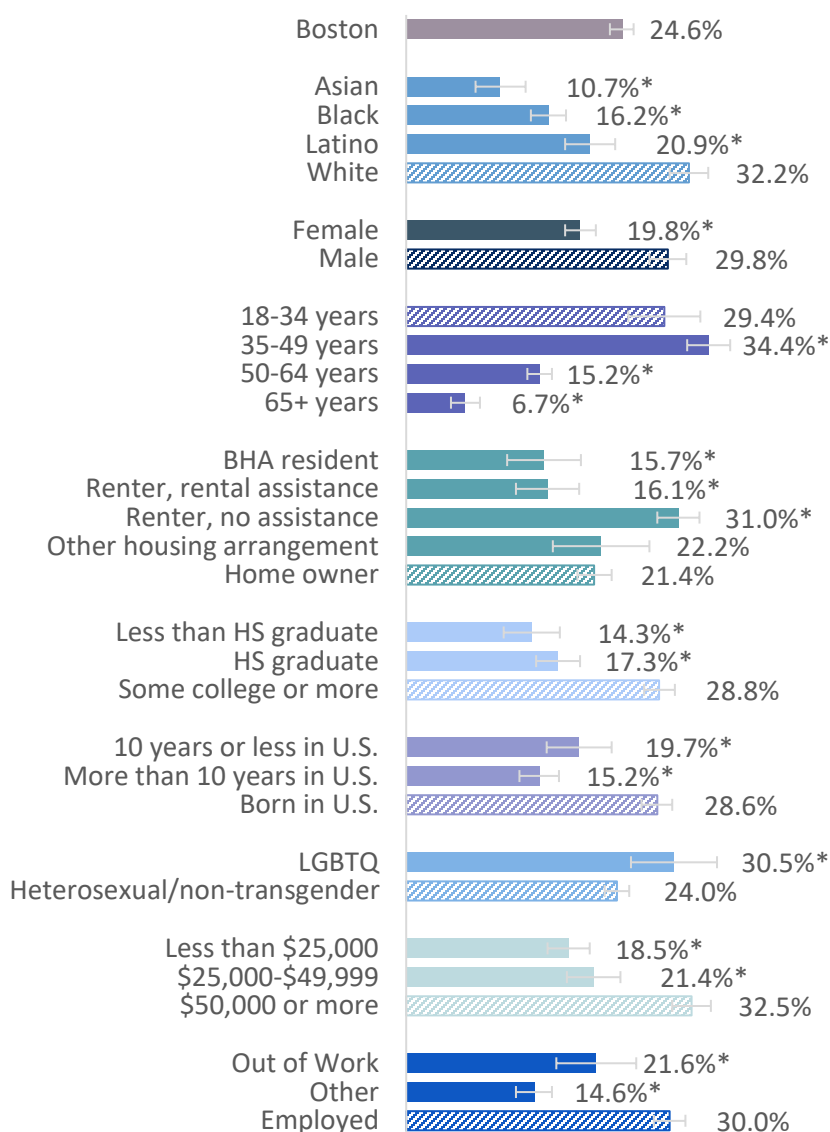
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Binge drinking is defined as having 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Figure 113. Percent Boston High School Youth Reporting Current Alcohol Consumption, by Boston and Selected Indicators, 2013, 2015, and 2017
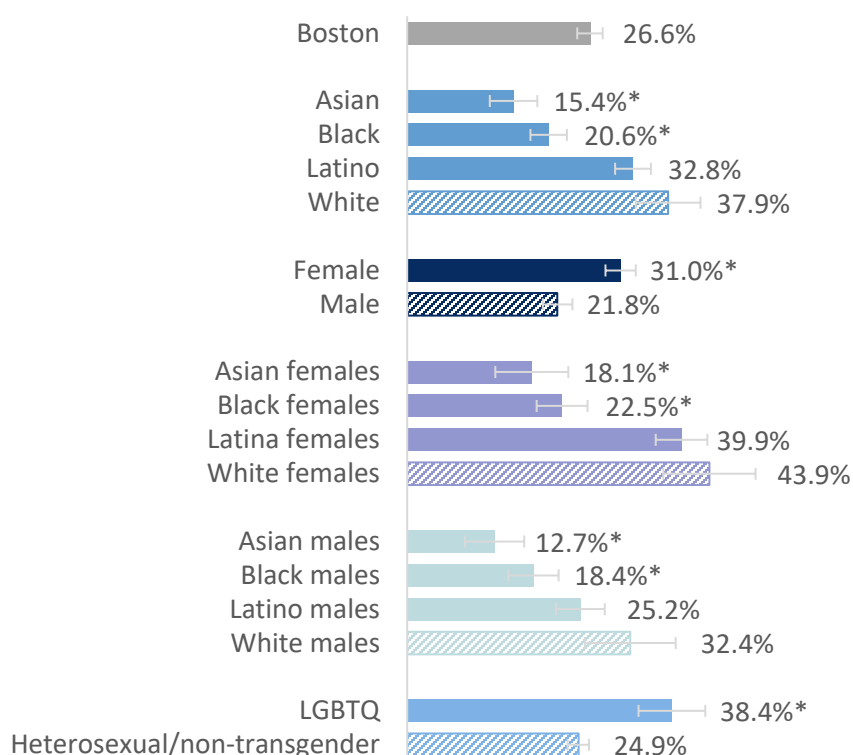
Category	Percent
Boston	26.6%
Asian	15.4%*
Black	20.6%*
Latino	32.8%
White	37.9%
Female	31.0%*
Male	21.8%
Asian females	18.1%*
Black females	22.5%*
Latina females	39.9%
White females	43.9%
Asian males	12.7%*
Black males	18.4%*
Latino males	25.2%
White males	32.4%
LGBTQ	38.4%*
Heterosexual/non-transgender	24.9%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

There has been a significant decrease since 2011 in the percent of Boston high school students who report binge drinking, with 16.6% in 2011 to 10.5% in 2017. However, there are significant differences by student characteristics. White students were more likely than those of racial/ethnic groups, female students were more likely than male students, and LGBTQ students were more likely than heterosexual/non-transgender students to report current binge drinking behaviors (Figure 114).

Figure 114. Percent Boston High School Youth Reporting Current Binge Drinking, by Boston and Selected Indicators, 2013, 2015, and 2017
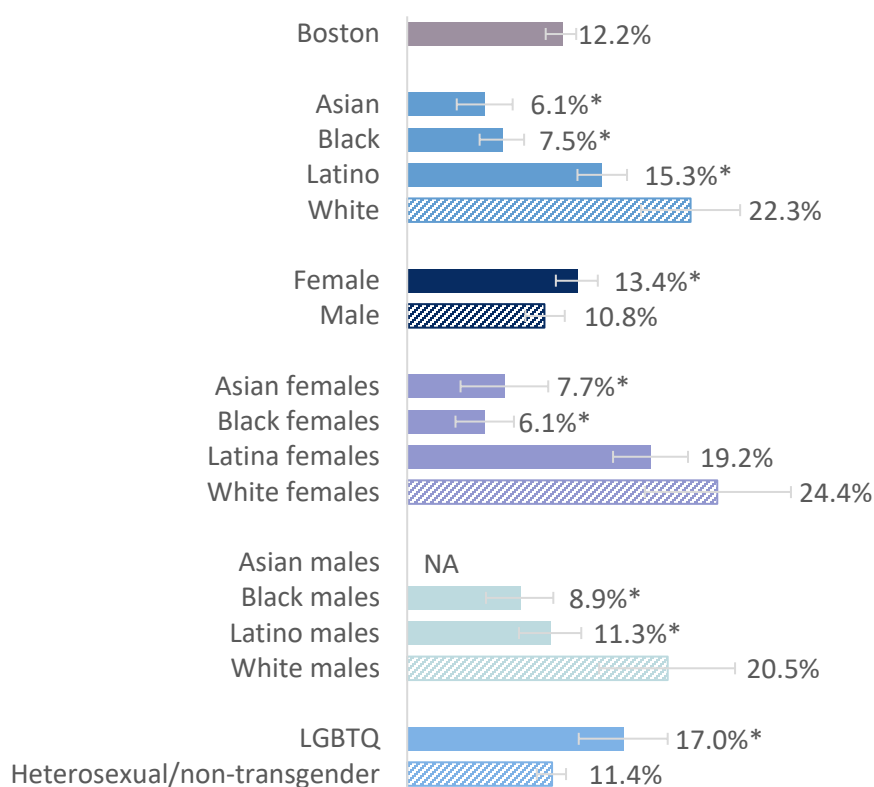
Boston	12.2%
Asian	6.1%*
Black	7.5%*
Latino	15.3%*
White	22.3%
Female	13.4%*
Male	10.8%
Asian females	7.7%*
Black females	6.1%*
Latina females	19.2%
White females	24.4%
Asian males	NA
Black males	8.9%*
Latino males	11.3%*
White males	20.5%
LGBTQ	17.0%*
Heterosexual/non-transgender	11.4%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval; NA denotes where data are suppressed due to insufficient sample size

Figure 115 and Figure 116 present hospital patient encounter data for alcohol poisoning and alcohol dependence/abuse. While White residents had the highest rates of hospital patient encounters for alcohol poisoning (Figure 115), Black residents had the highest rates of hospital patient encounters for alcohol dependence/abuse. In both instances, men had a much higher rate of hospital patient encounters than women.

Figure 115. Alcohol Poisoning Hospital Patient Encounters, by Boston and Selected Indicators, Age–Adjusted Rate per 10,000 Residents 12 Years and Over, 2016–2017 Combined

Indicator	Rate
Boston	4.2
Asian	1.3*
Black	3.2*
Latino	3.1*
White	5.6
Female	1.8*
Male	6.8
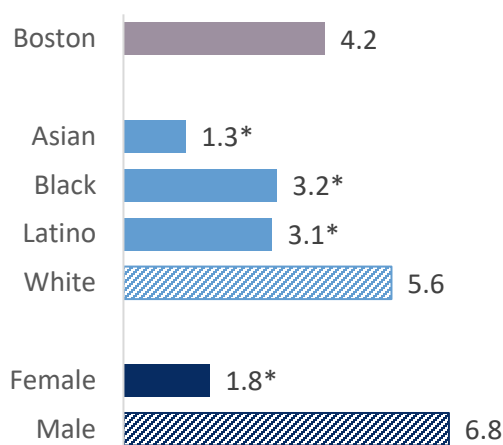
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample size for Asian is ≤ 20 and rate should be interpreted with caution; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 116. Alcohol Dependence and Abuse Hospital Patient Encounters, by Boston and Selected Indicators, Age–Adjusted Rate per 10,000 Residents 12 Years and Over, 2016–2017 Combined

Indicator	Rate
Boston	394.3
Asian	37.9*
Black	500.1*
Latino	323.1*
White	459.6
Female	164.9*
Male	642.0

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Alcohol mortality data over time indicate that the alcohol mortality rate for Boston overall has significantly increased over time from 19.2 deaths per 100,000 residents in 2013 to 25.5 deaths per 100,000 residents in 2016 (Figure 117). Examining deaths by race/ethnicity, Latino residents had a significant increase in alcohol mortality rate, with 10.1 deaths per 100,000 in 2013 to 36.9 deaths per 100,000 residents in 2016. Alcohol mortality data by sex can be found in APPENDIX I.

Figure 117. Alcohol Mortality Rate, by Boston and Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016
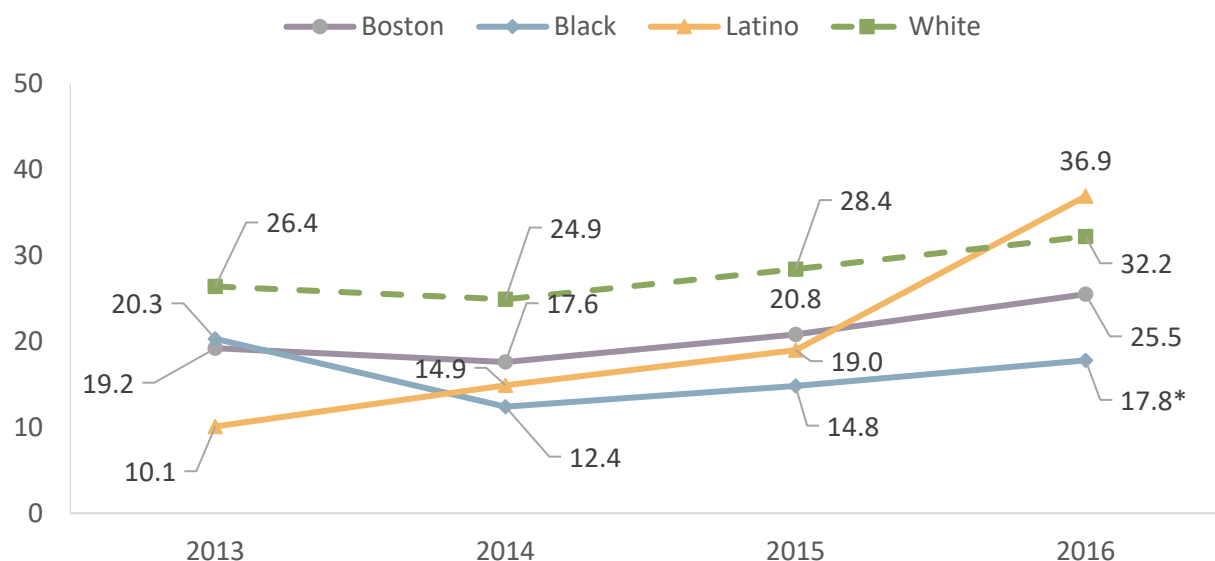
DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Latino for all years and Black for 2014 and 2015 are ≤ 20 and rates should be interpreted with caution; Data not shown for Asian due to insufficient sample size; Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time) and Latino (increase over time)

Opioid and Other Drug Use

The majority of focus group participants and key informants who discussed substance use as a concern identified opioids as a persistent issue in Boston. While a few key informants indicated that major headway around substance use and the opioid epidemic has been made in recent years, more is needed to address the severity of the issue. Several informants indicated that heroin and Fentanyl use was on the rise, and that these substances were cheap and easily available. One key informant shared, *"Heroin is a real health issue; addiction to heroin has been pervasive for decades among some communities and populations."* Some interviewees perceived that opioid use was on the rise in communities of color and cautioned the perception that it is a *"White problem."* Further, one key informant reported that opioid use was increasing among parents, sharing, *"We're seeing parents abusing drugs like heroin, which then leads to the DCF (Department of Children and Families) involvement and removing of children."*

Focus group from Dorchester, Roxbury, and Chinatown as well as several interview participants reported concerns about used needles littering city streets, playgrounds, and parks across Boston. One resident shared, *"I've lived in Roxbury my whole life and now there are so many needles on the ground."* Focus group participants in the South End echoed these sentiments and shared, *"Kids are walking by and seeing needles everywhere on the ground; we are concerned about children picking them in up in the streets."* Residents who identified as active substance users acknowledge the problem of used needles across the city and shared that there are groups working to address the problem; however, more resources are needed. One explained, *"Something that the Drug Users Union is trying to do is show that we are responsible users by doing needle clean ups. We don't want anybody to get hurt—especially children."*

In many instances, opioid addiction starts with dependence of taking prescription pain medication. In 2017, Boston high school students were asked if they had ever taken prescription pain medication without a doctor's prescription or differently than how a doctor told them as shown in Figure 118. While fewer than 10% of Boston high school students reported this, LGBTQ students were significantly more likely – at 18.8% - to report this behavior compared to heterosexual/non-transgender students (7.2%).

Figure 118. Percent Boston Public High School Youth Reporting Prescription Drug Use without Doctor's Prescription/Differently How Told to Use It, by Boston and Selected Indicators, 2017
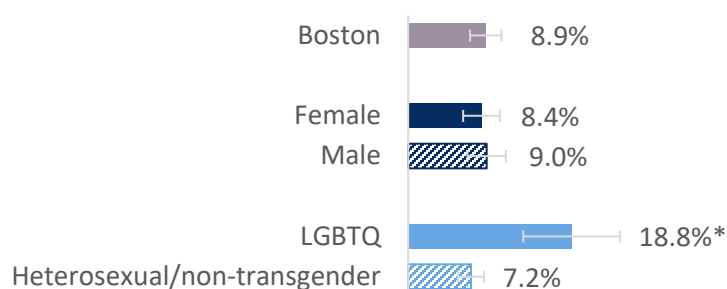
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
Question asked if students ever took prescription pain medicine without a doctor's prescription or differently than how a doctor told them to use it (counting drugs such as codeine, Vicodin, Hydrocodone, and Percocet)
NOTE: Sub-sample sizes by race/ethnicity were insufficient to provide stratified analyses. Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

In 2016-2017, there were 25.0 hospital patient encounter related to opioid overdoses per 10,000 residents (Figure 119). Opioid overdose hospital encounter rates were significantly higher for White residents than for Asian, Black, and Latino residents. Hospital encounter data for cocaine use can be found in APPENDIX I.

Figure 119. Opioid Overdose Hospital Patient Encounters, by Boston and Selected Indicators, Age-Adjusted Rate per 10,000 Residents 12 Years and Over, 2016-2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Over time, there has been a significant increase in unintentional opioid overdose deaths in Boston overall, with 16.6 deaths per 100,000 residents in 2013 to 35.4 deaths per 100,000 residents in 2016 (Figure 120). By race/ethnicity, there has been a significant increase over

time among White and Latinos during this time period. For Latinos, the mortality rate for unintentional opioid overdoses increased over 200%, from 16.7 deaths per 100,000 residents in 2013 to 50.5 deaths per 100,000 residents – the largest rate of all groups. Mortality rate data by sex can be found in APPENDIX I.

Figure 120. Unintentional Opioid Overdose Mortality Rate, by Boston and Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample size for Black and Latino for 2013 and 2014 are ≤ 20 and rates should be interpreted with caution; Data not shown for Asian due to insufficient sample size; Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time), Latino (increase over time), and White (increase over time)

A similar trend to opioids specifically, there was a significant increase for Boston overall and Latino residents specifically in the mortality rate from 2013-2016 in all substance use deaths combined, including alcohol, other drug mortality, and unintentional and intentional overdose or poisoning (Figure 121). Data by sex on substance misuse mortality rates can be found in APPENDIX I, showing a significant increase for both men and women.

Figure 121. Substance Misuse Mortality Rate, by Boston and Race/Ethnicity, Age-Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Substance misuse mortality includes all substance misuse deaths, which includes both alcohol and other drug mortality and intentional overdose/poisoning and dependence/abuse deaths; Sample size for Latino for 2013 is ≤ 20 and rate should be interpreted with caution; Data not shown for Asian due to insufficient sample size; Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time), Latino (increase over time), and White (increase over time)

While the previous graph showed that overall substance misuse mortality rate for Boston increased over time and was 56.5 deaths per 100,000 residents in 2016, Figure 122 shows that the substance misuse mortality rate actually significantly decreased over time for Boston when excluding deaths attributed to fentanyl. In 2016, the substance misuse mortality rate for Boston when excluding fentanyl was 26.0 deaths per 100,000. Data also indicate a significant decrease from 2013 to 2016 among Black residents in their substance misuse mortality rate when excluding fentanyl. A similar significant decrease was seen in the mortality rate among men, which is presented in APPENDIX I.

Figure 122. Substance Misuse (Excluding Fentanyl) Mortality Rate, by Boston and Race/Ethnicity, Age–Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
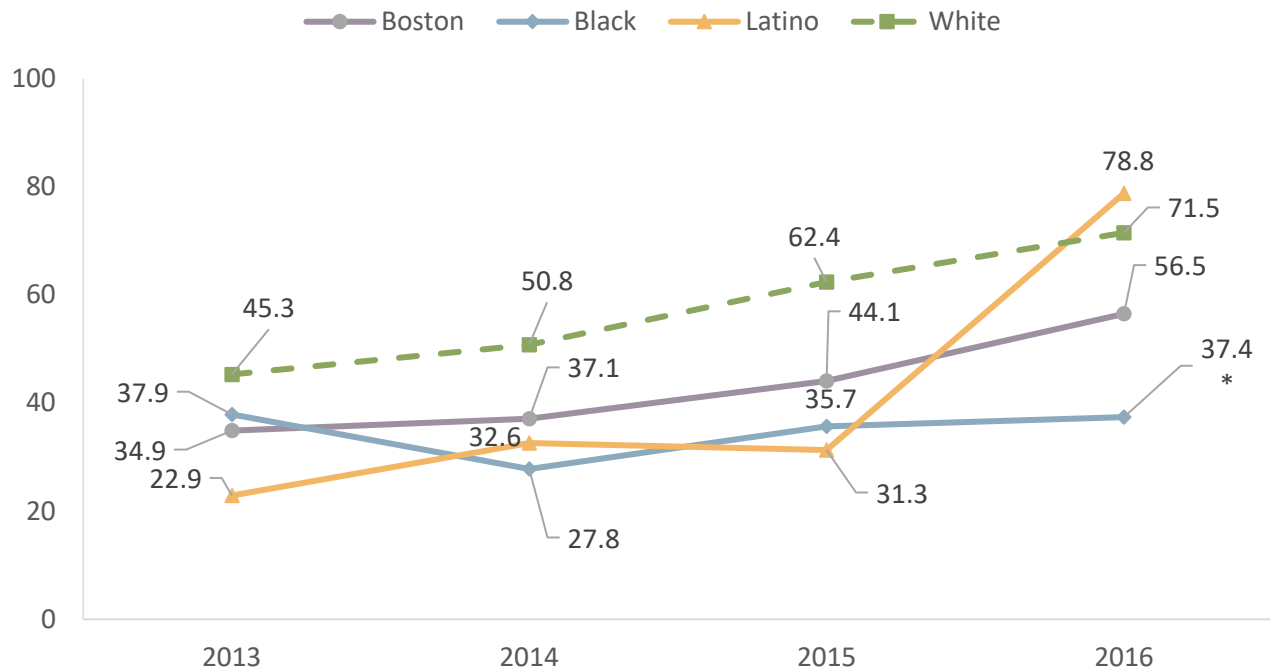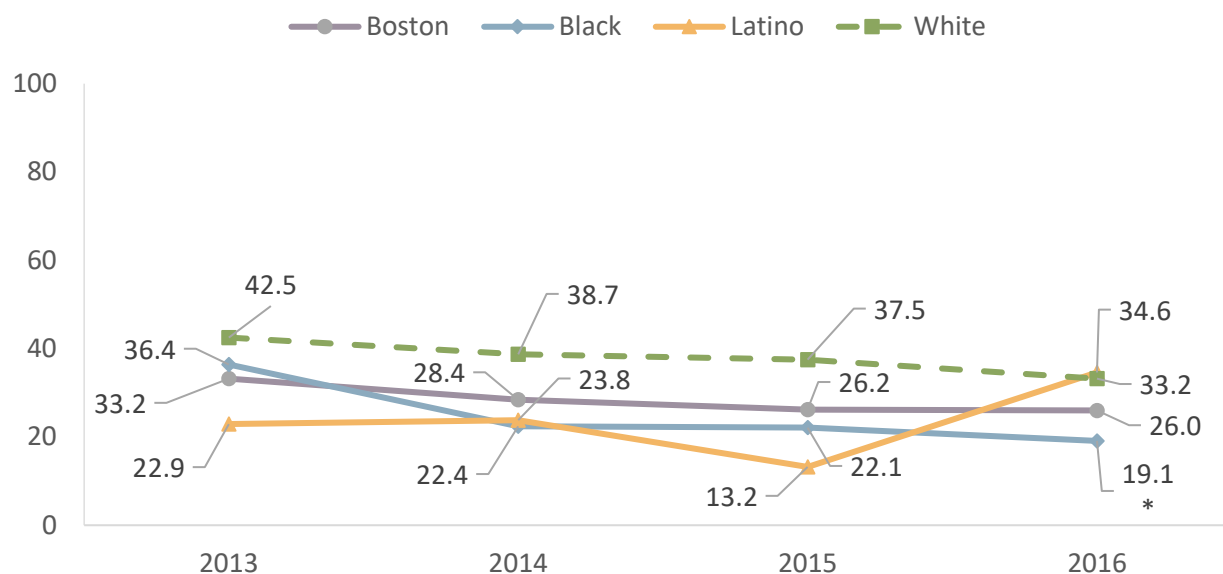DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample size for Latino for 2013, 2014, and 2015 are ≤ 20 and rate should be interpreted with caution; Data not shown for Asian due to insufficient sample size; Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time), Latino (increase over time), and White (increase over time)

Treatment Service Utilization and Barriers

Of the 100 people (4.2%) completing the Boston CHNA survey who indicated that they needed substance use treatment or services at some point, 22% reported that they could not access the substance use services that they needed. Barriers to substance use treatment was discussed by the focus group participants in recovery and a few interviewees. These participants discussed the need for more affordable inpatient and outpatient treatment options, especially for non-English speakers. Long-term support services like sober houses were identified as limited and expensive, with one key informant sharing, "*I can get someone into detox, but what we don't have enough us is a place for them to get to the next step [of sobriety].*" Focus group participants in recovery also reported that cost was a barrier to treatment. There was a perception that insurance companies only covered certain substances. One focus group participant from the South End shared, "*You have to be addicted to a certain drug to get help. My insurance only covers help to get clean from heroin.*"

Further, the need for culturally-competent treatment options was also discussed as a challenge by key informants. One illustrated these barriers by sharing, "*There is far too little access to treatment programs, and those that do exist are not linguistically and culturally competent.*" For example, shared the interviewee, it was common some cultures to be averse to group approaches to care. One explained, "*Even when the organization convinces a young person to enroll in a treatment program, that young person will leave as soon as they are asked to participate in group-based therapy because that's not something they are culturally comfortable with. If treatment programs had more bilingual and bicultural staff, they would be able to tailor programs to Asian youth and help them actually make progress in their recovery.*"

Figure 123 shows that in 2017, there were 129.1 unique substance abuse treatment admissions per 10,000 Boston residents 12 years old and over, which is significantly lower than the rate of admissions in 2011 (142.4 admissions per 10,000 Boston residents 12 years old and over).

Figure 123. Unique Substance Abuse Treatment Admission Rate, by Boston and Over Time, Age–Adjusted Rate per 10,000 Residents Aged 12+ Years, 2011–2017
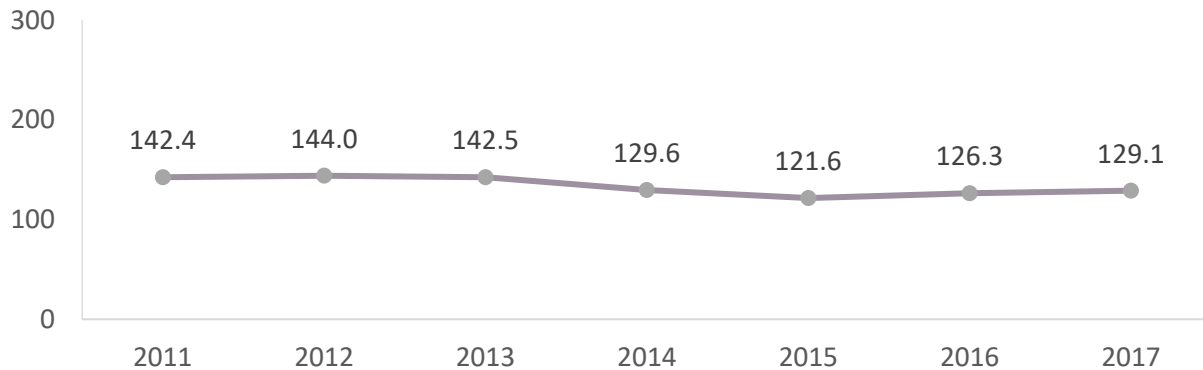
DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data represent treatment admissions for unique individuals; Change over time was statistically significant (decrease over time)

The rate of alcohol treatment admissions for Boston overall was 71.9 treatment admissions per 10,000 residents 12 years and over (Figure 124). Compared to White residents (78.1 treatment admissions per 10,000 residents 12 years and over), Black residents had a higher treatment admission rate for alcohol (91.7 treatment admissions per 10,000 residents 12 years and over), whereas Asian and Latino residents had lower treatment admission rates for alcohol (6.7 treatment admissions per 10,000 residents 12 years and over and 64.2 treatment admissions per 10,000 residents 12 years and over, respectively). The rate for females was lower compared to that for males. Over time, the rate of treatment admissions in 2017 was significantly lower than that in 2011 (data in APPENDIX I).

Figure 124. Unique Alcohol Abuse Treatment Admission Rate, by Boston and Selected Indicators, Age Adjusted Rate per 10,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2015-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data include admissions where alcohol was the primary, secondary, or tertiary drug; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

For marijuana treatment admissions, as shown in the appendix, the rate of treatment admissions for Boston was 24.5 treatment admissions per 10,000 residents 12 years and over. Similar to alcohol treatment admissions, the rate was higher for Black residents compared to White residents (42.0 treatment admissions per 10,000 residents 12 years and over and 20.5 treatment admissions per 10,000 residents 12 years and over, respectively). Over time, the rate of treatment admissions in 2017 was significantly lower than that in 2011 (see data in APPENDIX I).

Treatment admissions for heroin occurred at the rate of 67.6 treatment admissions per 10,000 residents 12 years and over in Boston, as shown in Figure 125. Unlike treatment admissions for alcohol and marijuana, when compared to White residents (87.5 treatment admissions per 10,000 residents 12 years and over), Black residents were less likely to be admitted for treatment for heroin (41.4 treatment admissions per 10,000 residents 12 years and over). Asian and Latino residents also saw lower rates of treatment admission for heroin compared to White residents.

Figure 125. Unique Heroin Abuse Treatment Admission Rate, by Boston and Selected Indicators, Age Adjusted Rate per 10,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2015-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data include admissions where heroin was the primary, secondary, or tertiary drug; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 126 shows data for unique treatment admission for prescription drug abuse by race/ethnicity and sex. Consistent with the data for heroin treatment, the admissions by race/ethnicity showed that Asian, Black, and Latino residents had lower treatment admission rates for prescription drug abuse than their White counterparts.

Figure 126. Unique Prescription Drug Abuse Treatment Admission Rate, by Boston and Selected Indicators, Age Adjusted Rate per 10,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2015-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data include admissions where Benzodiazepines, Barbiturates, tranquilizers, sedatives, and opioids excluding heroin were the primary, secondary, or tertiary drug; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Between 2011 and 2017, the rate of prescription drug abuse treatment admissions significantly decreased over time (Figure 127).

Figure 127. Unique Prescription Drug Abuse Treatment Admission Rate, by Boston and Over Time, Age Adjusted Rate per 10,000 Residents, 2011–2017
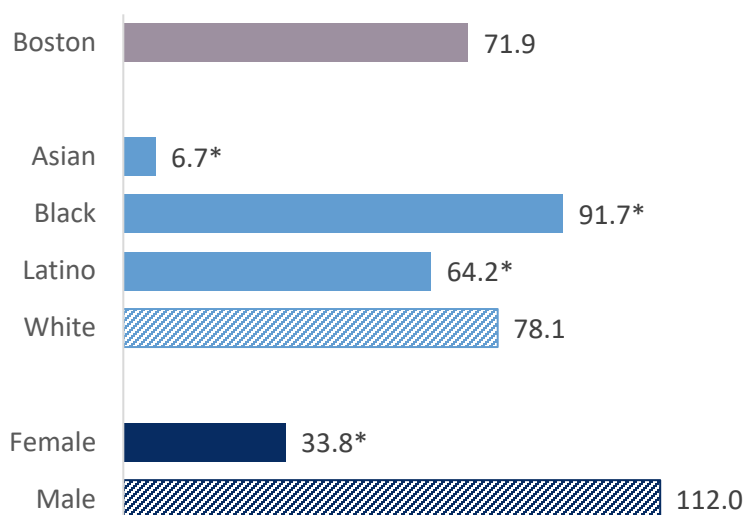

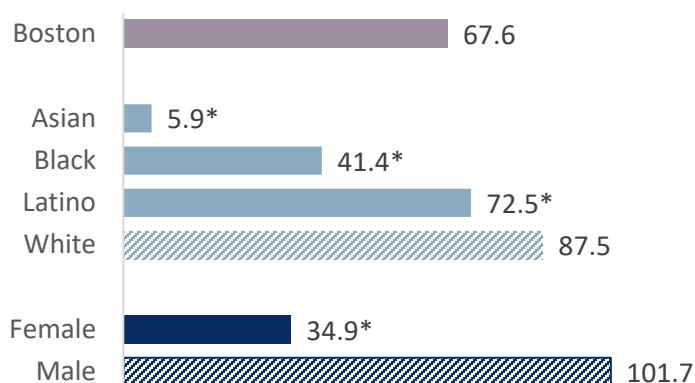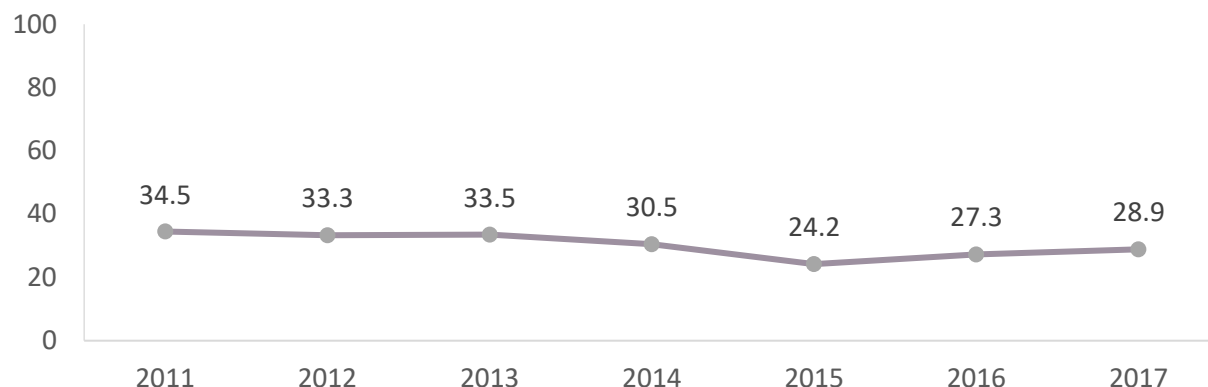DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data include admissions where benzodiazepines, barbiturates, tranquilizers, sedatives, and opioids excluding heroin were the primary, secondary, or tertiary drug; Change over time was statistically significant (decrease over time)

Violence and Trauma

Why is This Important?

Violence and trauma are important public health issues affecting physical and mental health. People can be exposed to violence in many ways: they may be victims and suffer from premature death or injuries or witness or hear about crime and violence in their community, which can lead to trauma and other mental distress and reduced quality of life.[65] Children and adolescents exposed to violence may experience behavioral problems, depression, anxiety, and post-traumatic stress disorder or show increased signs of aggression; research has also shown violence and trauma are linked to health conditions such as high blood pressure, worse cardiovascular health, immune deficiency and sleep problems.[66]

Key Findings in This Section

> "It's dangerous to walk around my neighborhood; I could be sitting on my porch and see fights, car accidents…it's just not a safe neighborhood for kids." — Focus group participant

Violence and trauma were frequent concerns reported by focus group and interview participants. Many focus group members expressed concern about personal safety in their communities, with persons of color and children noted to be disproportionately affected. One quarter of respondents to the CHNA community survey described their neighborhoods as unsafe or extremely unsafe. Black and Latino respondents were more likely than other respondents to describe their communities this way. Intimate partner violence was mentioned in focus groups and interviews, with women of color and non-English speaking immigrants identifies as particularly vulnerable. Exposure of children and youth to unhealthy relationships and violence (adverse childhood experiences) is also of concern: nearly one in five Boston adults reported experiencing one adverse experience over their lifetime, and one in six reported more than one.

Trauma, poverty and, more recently, fear of deportation and family separation is a growing issue. Bullying among youth in Boston has declined over the past few years, although currently one in ten Boston high school students reported that they have been bullied on school property over the past year or have been bullied electronically. Female and LGBTQ students are disproportionately affected by bullying.

Overall Experiences with Violence

Across geographies—violence and trauma were frequent concerns reported by focus group and interview participants. Violence can be experienced in many ways—community violence, family violence, partner violence, sexual violence, and interpersonal violence are some of the most common forms. The BBRFSS asked respondents whether they have ever experienced physical or sexual violence in their lifetime. In data aggregated across 2013-2017, 13% of Boston adults reported experiencing violence in their lifetime (Figure 128). Respondents who identified as female, 35-49 years of age, 50-65 years of age, residents of the Boston Housing Authority, renters or tenants receiving housing assistance, and LGBTQ-identified respondents were significantly more likely than their counterparts to report experiencing violence in their lifetime. By comparison, Asian residents, high school graduates, and immigrants living in the US for less than ten years were less likely to report an experience of violence in their life course. However, it should be noted that given the nature of the question, responses may be underreported overall and within some population groups.

Figure 128. Percent Adults Reporting Experiencing Violence in Lifetime, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Boston	13.0%
Asian	3.2%*
Black	13.2%
Latino	13.9%
White	13.9%
Female	17.2%*
Male	8.3%
18-34 years	9.4%
35-49 years	14.3%*
50-64 years	14.6%*
65+ years	10.6%
BHA resident	15.3%*
Renter, rental assistance	20.1%*
Renter, no assistance	14.0%*
Other housing arrangement	13.2%
Home owner	9.9%
Less than HS graduate	14.4%
HS graduate	9.0%*
Some college or more	13.9%
10 years or less in U.S.	6.8%*
More than 10 years in U.S.	8.4%*
Born in U.S.	15.7%
LGBTQ	22.5%*
Heterosexual/non-transgender	12.0%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Residents of Allston/Brighton (20%) were more likely than the rest of Boston to report experiencing violence in their lifetime, while residents in Back Bay (9%), Fenway (8%), Hyde Park (10%), and West Roxbury (8%) were less likely to report violence in their lifetime (Figure 129).

Figure 129. Percent Adults Reporting Experiencing Violence in Lifetime, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
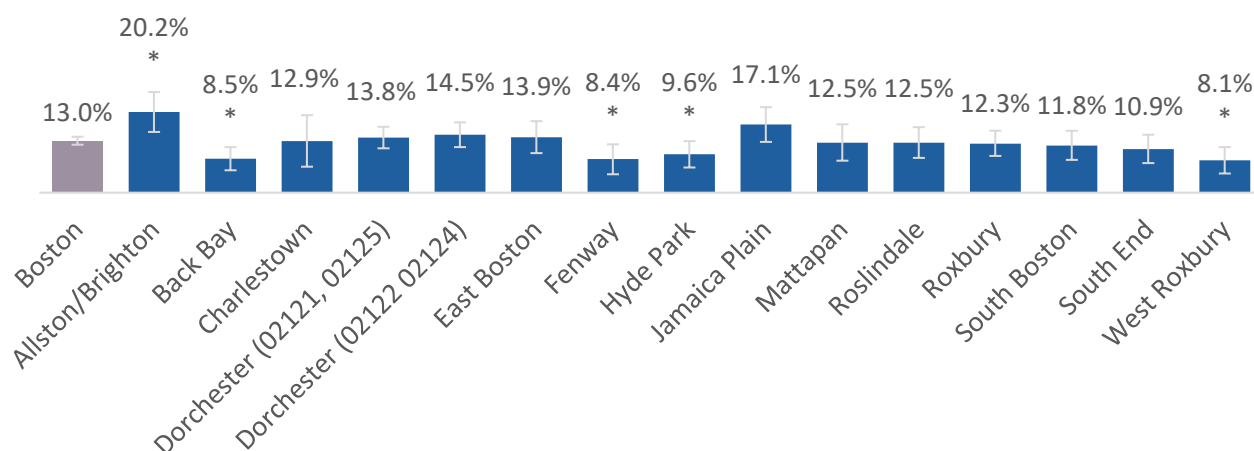
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Community Violence

Community violence was the most frequently discussed type of violence in focus groups, namely in the neighborhoods of Dorchester, Mattapan, Roxbury, Chinatown, and East Boston. English and non-English speaking residents alike reported concerns about personal safety in their communities. Participants who identified as parents commonly discussed concerns of the impacts of violence on young people. Violence-based trauma emerged as a key health issue affecting many population groups, particularly young children and communities of color. Several interview participants expressed the need to better understand how systemic issues such as racism and other forms of oppression impact trauma in communities of color.

Across all language groups, many focus group participants reported concerns about personal safety in their communities. Key informants and focus group participants specifically mentioned that children and communities of color are disproportionately impacted by violence. Other marginalized groups that were mentioned by key informant and focus group assessment participants include: LGBTQ youth—especially those who identify as transgender or non-binary; seniors; and immigrants. Further, community residents and interviewees alike stressed that community violence needs to be addressed from a lens of collective trauma. One Dorchester resident shared, "*Our community is suffering from PTSD. We need to heal these wounds...kids have to walk by places where people they loved have been killed.*"

Some LGBTQ youth who participated in focus groups described their neighborhoods as "*very violent*" with one sharing, "*It's dangerous to walk around my neighborhood; I could be sitting on my porch and see fights, car 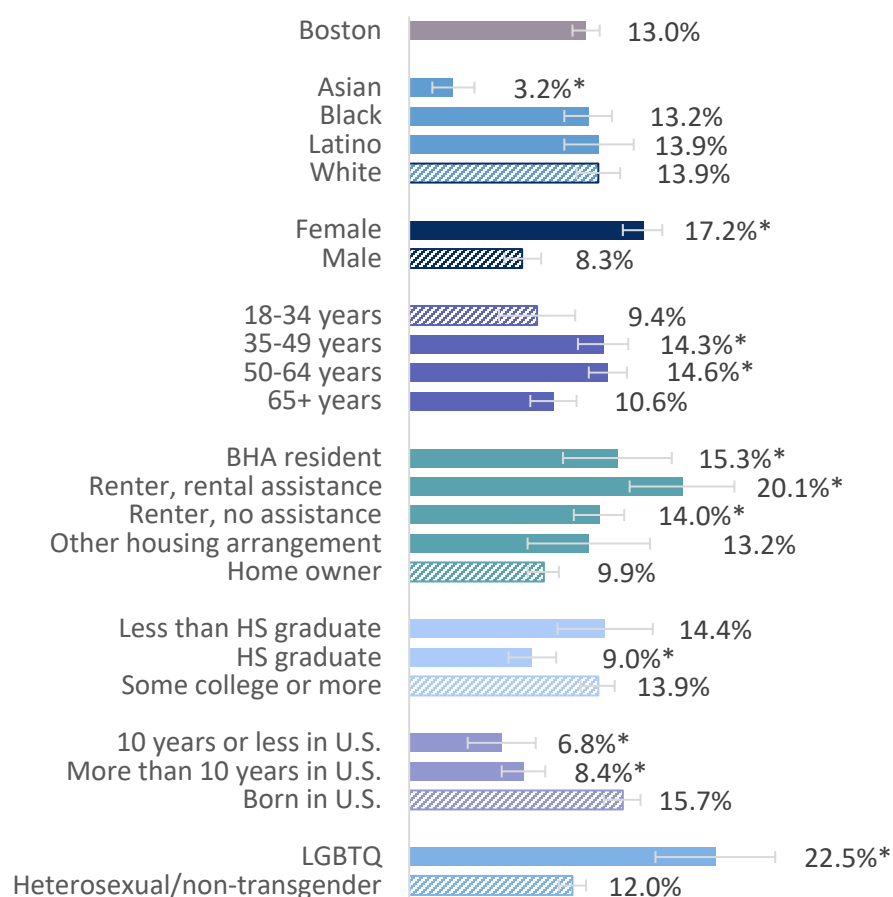accidents...it's just not a safe neighborhood for kids.*" In Chinatown, there was a perception that the proximity to homeless shelters were adding to the violence in the community. One Chinese-speaking focus group participant shared, "*The [homeless] shelters are very close to Chinatown and near the banks. Many residents are afraid to get robbed there.*"

Another focus group participant agreed and added, "*If they moved the homeless shelter that would help lower crime in our community and in the subway stations.*" Focus group participants and interviewees from Dorchester most frequently cited concerns about increasing gun violence in their communities. One key informant explained, "*A lot of families are experiencing sudden death because of gun violence; it's traumatizing and de-stabilizing to the community.*"

Some residents in East Boston reported a decrease in violence in recent years; still, East Boston was described as an area that needed more violence prevention supports. In Mattapan, Haitian focus group participants perceived that more Haitian youth were involved in gangs and the criminal justice system. One participant shared, "*Social delinquency was less in the Haitian community; now there are a lot of young Haitian men in prison.*" Other participants agreed with this sentiment and added that certain neighborhoods like Mattapan have reputations for community violence. "*Mattapan has the nickname MurderPan...even some newspapers call it that.*"

When Boston CHNA survey respondents were asked how safe from crime they considered their neighborhood to be, 25% described their neighborhood as unsafe or extremely unsafe. Survey respondents who identified as Black (40%) or Latino (37%), respondents with some college or a certificate program (39%), and parents of children younger than 18 years of age (32%) were more likely to characterize their neighborhoods as unsafe or extremely unsafe (Figure 130).

Figure 130. Percent Boston CHNA Survey Respondents Reporting Considering Their Neighborhood Unsafe or Extremely Unsafe, by All Respondents and Selected Indicators, 2019

Category	Percent
All Respondents (N=1,920)	25.0%
Asian (N=280)	16.8%
Black (N=412)	39.8%
Latino (N=432)	36.6%
White (N=668)	10.9%
Other/Two or more (N=89)	27.0%
Under 18 years (N=187)	27.3%
18-24 years (N=129)	26.4%
25-44 years (N=674)	27.8%
45-64 years (N=445)	22.7%
65+ years (N=196)	10.7%
Female (N=1,229)	25.6%
Male (N=376)	18.9%
Non-binary/transgender (N=26)	19.2%
HS graduate or less (N=452)	26.3%
Some college/certificate program (N=302)	39.1%
College graduate or more (N=831)	17.1%
Heterosexual/non-transgender (N=1,277)	24.4%
LGBTQ (N=228)	19.3%
Parent of child under 18 (N=500)	32.0%
Not parent of child under 18 (N=1,137)	21.1%
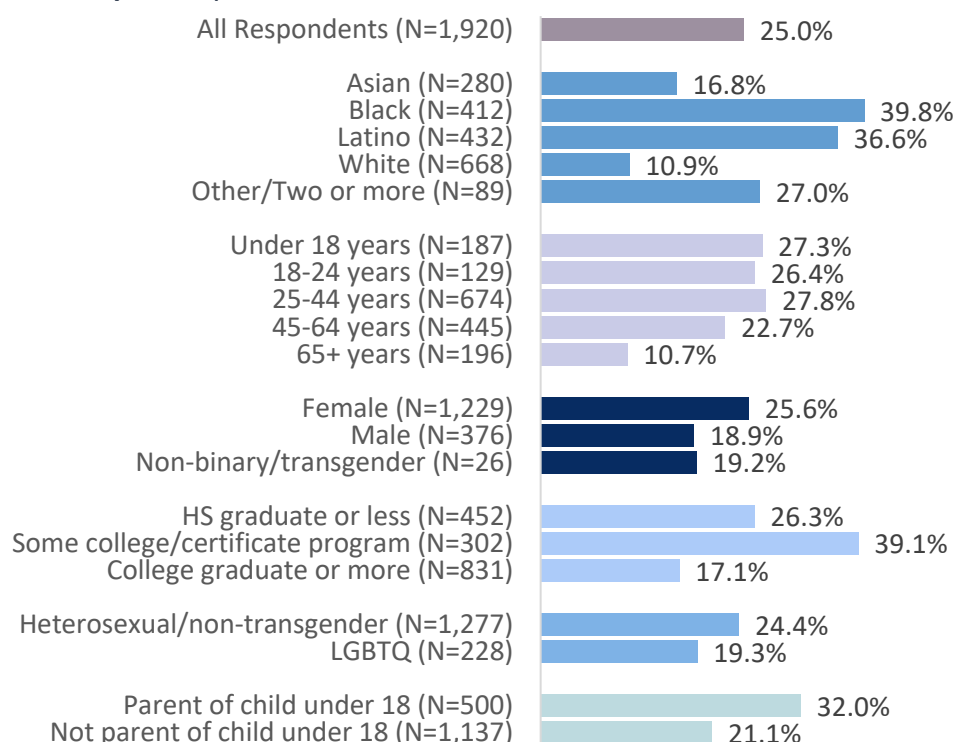
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups (p < 0.05): race/ethnicity, age, gender identity, educational attainment, and parent status

Approximately half of respondents from Roxbury (50%), Mattapan (49%), and Dorchester (45%) described their neighborhood as unsafe or extremely unsafe, a prevalence that was more than double that all survey respondents (25%) (Figure 131).

Figure 131. Percent Boston CHNA Survey Respondents Reporting Considering Their Neighborhood Unsafe or Extremely Unsafe, by All Respondents and Selected Neighborhoods, 2019
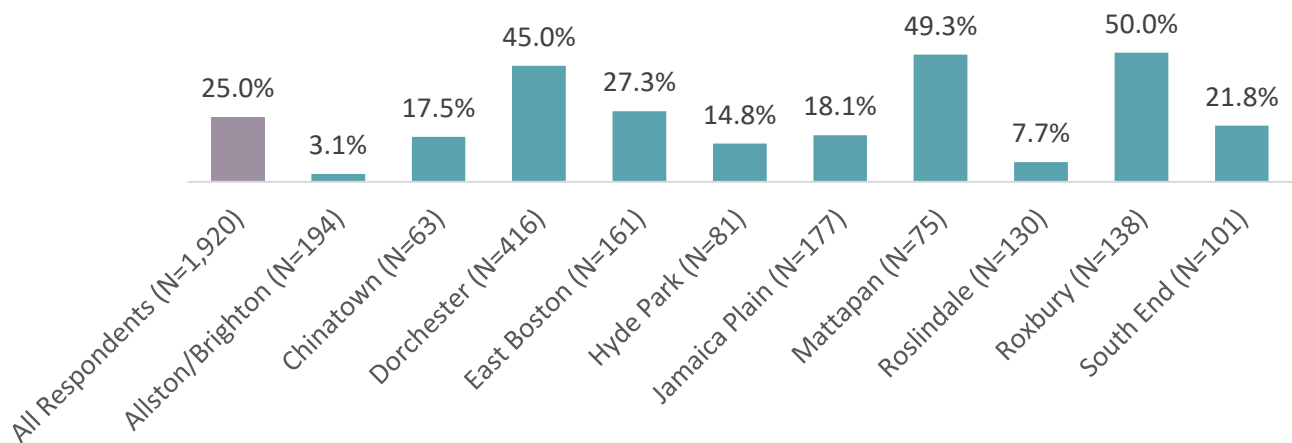
DATA SOURCE: Boston CHNA Community Survey, 2019

One in five Boston CHNA survey respondents described gunshots in the neighborhood (22%) and feeling unsafe when along on the street at night (19%) as serious problems (Figure 132). Almost half of respondents reported as a minor or serious problem feeling unsafe in public spaces in their neighborhood (49%) or while riding a bike in their neighborhood (46%).

Figure 132. Percent Boston CHNA Survey Respondents Reporting Perceptions of Safety Issues in Past 12 Months, 2019
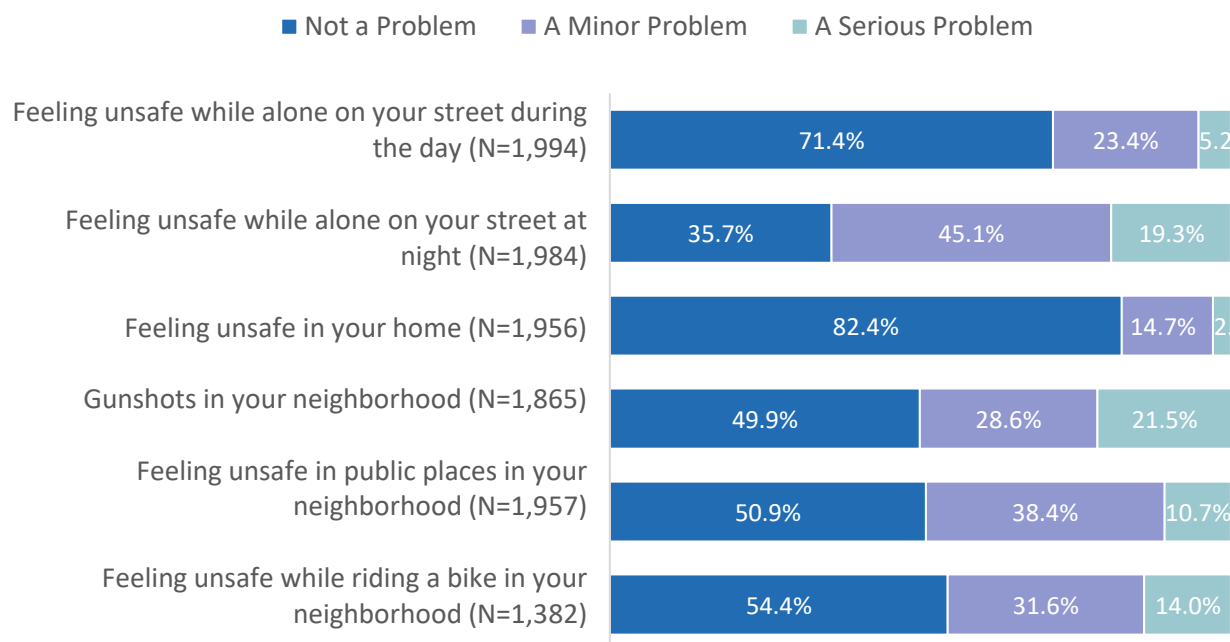
■ Not a Problem ■ A Minor Problem ■ A Serious Problem

	Not a Problem	A Minor Problem	A Serious Problem
Feeling unsafe while alone on your street during the day (N=1,994)	71.4%	23.4%	5.2
Feeling unsafe while alone on your street at night (N=1,984)	35.7%	45.1%	19.3%
Feeling unsafe in your home (N=1,956)	82.4%	14.7%	2
Gunshots in your neighborhood (N=1,865)	49.9%	28.6%	21.5%
Feeling unsafe in public places in your neighborhood (N=1,957)	50.9%	38.4%	10.7%
Feeling unsafe while riding a bike in your neighborhood (N=1,382)	54.4%	31.6%	14.0%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "not applicable/don't know"

More detailed data on these questions by different sub-populations can be found in APPENDIX I. Overall, CHNA survey respondents who identified as Latino, younger respondents, parents of young children, and respondents with less than a college education were more likely to report as a serious problem feeling unsafe while alone on their street at night. Additionally, female respondents were more likely than male respondents to cite feeling unsafe while alone on their street at night as a minor or serious.

Boston CHNA survey respondents from Roxbury (31%), Dorchester (28%) were more likely than residents in other neighborhoods to report feeling unsafe when alone in their street at night as a serious problem. Respondents from Mattapan (43%) and Dorchester (36%) were more likely to cite gunshots in their neighborhood over the past year as a serious problem compared to respondents in other Boston neighborhoods.

Consistent with the patterns of inequities across Boston, firearm injuries—emergency department visits and deaths—significantly differs by neighborhood. Dorchester (02121, 02125) and (02122, 02124), Mattapan, Roxbury, and South End had significantly higher rates of nonfatal firearm related emergency department visits compared to the rest of Boston (Figure 133). As shown in Figure 134, the homicide by firearm rate was highest in Dorchester (13.7 and 10.6 homicides per 100,000 residents), Mattapan (9.4 homicides per 100,000 residents), and Roxbury (7.3 homicides per 100,000 residents) in 2011-2016, a rate that was significantly higher than the rest of Boston. The homicide by firearm rate in Allston/Brighton (0.8 homicides per 100,000 residents) was significantly lower than the rest of Boston.

Figure 133. Nonfatal Firearm Related Emergency Department Visit Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2013–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2013-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Back Bay, Fenway, Roslindale, and South Boston are ≤ 20 and rates should be interpreted with caution; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 134. Homicide by Firearm Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2011–2016 Combined
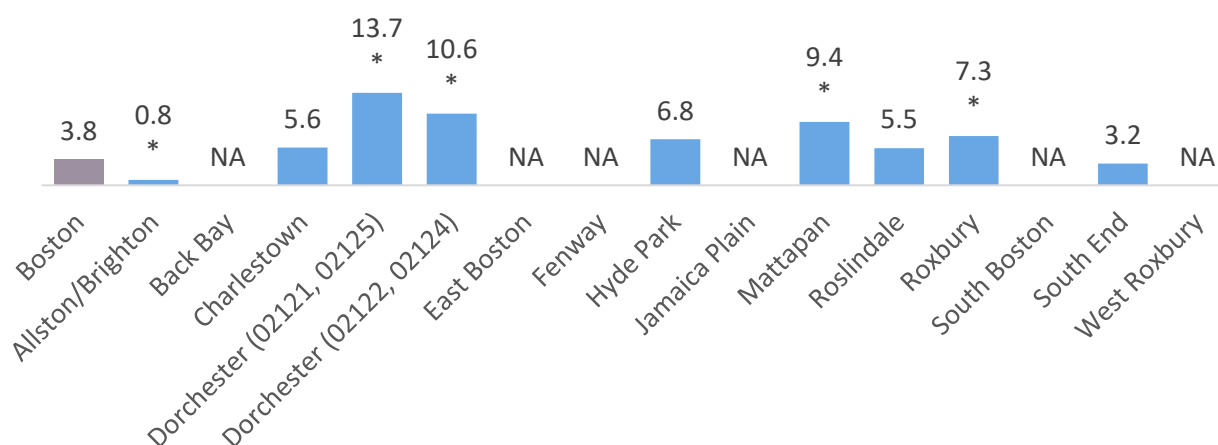
DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2016 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where estimate was significantly different compared to the rest of Boston (p <0.05); Sample sizes for Allston/Brighton, Charlestown, Hyde Park, Mattapan, Roslindale, and South End were < 20 and rates should be interpreted with caution; NA denotes where data are not presented due to insufficient sample size

The homicide by firearm rate for Black (30.1 homicides per 100,000 residents) and Latino (9.1 homicides per 100,000 residents) males was significantly higher than that for White males in 2011-2016 (Figure 135).

Figure 135. Homicide by Firearm Rate, by Boston and Race/Ethnicity by Sex, Age–Adjusted Rate per 100,000 Residents, 2011–2016 Combined
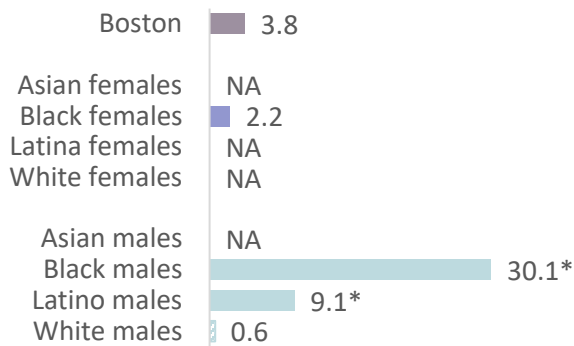
Boston	3.8
Asian females	NA
Black females	2.2
Latina females	NA
White females	NA
Asian males	NA
Black males	30.1*
Latino males	9.1*
White males	0.6

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2016 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Sample sizes for Black females and White males were < 20 and rates should be interpreted with caution; NA denotes where data are not presented due to insufficient sample size

Community Policing

When discussing community violence, focus group and interview participants also commented about the police and the various approaches they took in their neighborhoods. There were mixed perceptions of relations with law enforcement among focus group and interview participants. Some interviewees and focus group participants—namely those from communities of color—perceived that their communities were being overpoliced. One key informant summarized, *"There is a history of over policing and police violence among people of color in [Boston]."* Further, some key informants spoke of the increase of anti-police sentiments across the country and perceived that these sentiments made positive community-police relations a challenge.

Focus group participants in East Boston reported an increase in law enforcement presence in their neighborhood, which they mentioned as a strength and some attributed to declining levels of violence. They shared, *"There used to be a lot of violence in the community, but it has been better in the last two years. The police have been doing sweeps in the neighborhoods and have caught a lot of people, mainly adolescents."* On the contrary, key informants representing Chinatown perceived a decrease presence of law enforcement, one sharing, *"There are not as many BPD officers walking through the [Chinatown] community on food as there use to be, interacting face-to-face with community members. Now, officers tend to drive around instead of walking…"* It was noted by some key informants that the Boston Police Department has made positive strides to improve community relations by focusing on youth engagement, hosting community dialogues, and strengthening partnerships across sectors.

Interpersonal and Domestic Violence

The prevalence of interpersonal violence—a pattern or behavioral used to establish power and control over another person through fear and intimidation, often including the threat or use of violence—was discussed by a few key informants and by some focus group participants from

Chinatown, East Boston, and Mattapan. One key informant explained, "*There are plenty of families who are dealing with abusive relationships...there is evidence of abuse, domestic violence, drug addiction.*" Women of color and non-English speaking immigrants were identified as especially vulnerable to interpersonal and domestic violence due to cultural or linguistic barriers. One resident from Mattapan shared, "*Sometimes in the Haitian community, we are scared to address abuse. There needs to be more education about women's rights to address domestic violence; not only the physical, but the verbal and mental.*" The need for more service providers who were bi-lingual was described as a priority among these groups. One key informant explained, "*[I] would like to see [health care institutions] to employ more Asian people, especially immigrants and bilingual people, not only as medical providers, but as administrative and other staff, like custodians, greeters, accountants, security personnel, food service workers, technicians, etc.*"

Further, there was a perception that it was common for young people to be exposed to unhealthy relationships. One key informant shared, "*Men are seen as having dominion over their home and family, and women are expected to defer to his wishes and seek his permission to do certain things; youth today see that and therefore believe it's right for men to be in charge and for women to obey. This is why dating violence and domestic violence continues to be a challenge in Chinatown, and why it's not considered a big deal.*" Another non-English focus group participant in East Boston expressed concerns related to domestic violence in immigrant communities, sharing, "*Marriage and divorce are very difficult- there are a lot of people marrying because of necessity, even if it's not the healthiest situation.*"

There is very little quantitative data available on interpersonal or domestic violence. In 2018, the Boston Police Department served a total of 1,921 restraining orders. Table 25 shows the distribution of these by neighborhood.

Table 25. Number of Restraining Orders Served by Boston Police Department, by BPD District, 2018

	Area	Number
A-1	Downtown	19
A-7	East Boston	66
A-15	Charlestown	2
B-2	Roxbury	386
B-3	Mattapan	368
C-6	South Boston	237
C-11	Dorchester	200
D-4	South End	113
D-14	Brighton	182
E-5	West Roxbury	146
E-13	Jamaica Plain	79
E-18	Hyde Park	123

DATA SOURCE: Courtesy of Boston Police Department, 2018

Adverse Childhood Experiences (ACEs)

Among focus group and interview participants, children were identified as being the most vulnerable to violence exposure, especially for younger children. One key informant summarized, *"You have 1st graders showing up to school hungry, sometimes experience violence in the home; students apologizing for being late because there was a killing and their street was on lock down. They're dysregulated and traumatized."*

There was a perception among key informants and focus group participants who identified as parents that there is a lack of resources for children who have experienced traumatic events. This was especially prominent in focus groups in Dorchester, who cited inequitable social emotional supports in lower income schools of color. One shared, *"We need for therapy is schools. When the marathon bomb happened, they blocked off all the streets until they caught him and after, all those kids got counseling. But that type of response only happens when you're in White schools. Even when the student was shot in front of the [Dorchester] high school in front of hundreds of students they didn't bring in any therapists and kids are walking by the scene every single day being reminded of it."*

In 2017, nearly one in five Boston adults reported experiencing one adverse childhood experience (19%) over their life time (Figure 136). Nearly one in six Boston residents reported more than one adverse childhood experience (16%).

Figure 136. Percent Adults Reporting Adverse Childhood Experiences (ACEs) For Themselves, by Boston, 2017
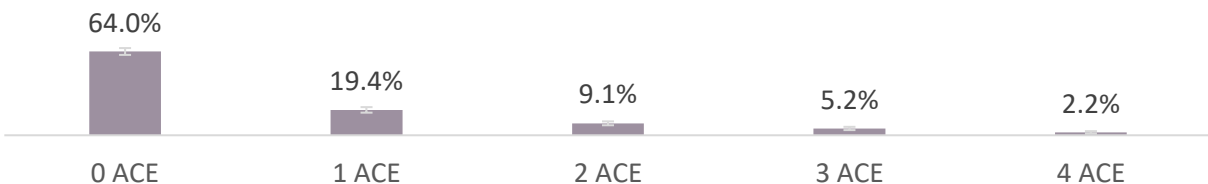
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: The Adverse Childhood Experiences (ACE) questions were asked of Boston adult residents to assess associations between childhood maltreatment, and health and well-being later in life; In 2017, residents were asked 4 of the 10 questions from the original ACE module created by the Center for Disease Control (CDC); Residents participating in the survey were asked: 1) if they ever lived with a caregiver who was depressed, mentally ill, or suicidal; 2) if they ever lived with a caregiver who was a problem drinker or alcoholic, or someone who abused drugs 3) if their parents were ever physically violent towards each other and 4) if they ever lived with a caregiver who had been in prison.

In 2013-2017, one in six Boston adults (17%) reported having lived with a caregiver with a mental illness as a child (Figure 137). Adults who identified as female, renters receiving assistance, renters not receiving assistance, and LGBTQ respondents were significantly more likely than their counterparts to report having lived with a caregiver with a mental illness during their childhood.

Figure 137. Percent Adults Reporting Having Lived with a Caregiver with Mental Illness as a Child (ACE), by Boston and Selected Indicators, 2013, 2015, 2017 Combined

Category	Percent
Boston	16.6%
Asian	6.5%*
Black	12.8%*
Latino	14.1%*
White	21.3%
Female	18.9%*
Male	14.1%
BHA resident	14.7%
Renter, rental assistance	21.9%*
Renter, no assistance	18.2%*
Other housing arrangement	14.5%
Home owner	15.3%
Less than HS graduate	12.9%*
HS graduate	14.5%*
Some college or more	18.1%
10 years or less in U.S.	5.5%*
More than 10 years in U.S.	8.9%*
Born in U.S.	21.3%
LGBTQ	32.3%*
Heterosexual/non-transgender	15.1%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Nearly one-quarter of residents of Allston/Brighton (24%) reported living with a caregiver with a mental illness as a child, a prevalence that significantly exceeded the rest of Boston (Figure 138). Residents in Fenway (10%) were significantly less likely to report living with a caregiver with a mental illness as a child.

Figure 138. Percent Adults Reporting Having Lived with a Caregiver with Mental Illness as a Child (ACE), by Boston and Neighborhood, 2013, 2015, 2017 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

As shown in Figure 139, 18% of Boston adults reported having lived with a caregiver with substance misuse. In 2013-2017, adults who identified as renters, LGBTQ, earning <$25,000, or out of work were significantly more likely to report having lived with a caregiver with substance misuse compared to their counterparts.

Figure 139. Percent Adults Reporting Having Lived with a Caregiver with Substance Misuse as a Child (ACE), by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

As shown in Figure 140, approximately one in six Boston adults (17%) reported having lived with adults who physically abused each other when they were children. Reports of living in environments during childhood where adults abused each other were significantly more common among adults who identified as Black or Latino, Boston Housing Authority residents, renters, adults with a high school education or less, LGBTQ adults, residents earning <$25,000, and adults who were out of work compared to their counterparts in 2013-2017.

Figure 140. Percent Adults Reporting Having Lived with Adults who Physically Abused Each Other as a Child (ACE), by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

	Percent
Boston	16.9%
Asian	15.2%
Black	19.8%*
Latino	20.3%*
White	14.7%
BHA resident	25.0%*
Renter, rental assistance	24.8%*
Renter, no assistance	18.7%*
Other housing arrangement	14.4%
Home owner	12.1%
Less than HS graduate	22.6%*
HS graduate	18.6%*
Some college or more	15.3%
LGBTQ	24.2%*
Heterosexual/non-transgender	16.2%
Less than $25,000	22.7%*
$25,000-$49,999	18.1%*
$50,000 or more	13.4%
Employed	16.0%
Out of Work	24.1%*
Other	17.1%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

In 2013-2017, one-quarter of adults in Dorchester (02122, 02124; 26%) reported having lived with adults who physically abused each other, a prevalence that exceeded the rest of Boston (Figure 141). Adults in Back Bay (10%) and Roxbury (10%) were significantly less likely than residents across Boston to report living with adults who physically abused each other during their childhood.

Figure 141. Percent Adults Reporting Having Lived with Adults who Physically Abused Each Other as a Child (ACE), by Boston and Neighborhood, 2013, 2015, and 2017 Combined
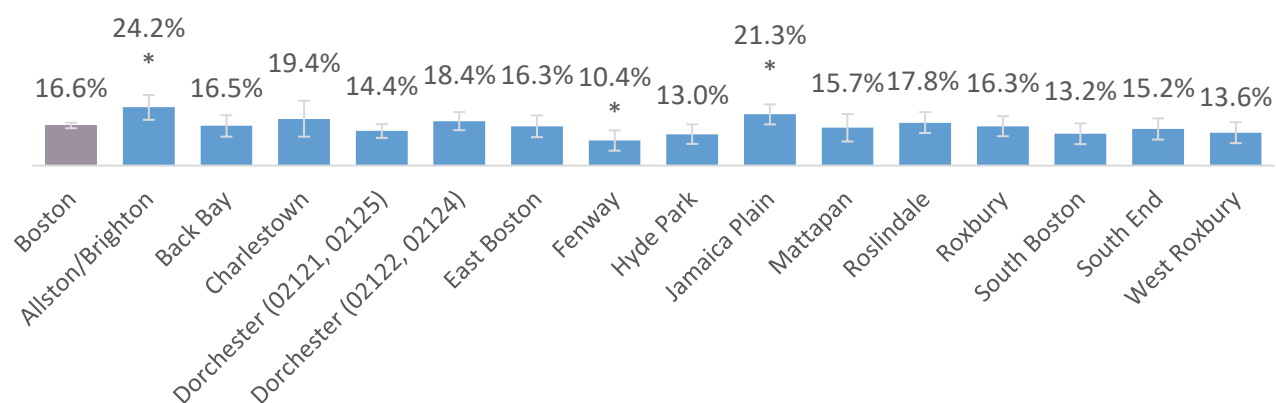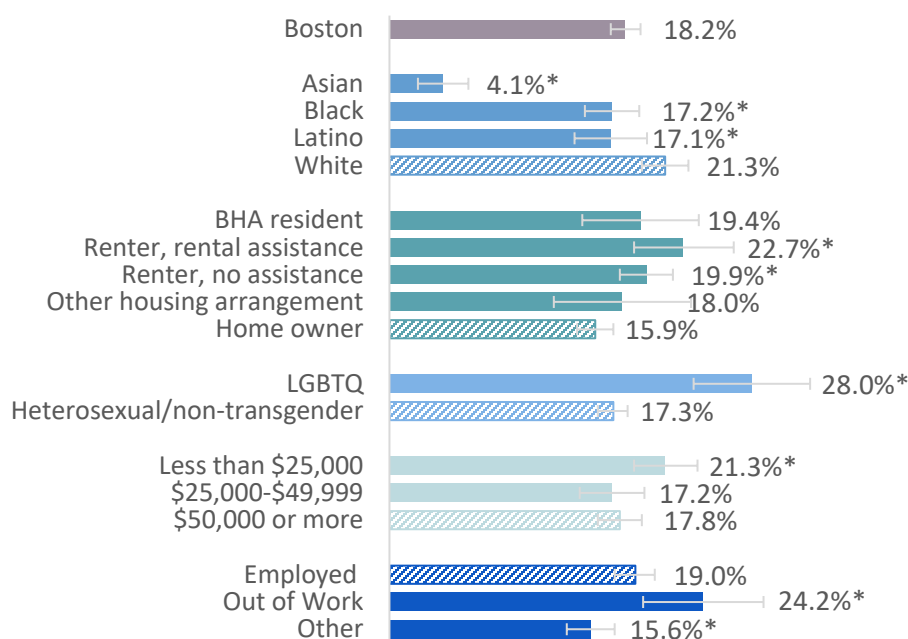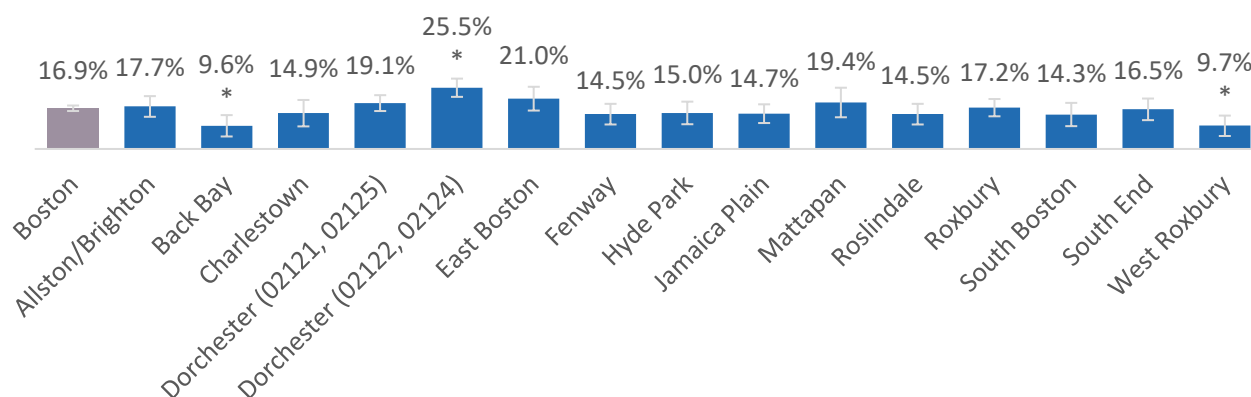

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

In 2017, 8% of Boston adults reported having lived with someone who had been in prison during their childhood (Figure 142). Black adults (12%), adults living in Boston Housing Authority units (12%), renters receiving rental assistance (13%), adults with less than a high school education (13%), and adults earning <$25,000 (12%) were significantly more likely than their peers to have lived with someone who had been imprisoned during their childhood.

Figure 142. Percent Adults Reporting Having Lived with Someone Who Had Been in Prison (ACE), by Boston and Selected Indicators, 2017
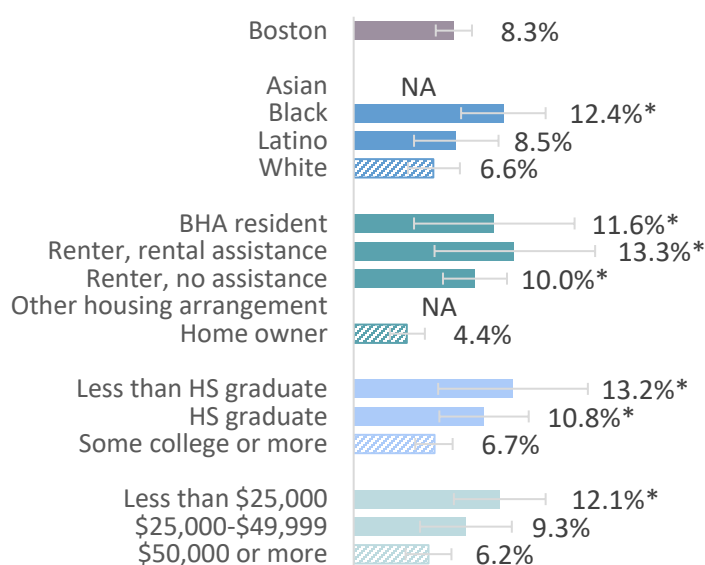
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval; NA denotes where data are suppressed due to insufficient sample size

When asked about adverse childhood experiences, 35% of Boston CHNA survey respondents reported experiencing financial strife somewhat often or very often during their childhood (Figure 143). One in six respondents (17%) reported experiencing a parental divorce or separation during childhood.

Figure 143. Percent Boston CHNA Survey Respondents Reporting Their Family/Child Experiencing Adverse Childhood Experiences (ACEs) Somewhat Often or Very Often, 2019
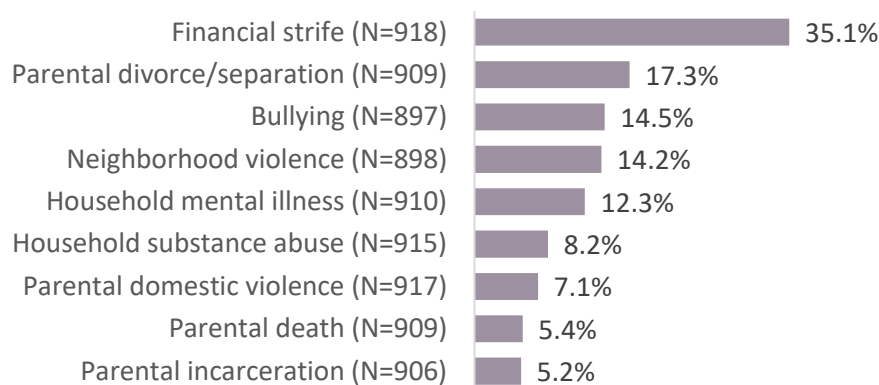
Financial strife (N=918)	35.1%
Parental divorce/separation (N=909)	17.3%
Bullying (N=897)	14.5%
Neighborhood violence (N=898)	14.2%
Household mental illness (N=910)	12.3%
Household substance abuse (N=915)	8.2%
Parental domestic violence (N=917)	7.1%
Parental death (N=909)	5.4%
Parental incarceration (N=906)	5.2%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "don't know"

Bullying

Approximately one in ten Boston high school students (12%) reported being bullied on school property in the past year (Figure 144). Female students (13%) and LGBTQ students (18%) were significantly more likely to report an experience of bullying at school, while Asian students (8%) were significantly less likely to report an experience of being bullied at school in the past year.

Figure 144. Percent Boston Public High School Youth Reporting Being Bullied on School Property in the Past Year, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Boston	11.7%
Asian	7.9%*
Black	11.8%
Latino	11.6%
White	13.8%
Female	12.7%*
Male	10.5%
LGBTQ	18.0%*
Heterosexual/non-transgender	10.7%
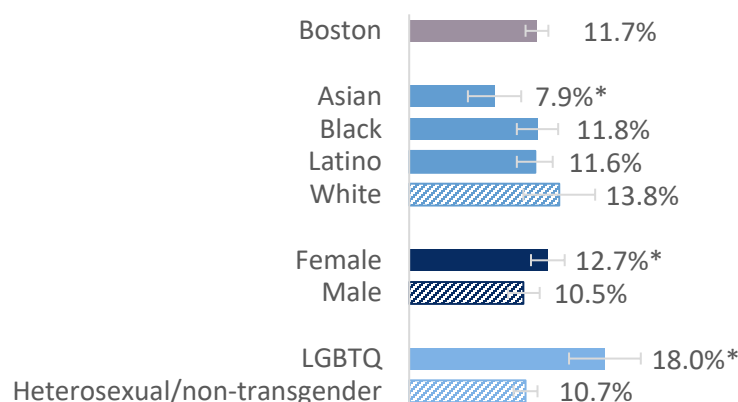
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months they had been bullied on school property; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

As shown in Figure 145, the prevalence of reports of being bullied on school property declined significantly from 14% in 2011 to 11% in 2017.

Figure 145. Percent Boston Public High School Youth Reporting Being Bullied on School Property in the Past Year, by Boston and Over Time, 2011–2017
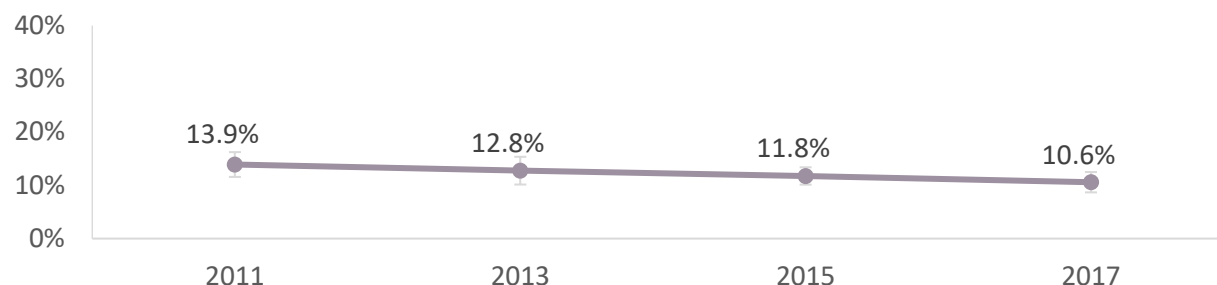
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months they had been bullied on school property; Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

In 2013-2017, 9% of Boston high school students reported being bullied electronically in the past year (Figure 146). Female (11%) and LGBTQ students (16%) were significantly more likely than their counterparts to report experiences of electronic bullying. Female students of color were significantly less likely to report electronic bullying than White female students.

Figure 146. Percent Boston Public High School Youth Reporting Being Electronically Bullied in the Past Year, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months, they had been electronically bullied (including through texting, Instagram, Facebook, or other social media); Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

In 2013-2017, 7% of Boston high school students reported being bullied in the past year because of their sexual orientation (Figure 147). Nearly one in five (19%) LGBTQ high school students reported this form of bullying, which was significantly higher than bullying due to sexual orientation reported by their straight and non-transgender peers (5%) over the same period. Rates for this indicator have remained steady over the last several years (APPENDIX I).

Figure 147. Percent Boston Public High School Youth Reporting Being Bullied Because of Sexual Orientation in the Past Year, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined
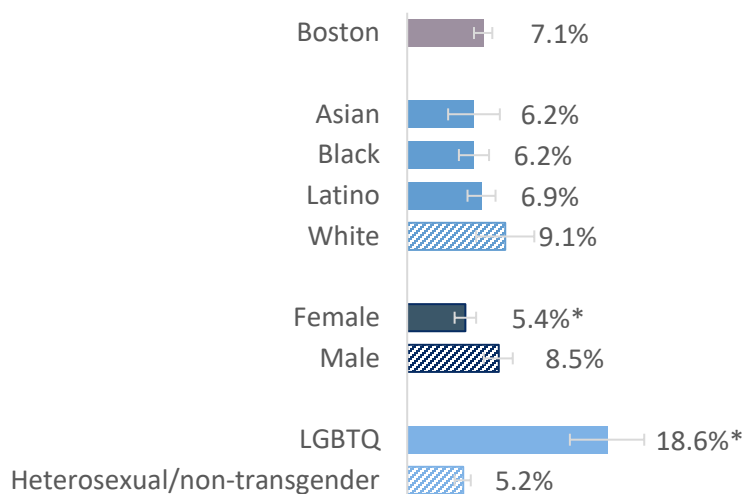
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months, they had been the victim of teasing or name calling because someone thought they were gay, lesbian, or bisexual; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Trauma

The impacts of trauma greatly affect health outcomes for youth and adults. Different facets of trauma were described by assessment participants. For example, some key informants discussed the trauma of poverty that results in chronic stress and post-traumatic stress disorder. The topic of intergenerational trauma was also described as a concern by key informants with experience in early childhood education. These interviewees explained that trauma is cyclical, with one sharing, *"trauma is generational; parents and their parents before them are living in unstable housing, are being evicted…".* Further, numerous key informants mentioned the trauma experienced by immigrant children and their families, and cited fear of deportation and family separation.

A common theme that emerged in focus group and interviews was the need to integrate more trauma-informed care in health services and early childhood education. Focus group participants who identified as survivors of violence expressed the need for more accessible services, sharing, *"We need trauma-informed classes that are in our neighborhoods [Dorchester]. I want my kids to know that their feelings are valid and real…that it's okay to be scared."* Suggestions were made by key informants to invest in community-driven solutions that meaningfully engage young people. According to key informants, meaningful engagement of youth needs to happen on a structural level, one sharing: *"We need to talk to young people.*

There are times that we consider meaningful youth engagement where we let them pick the color of a t-shirt. If we want to meaningfully engage youth in anti-violence work, we need to hold meetings at times when they're available, pay them for their expertise, and commit resources for them in our budgets."

Widening the trauma-informed care lens by focusing on familial responses to trauma emerged as a theme from key informant interviews. Other suggestions included strengthening the foundation of trust with community residents by addressing trauma from a community-driven, grassroots, perspective. One key informant shared, *"We need to get people involved in in the process of developing strategies to address trauma, using the consumer model of asking people what they need; approaching one household at a time."* There were also suggestions to expand neighborhood trauma teams and strengthen partnerships that bring interdisciplinary groups together. One interviewee suggested creating a community review board before implementing new initiatives, a *"population version of an IRB [institutional review board]."*

Institutional Racism

Institutional racism—or the systematic distribution of resources, power, and opportunity in our society to the benefit of people who are White and the exclusion of people of color—was described as a priority by several key informants and focus group participants. As one interviewee summarized, *"We see things in communities of color like over policing, greater system involvement, more suspensions, the school to prison pipeline...racism shows up in all of these insidious ways."* Similarly, one focus group participant in Dorchester shared, *"If the rules are made by White people **for** White people, it doesn't matter who is elected to represent us; nothing will change for us [Black residents]."*

Key informants identified a need for more structural commitments to anti-racism work including investments in staff training, sharing, *"We need to make anti-racism work part of what we do...it matters. We need to have all levels of folks engaging in these conversations."* One example that was identified as a meaningful structural commitment to anti-racism was the Boston Public Health Commission's mandatory anti-racism training for employees. One key informant shared, *"I think we continue to need an honest reckoning with the impact that systems-based violence and racism going on; accepting the personal roles we play as White people. I don't think we have the tools or resources to address system-based violence and racism in a real and concrete actionable way."*

Maternal and Child Health

Why is This Important?

The health and well-being of mothers, infants, and children are important indicators of community health. Their well-being determines the health of the next generation and can help predict future public health challenges for families, communities, and the health care system.[67] Understanding the current status of and disparities within infant mortality rates, low birthweight and preterm births, and access to prenatal care, is important to predict infant survival, child development, and well-being as well as potential health care resources needed and costs of care.[68] Infants born prematurely, for example, are at risk for neurological disabilities, respiratory conditions, or developmental delays.[69]

Key Findings in This Section

> "People are always working and giving all of their money to child care. I'm working my life away to pay someone else to take care of my children." — Focus group participant

Quantitative data indicate that the overall birth rate in Boston has significantly declined for women 15-44 years old since 2011 to 41.6 births per 1,000 female residents in 2017. However, current birth rates are significantly different by neighborhood with Hyde Park, Charlestown, Roslindale, Mattapan, East Boston, Dorchester, and West Roxbury were neighborhoods having significantly higher birth rates. Relative to other cities in the United States, rates of infant mortality are low and have been relatively stable over time but are higher in some neighborhoods. Rates of infants with low birthweight and preterm births—both important risk factors for infants—are less than 10% and have generally remained steady from 2011-2017. However, rates for both are significantly higher among Black and Latino mothers. Smoking among pregnant women, another risk factor for poorer birth outcomes, has also declined in recent years. Access to prenatal care has improved over time, and currently more than eight in ten mothers in Boston receive adequate or adequate plus prenatal care. However, Asian, Black, and Latino mothers are significantly less likely than White mothers to receive adequate or adequate plus prenatal care. Focus group members and interviewees tended to discuss maternal and child health in the context of economics and parenting concerns. Childcare was frequently discussed, with expensive or inconvenient childcare, long waitlists, and lack of summer childcare as primary issues. Difficulty paying for childcare was also an issue for respondents to the Boston CHNA community survey.

Perceptions of Parenting and Child Health

It was not common for focus group or interview participants to name maternal or child health conditions, per se, as a top concern. Instead, discussions around this topic centered on the economic concerns about raising a family, financial costs of child care, and appropriate parent practices. Mothers from East Boston who participated in focus groups specifically described the challenging demands of raising children and reported that some women are pressured to conceive even if it is not in their best interest. One participant shared, *"I know a woman who has 3 kids and is barely able to get by, but her husband wants more kids and she doesn't. It's easy for them to say but it's not their lives and body they're sacrificing."*

A common theme that emerged among focus group with parents—many of whom identified as single mothers—was the need for more supports to learn positive parenting skills. Some attributed the demands of working long hours as interfering with a parent's ability to spend quality time with their children. Participants indicated that lack of time often results in behavioral issues in children. One parent summarized, *"Families are so focused on working to provide for their kids, but what kids really need is time with their parents."*

Discipline practices were also discussed in focus group groups, with some participants indicating that cultural norms in parenting differ among population groups. For example, focus group participants in Dorchester expressed the need to break generational practices that some perceived as detrimental to children. One shared, *"Everything I learned as a parent I learned*

from other women and it wasn't always right. Now I'm finally figure out how to be a good parent but my youngest is 16 now. They're gone through so much stuff before I figured out what it means to be a good parent." Immigrant parents in East Boston, Mattapan, and Allston/Brighton described cultural differences in parenting between generations that they perceived as often creating tension between children and parents. One focus group participant shared, *"We come from different cultures and in America it's different. American culture doesn't emphasize respecting elders or devotion to the group; it's all about the individual doing whatever they want with no consequence."* Another parent agreed and expanded, *"We would have never spoken to our parents the way our kids speak to us; my daughter says she's just expressing herself, but that behavior is not okay in my country."*

Access and Barriers to Childcare

Surveillance data on the availability and access to child care are scant in Boston. To address this gap, the City of Boston is in the process of collecting data through an optional survey on the 2019 city census on residents' language, disability access, child status, and current situation and barriers to child care for children five years old and younger.

For low-income working families, the cost of childcare was described as a substantial barrier to financial security and employment opportunities, especially for single parents. One interviewee summarized, *"The availability and affordability of childcare, especially for single parents where the vast majority are female-headed households, is almost impossible."* Focus group participants in East Boston and Dorchester described the need to work multiple jobs in order to afford childcare, which impacted their ability to be an engaged in their child's life. One mother explained*, "People are always working and giving all of their money to child care. I'm working my life away to pay someone else to take care of my children."* Key informants reported that children ages 0-5 were especially vulnerable to the long-standing impacts of poverty. One shared, *"Young children 0-5 are the most vulnerable in the city. With [poverty] comes trauma related issues just by virtue of their families being in a low- or lower-income status."* Among Boston CHNA survey respondents, nearly one-quarter (23.1%) of parents of children under 18 years old indicated that they had trouble paying for child care.

Unaffordable and inconvenient childcare was mentioned as a significant concern amongst focus group participants. As one focus group participant remarked, *"People are always working and giving all of their money to child care. I'm working my life away to pay someone else to take care of my children,"* a sentiment felt by many participants. The cost of child care was a major financial challenge for parents. However, not only was cost identified as a barrier for parents, but key informants also described long waitlists for childcare, especially for younger children who are under the age of 3 years old.

Key informants who identified as parents also expressed that childcare was especially difficult during the summer time and on school breaks. One shared, *"[Childcare especially bad in the summertime. I want my grandkid to be able to go to the Boys and Girls Club to be with other kids, but even that is $200 a week; I barely make that much."* Additionally, focus group participants who identified as grandparents in Dorchester frequently spoke of needing to help their children with childcare, often causing them to miss work. One resident shared, *"I have to watch my grandson because every Friday it's a half a day at school, and every month or so there's a day when they don't go. My daughter is trying to work to make a life for herself but how*

can she when she has to leave to get him at school in the middle of the day? So, I'm trying to help my daughter by taking care of him at those times, but it means that I can't work."

Survey data confirm these themes. Of the Boston CHNA survey respondents, almost 11% indicated that they had trouble paying for child care. Data by race/ethnicity show that 16% of Latino respondents and 14% of Black respondents report trouble paying for child care (Figure 148). While the numbers were generally small in the survey among some non-English speakers so results should be interpreted with caution, Figure 149 indicates that Haitian Creole, Portuguese, and Spanish speakers were significantly more likely than the rest of the sample to indicate having trouble paying for child care.

Figure 148. Percent Boston CHNA Survey Respondents Reporting Having Trouble Paying for Child Care, by All Respondents and Selected Indicators, 2019

All Respondents (N=1,542) 10.8%

Asian (N=219) 6.4%
Black (N=341) 14.1%
Latino (N=352) 15.9%
White (N=527) 6.3%
Other/Two or more (N=76) 14.5%

Under 18 years (N=131) 3.8%
18-24 years (N=107) 6.5%
25-44 years (N=620) 18.9%
45-64 years (N=375) 4.3%
65+ years (N=129) 0.8%

Female (N=1,045) 11.4%
Male (N=295) 8.1%
Non-binary/transgender (N=21) 19.1%

HS graduate or less (N=365) 8.8%
Some college/certificate program (N=266) 19.9%
College graduate or more (N=696) 8.1%

Heterosexual/non-transgender (N=1,073) 11.2%
LGBTQ (N=184) 8.2%

Parent of child under 18 (N=499) 23.1%
Not parent of child under 18 (N=875) 3.0%
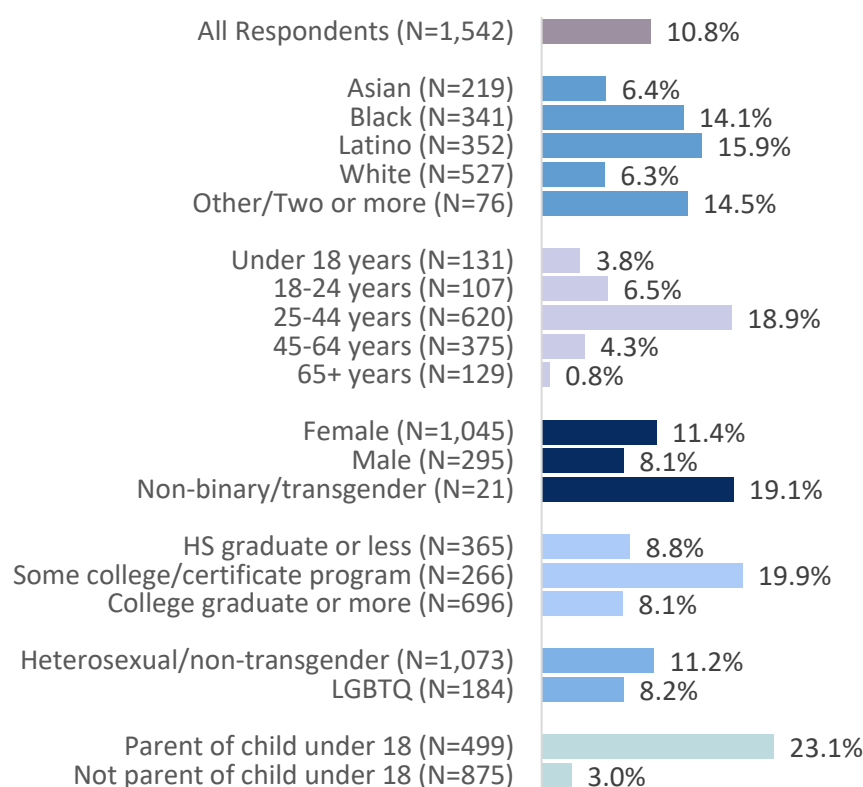
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups (p < 0.05): race/ethnicity, age, educational attainment, and parent status

Figure 149. Percent Boston CHNA Survey Respondents Reporting Having Trouble Paying for Child Care, by All Respondents and Primary Language Spoken, 2019
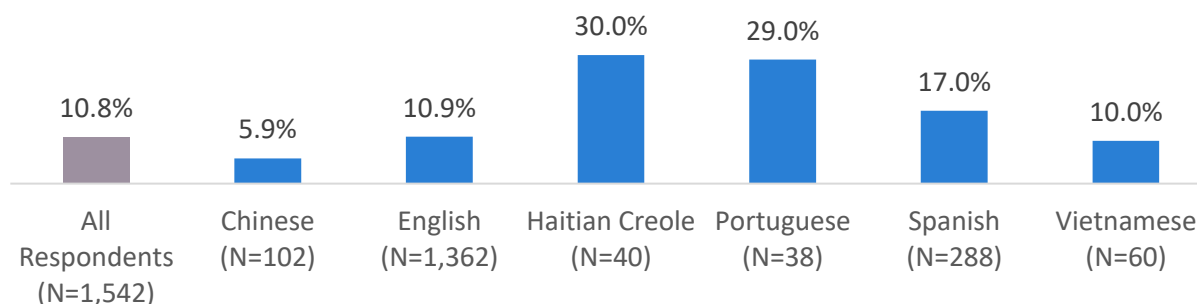
DATA SOURCE: Boston CHNA Community Survey, 2019

Birth Rate and Birth Risk Factors

The overall birth rate in Boston has significantly declined for women 15-44 years old since 2011 from 45.1 births per 1,000 female residents to 41.6 births in 2017. Data can be found in the APPENDIX I. However, current birth rates are significantly different by neighborhood. Hyde Park, Charlestown, Roslindale, Mattapan, East Boston, Dorchester, and West Roxbury were neighborhoods with significantly higher birth rates in 2017 compared to the rest of Boston (Figure 150). Additional data on birth rates by race/ethnicity and age group can be found in APPENDIX I.

Figure 150. Birth Rate, by Boston and Neighborhood, Age-Specific Rate per 1,000 Female Residents Aged 15-44 Years, 2017
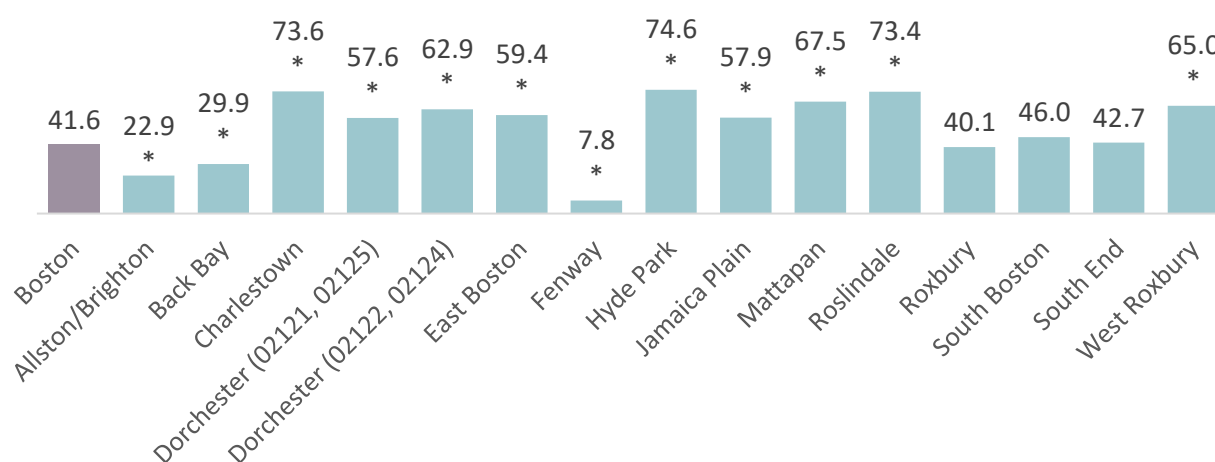
DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Low birthweight (born less than 5 lbs., 8 oz.) and preterm births (born less than 37 weeks gestation) are both important risk factors for infants. The percentage of babies born low birth weight or preterm have generally remained steady from 2011-2017 (data in APPENDIX I). In

2017, 8.7% of babies born in Boston were born low birthweight and 9.9% were considered preterm. For both low birth weight and preterm births, rates were significantly higher among Black and Latino mothers (Figure 151). Data for these risk factors by neighborhood and age of mother can be found in APPENDIX I.

Figure 151. Percent Low Birthweight and Preterm Births, by Boston and Race/Ethnicity, 2017
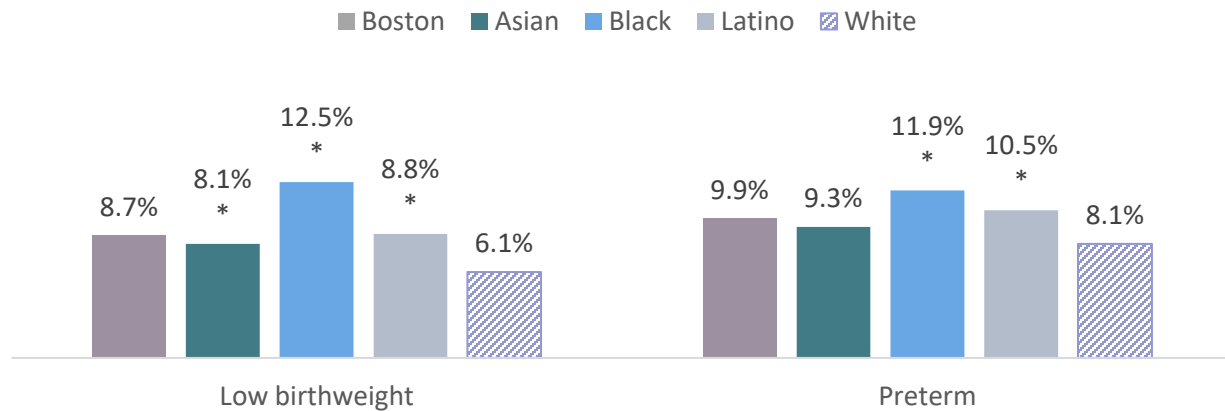
■ Boston ■ Asian ■ Black ■ Latino ▨ White

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Low birthweight is defined as weighing less than 5 pounds, 8 ounces; Preterm birth is defined as being born before 37 weeks of gestation; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Another risk factor for children is smoking during pregnancy. The percentage of mothers in Boston who reported smoking during pregnancy has significantly decreased over time from 2.2% in 2011 to 1.5% of mothers in 2017 (Figure 152). However, among mothers who do report smoking during pregnancy, it is significantly more likely among those in their 20s compared to those who are 35+ years old, White mothers compared to Latino and Asian mothers (Figure 153), and those living in Dorchester or Roxbury compared to the rest of Boston (Figure 154).

Figure 152. Percent Mothers Who Smoked During Pregnancy, by Boston and Over Time, 2011–2017

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was statistically significant (decrease over time)

Figure 153. Percent Mothers who Smoked during Pregnancy, by Boston and Selected Indicators, 2015–2017 Combined
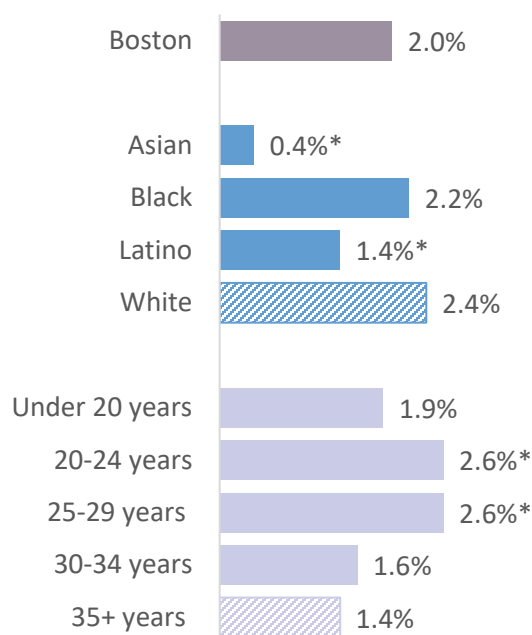
Category	Percent
Boston	2.0%
Asian	0.4%*
Black	2.2%
Latino	1.4%*
White	2.4%
Under 20 years	1.9%
20-24 years	2.6%*
25-29 years	2.6%*
30-34 years	1.6%
35+ years	1.4%

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2015-2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Figure 154. Percent Mothers Who Smoked During Pregnancy, by Neighborhood, 2014–2017 Combined

Neighborhood	Percent
Boston	2.0%
Allston/Brighton	1.8%
Back Bay	0.4%*
Charlestown	1.7%
Dorchester (02121, 02125)	3.2%*
Dorchester (02122, 02124)	3.2%*
East Boston	1.7%
Fenway	1.0%*
Hyde Park	1.8%
Jamaica Plain	0.8%*
Mattapan	1.8%
Roslindale	1.5%
Roxbury	3.2%*
South Boston	2.1%
South End	1.5%
West Roxbury	0.6%*
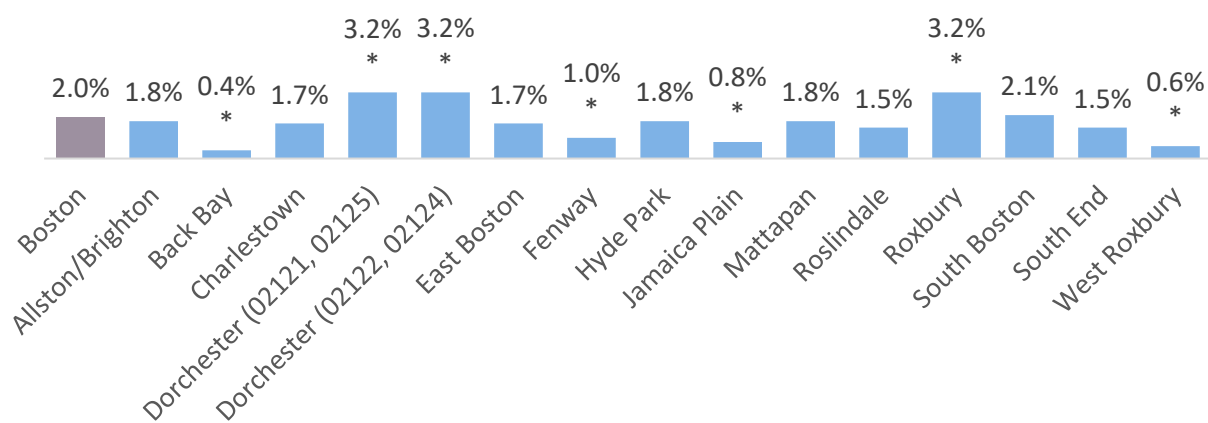
DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2014-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Since 2011, the percentage of mothers who have received adequate or adequate plus prenatal care has significantly increased over time (Figure 155), with more than eight in ten mothers in Boston falling into this category in 2017. However, Asian, Black, and Latino mothers were significantly less likely than White mothers to receive adequate or adequate plus prenatal care (Figure 156). Data by mother's age and neighborhood can be found in APPENDIX I.

Figure 155. Percent Mothers Who Received Adequate or Adequate Plus Prenatal Care, by Boston and Over Time, 2011–2017
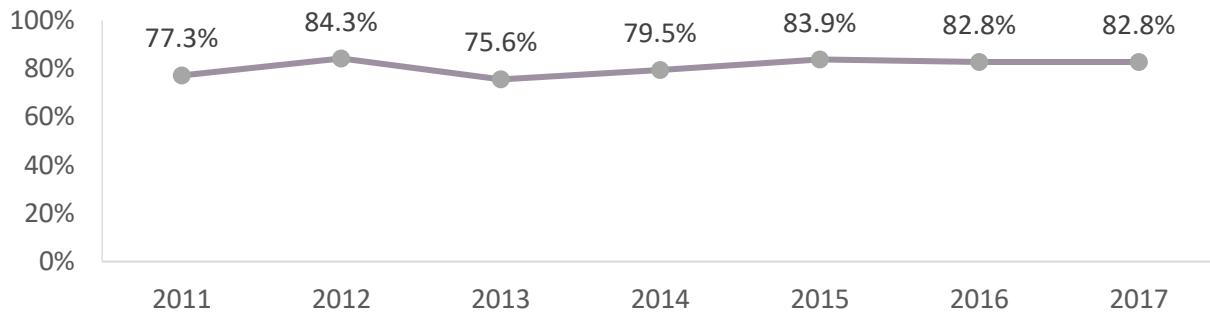
DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: According to the Kotelchuck Index for Prenatal Care, adequate prenatal care is defined as having 80-109.9% of expected visits for prenatal care and adequate plus prenatal care is defined as having 110% or more of expected visits; Change over time was statistically significant (increase over time)

Figure 156. Percent Mothers Who Received Adequate or Adequate Plus Care, by Boston and Race/Ethnicity of Mother, 2017
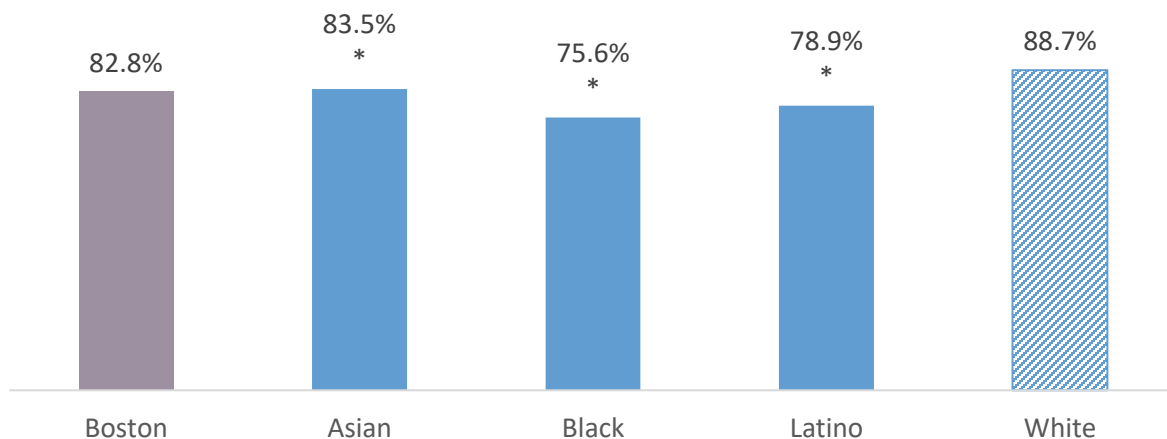
DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: According to the Kotelchuck Index for Prenatal Care, adequate prenatal care is defined as having 80-109.9% of expected visits for prenatal care and adequate plus prenatal care is defined as having 110% or more of expected visits; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

While rates of infant mortality are low and have been relatively stable over time (as shown in APPENDIX I), the mortality rate of aggregated 2015-2017 data was 5.1 per 1,000 live births (Figure 157). However, infant mortality rates were significantly higher in Hyde Park, South End, Dorchester (02122, 02124), and Mattapan.

Figure 157. Infant Mortality Rate, by Neighborhood, Rate per 1,000 Live Births, 2015–2017 Combined
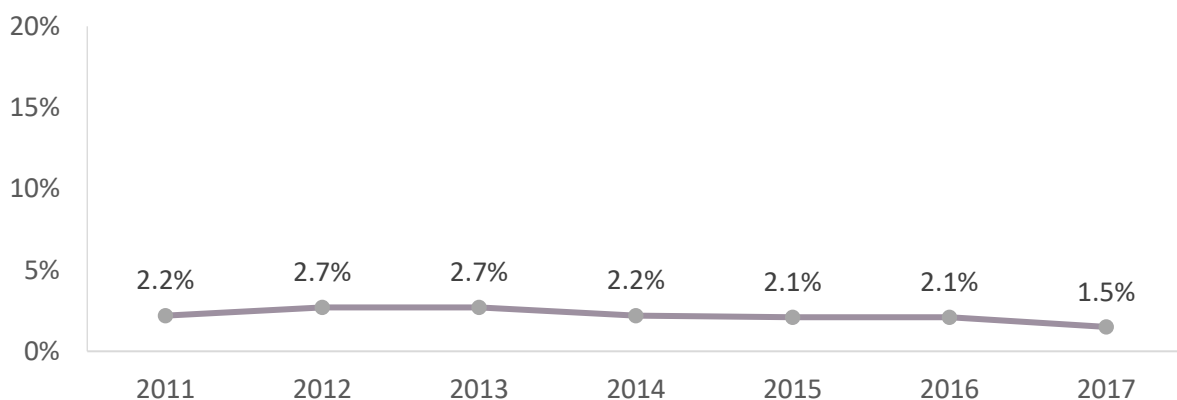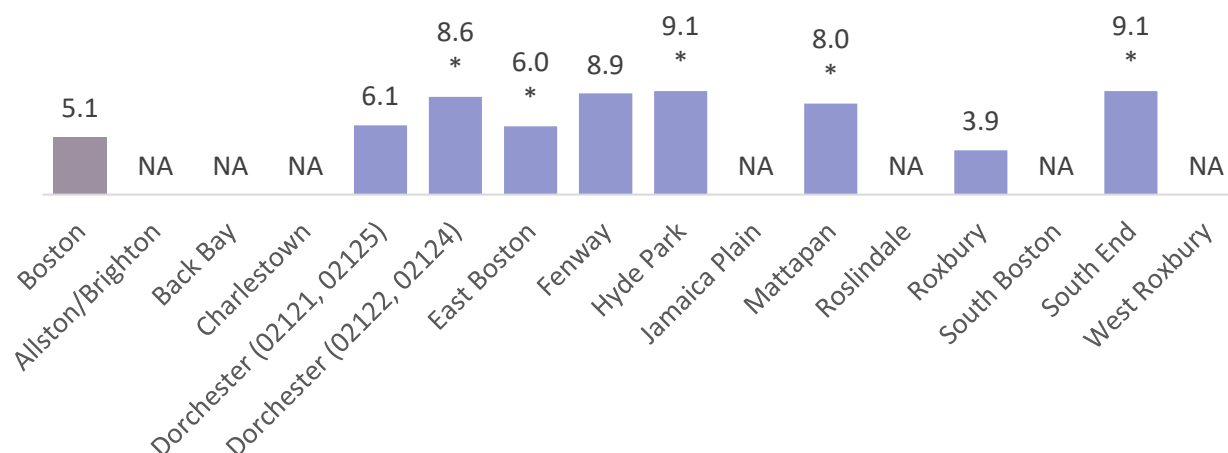

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Infant mortality is defined as the death of an infant before 1 year of age; NA denotes where rates are not shown due to insufficient sample size; Sample size for Dorchester (02121, 02125), Dorchester (02122, 02124), East Boston, Fenway, Hyde Park, Mattapan, and South End are <20 & rates should be interpreted with caution; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Childhood Lead Exposure

There is a dearth of health surveillance data available for young children. One health issue where data are regularly collected is around lead exposure. In 2011, 3.9% of boys under 6 years old were screened with elevated blood lead levels, while that figure was 2.4% in 2015 (Figure 158). For girls, 3.0% who were screened had high blood levels; in 2015, that number was 2.2%.

Figure 158. Percent Children Under 6 Years Screened with Elevated Blood Lead Levels in Boston, by Sex and Over Time, 2011–2015
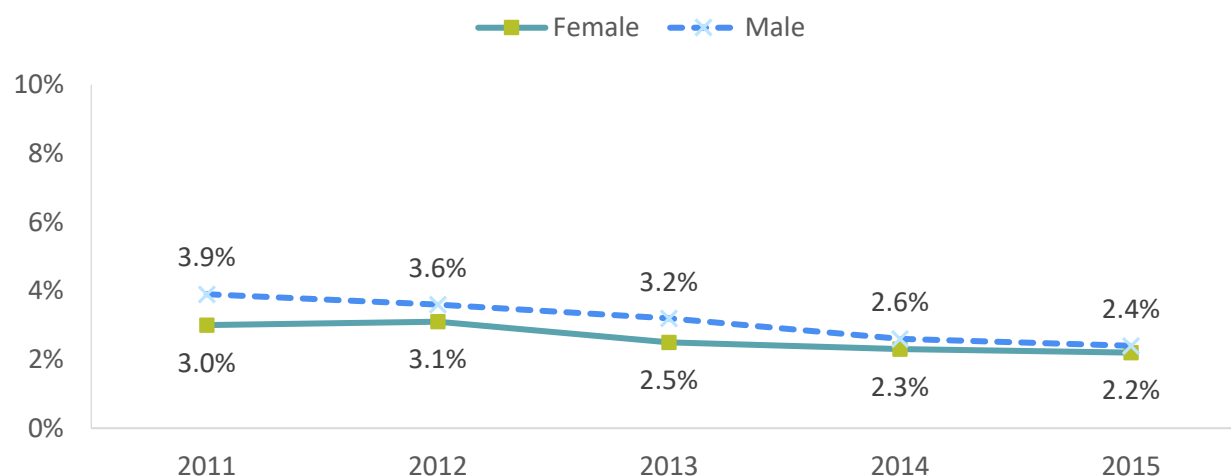
DATA SOURCE: Massachusetts Department of Public Health, Childhood Lead Poisoning Prevention Program, 2011-2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Poisoning defined greater than 5 ug/dl of blood lead level based on the 2012 CDC recommendation of less than 5 ug/dl of lead; Significance testing was not conducted for these data

By neighborhood, the percent of children who were identified as having elevated blood levels among those who were screened ranged from 3.8% of children in Allston/Brighton to 0.9% of children in South Boston and West Roxbury (Figure 159).

Figure 159. Percent Children Under 6 Years Screened with Elevated Blood Lead Levels, by Boston and Neighborhood, 2015
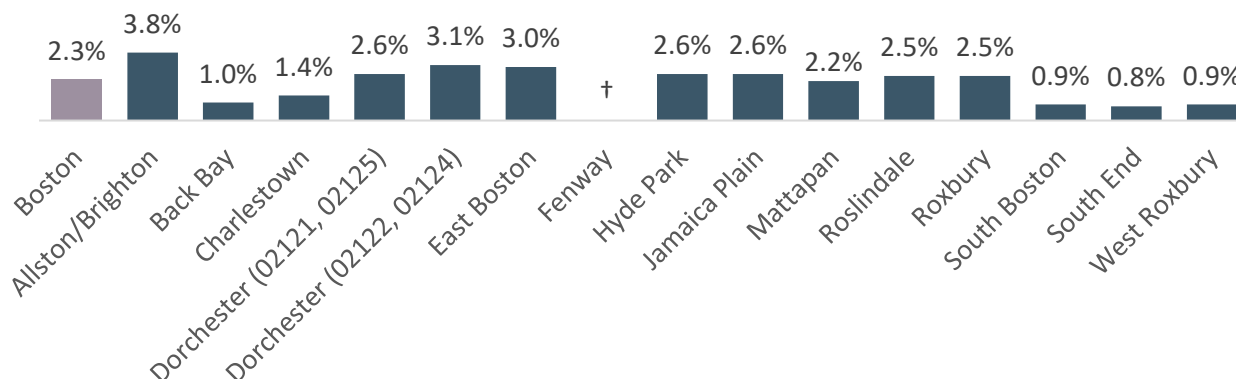
DATA SOURCE: Massachusetts Department of Public Health, Childhood Lead Poisoning Prevention Program, 2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Poisoning defined greater than 5 ug/dl of blood lead level based on the 2012 CDC recommendation of less than 5 ug/dl of lead;
†Fenway was reported as having a prevalence of 0%-0.75%; Sample sizes for in Back Bay, Charlestown, Fenway, Mattapan, South Boston, South End and West Roxbury are ≤ 20 and rates should be interpreted with caution; Significance testing was not conducted for these data

A few focus group participants, specifically residents in Allston/Brighton and East Boston, mentioned concerns about lead. Specifically, they talked about the possibility of lead paint in older houses and its potential health effects. As one parent shared, "*Lead in the house worries me; this neighborhood has a lot of old houses and people don't know that lead is very dangerous.*" A few also commented on concerns of lead in the water in older school buildings.

Sexual Health

Why is This Important?

Sexually transmitted infections (STIs) remain a significant public health problem in the United States, despite the fact that they are preventable. Each year, there are approximately 20 million new STIs—about half of them among young men and women.[70] While most will not cause harm, some have the potential for serious health consequences including chlamydia, gonorrhea, syphilis and human papillomavirus (HPV). STIs are also costly, accounting for about $16 billion in total medical costs annually.[71]

"[There is a] need for more access to positive sexual health education. Parents don't feel comfortable discussing sex, so kids' only exposure is media, where the emphasis is on physical gratification, not on developing positive, respectful relationships with a partner." — Key informant interviewee

Key Findings in this Section

While sexual health was not a prominent theme discussed across focus groups or interviews; the Youth Risk Behavioral Survey provides helpful insights into sexual behaviors among youth, such as condom use, to inform STI prevention strategies. This is particularly important given that residents age 15-24 experienced the highest rates of chlamydia and gonorrhea. Boston has experienced a significant increase in cases of chlamydia and gonorrhea over time with disparities by neighborhood, age, and sex. While the incidence of HIV among Boston residents has decreased over time, disparities persist by neighborhood, race/ethnicity, age, and sex.

Youth Sexual Activity

Sexual health was not a prominent theme discussed across focus groups or interviews; however, a few key informants with expertise in the field of substance use and early childhood care expressed the need for more sexual health education as early as late elementary and middle school. They described concerns related to social media use and the impacts of unhealthy relationship models.

According to 2013-2017 Youth Risk Behavioral Survey results, 44% of Boston public high school students reported ever having sex and 62% of sexually active Boston public high school students used a condom during the last time they had sex. About half of Latino and Black students had ever had sex (52% and 48%, respectively), which was significantly higher than White students (33%). Latino and Black students were also twice as likely to report having sex before age 13. Nearly two-thirds of students who identified as LGBTQ had ever had sex, which was significantly higher than students who identified as heterosexual/non-transgender 41%); LGBTQ students were also more likely to report having sex before age 13 compared to heterosexual or non-transgender students. (See APPENDIX I for additional data on youth sexual behavior.)

LGBTQ youth focus group participants perceived that sex work among LGBTQ young people was on the rise, especially for those who were housing insecure or homeless. One LGBTQ youth focus group participant expressed that the practice of sex work is sometimes normalized, which they described as detrimental to young people. *"I spent time as a prostitute and there was little sympathy for me in the older [LGBTQ] community; I don't think that these behaviors should be passed off [as normal]."*

Chlamydia

From 2015 to 2017, Boston experienced a 21% increase in chlamydia from 638 to 772.5 cases per 100,000 residents. As shown below in Figure 160, Dorchester (02121, 02125) had the highest rate of chlamydia (1,310.0 cases per 100,000 residents) – 1.5 times the rate of the rest of Boston – followed by Roxbury and Dorchester (02122, 02124) (1,070.5 and 1,068.5 cases per 100,000 residents, respectively). Younger residents experienced significantly higher rates of chlamydia compared to residents 40 years and over (161.2 cases per 100,000 residents); those

aged 15-24 years had the highest rate of chlamydia (1,737.8 cases per 100,000 residents). Females had a significantly higher rate of chlamydia compared to males (833.3 and 721.3 cases per 100,000 residents, respectively). See APPENDIX I for additional data.

Figure 160. Chlamydia Incidence Rate, by Boston and Neighborhood, Age-Specific Rate per 100,000 Residents, 2017
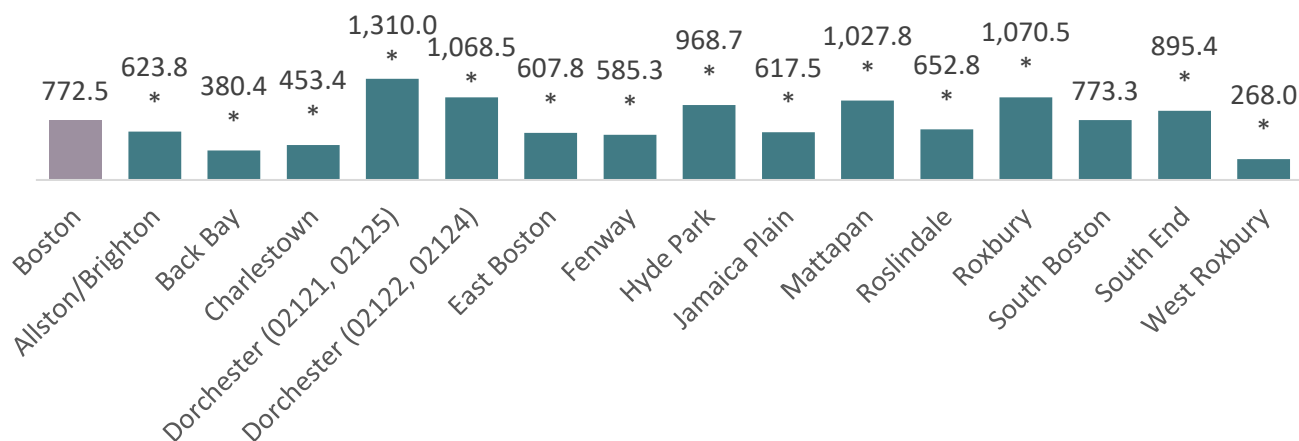
DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and data are subject to change; 13% of cases were documented with a Boston residence, but did not have a designated zip code; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p< 0.05)

Gonorrhea

From 2015 to 2017, Boston experienced a 54% increase in gonorrhea from 160.8 to 247.4 cases per 100,000 residents. The South End had the highest rate of gonorrhea (548.6 cases per 100,000 residents) – 2.2 times the rate of Boston overall – followed by Dorchester (02121, 02125) and Dorchester (02122, 02124) (399.4 and 353.8 cases per 100,000 residents, respectively). The South End, Dorchester (02121, 02125) and (02122, 02124), Jamaica Plain, and Roxbury had significantly higher rates of gonorrhea compared to the rest of Boston. Younger residents experienced significantly higher rates of gonorrhea compared to residents 40 years and over (108.5 cases per 100,000 residents); those aged 30-34 years had the highest rate of gonorrhea (527.3 cases per 100,000 residents). Females had a significantly lower rate of gonorrhea compared to males (114.7 and 394.9 cases per 100,000 residents, respectively). See APPENDIX I for additional data.

HIV/AIDS

While the incidence of HIV among Boston residents has decreased over time - from 28.7 to 21.8 new diagnoses per 100,000 residents - between 2014-2017, disparities exist by neighborhood, race/ethnicity, age, and sex.

In 2017, Mattapan and Roxbury residents experienced the highest HIV incidence rates (45.0 and 40.1 new HIV diagnoses per 100,000 residents, respectively) across all neighborhoods in Boston (Figure 161).

Figure 161. HIV Incidence Rate by Neighborhood, 2017, Age-Specific Rate per 100,000 Residents, 2017
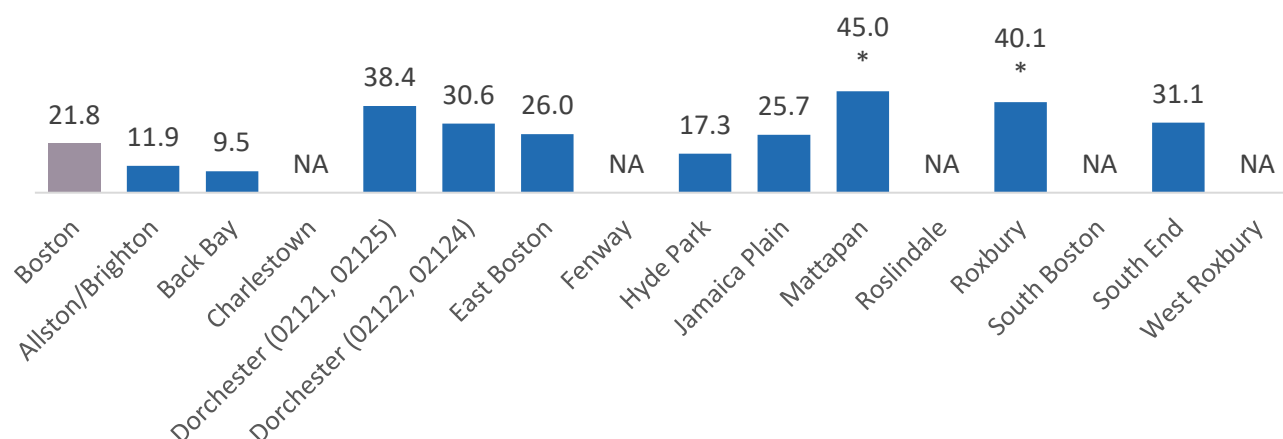
DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS Surveillance Program, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office; NOTES: Data as of 1/1/2019 and are subject to change; Data do not include incarcerated individuals; NA denotes where rates are not shown due to insufficient sample size; Asterisk (*) denotes estimate was significantly different compared to the rest of Boston (p< 0.05)

Latino and Black residents were also disproportionately affected by HIV with new diagnoses (43.6 and 35.8 per 100,000 residents) at more than three times the rate of White residents (11.0 per 100,000 residents). Adults 35-39 years of age had the highest HIV incidence rate (63.3 new diagnoses per 100,000 residents) – more than three times the rate of adults 40 years and over (19.7 new diagnoses per 100,000 residents) – followed by adults 30-34 years of age (43.3 new diagnoses per 100,000 residents) at more than twice the rate of adults 40 years and over. Females had a significantly lower HIV incidence than males (10.0 and 35.4 new diagnoses per 100,000 residents, respectively) (Figure 162).

Figure 162. HIV Incidence Rate, by Boston and Selected Indicators, Age-Specific Rate per 100,000 Residents, 2017

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS Surveillance Program, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office; NOTES: Data as of 1/1/2019 and are subject to change; Data do not include incarcerated individuals; NA denotes where data are suppressed due to insufficient sample size; Asterisk (*) denotes significantly different compared to the rest of Boston (p< 0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Quantitative data show that the most frequent mode of HIV transmission in Boston was men who have sex with men (Figure 163). In 2017, nearly half of new HIV diagnoses occurred among men who have sex with men (48%), 31% of new diagnoses were from an unknown mode of transmission, 13% were through presumed heterosexual sex, and 8% were from injection drug use. Some participants in the focus group with residents in recovery or active users perceived an increase in HIV in the community, attributing the increase to needle-sharing and unprotected sex. One resident shared, *"People using that have HIV aren't getting help; they're sharing needles and passing the [disease] around/ People are playing Russian Roulette and don't realize what they're giving and getting."* Another resident agreed and added that the perceived rise in methamphetamines were also a factor, sharing, *"There's an increase in the amount of people getting HIV because of the crystal meth; it keeps you up for days and people fall in love with it. They'll use anyone's needles and have unprotected sex, too."*

Figure 163. Percent New HIV Diagnoses in Boston, by Mode of Transmission, 2017
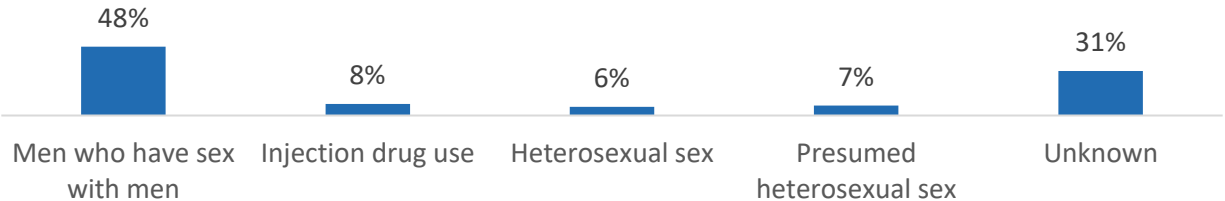
DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS Surveillance Program, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and are subject to change; Data do not include incarcerated individuals

In 2016, the South End had the highest prevalence rate of people living with HIV/AIDS (1,852.1 people per 100,000 residents), followed by Mattapan (1,214.0 people per 100,000 residents), Roxbury (1,181.0 people per 100,000 residents), and Dorchester (02121, 02125) and Dorchester (02122, 02124) (1,102.9 and 1,126.7 people per 100,000 residents) – these rates were significantly higher than those among residents in the rest of Boston (Figure 164).

Figure 164. HIVS/AIDS Prevalence Rate, by Boston and Neighborhood, Age-Specific Rate per 100,000 Residents, 2016

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS Surveillance Program, 2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and are subject to change; Data do not include incarcerated individuals; Asterisk (*) denotes significantly different compared to the rest of Boston (p< 0.05)

Black and Latino residents also had significantly higher prevalence rates of people living with HIV/AIDS (1,562.0 and 943.8 people per 100,000 residents, respectively) compared to White residents (670.1 people per 100,000 residents). Females had a significantly lower prevalence rate of people living with HIV/AIDS compared to males (376.6 and 1,367.7 people per 100,000 residents, respectively) (Figure 165).

Figure 165. HIVS/AIDS Prevalence Rate, by Boston and Selected Indicators, Age-Specific Rate per 100,000 Residents, 2016

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS Surveillance Program, 2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and are subject to change; Data do not include incarcerated individuals; Asterisk (*) denotes significantly different compared to the rest of Boston (p< 0.05)

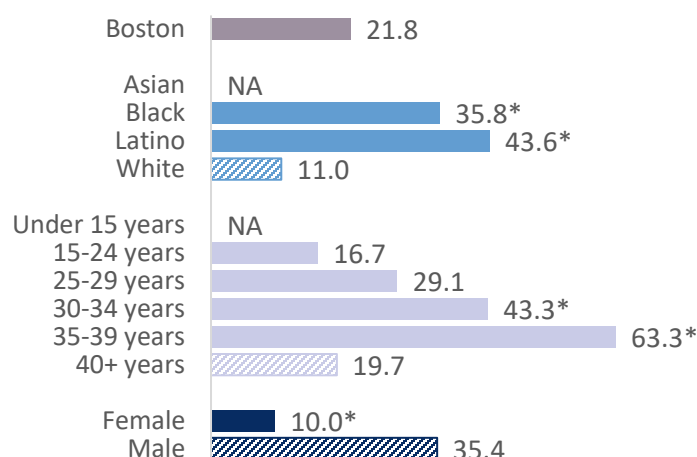From 2011-2017, the HIV/AIDS mortality rate in Boston has been stable and in 2017 was less than 3 deaths per 100,000 residents. However, Black residents experienced a significantly higher rate of death due to HIV/AIDS (6.5 deaths per 100,000 residents) – 2.5 times greater than that of White residents (2.6 deaths per 100,000 residents). See APPENDIX I for HIV/AIDS mortality data.

Environmental Health

Why is This Important?

> "You see those kids playing basketball every day at the Wang Center (YMCA in Chinatown). It's right by the highway. Think, they are just breathing in all those highway fumes every day…" — Key informant interviewee

A healthy environment is associated with a high quality of life and good health. Environmental factors are various and far reaching and include exposure for hazardous substances in the air, water, soil or food; natural disasters and climate change; occupational hazards; and the built environment.[72,73] An unhealthy environment exacerbates issues of health, illness, injury, and behavior. Hazardous substances in the air and water are connected to health concerns such as cancer and long-term damage to respiratory and cardiovascular systems. Extreme heat, natural disasters such as floods, droughts and storms can cause physical harm, as well as the spread of pollutants, hazardous substances, and communicable diseases.[74] They also spread environmental health hazards from fires/explosions, toxins, and pollutions. Features of the built environment influence behaviors, physical activity patterns, social networks, and access to resources. Poor environmental quality has its greatest impact on people whose health status is already at risk.[75]

Key Findings in This Section

Concerns related to environmental health were raised across the survey, focus groups, and interviews. Boston CHNA survey respondents cited their top environmental health concerns as: outdoor noise pollution from vehicles, outdoor air pollution from vehicles, and dangerous traffic. Overall, these top three concerns were similar across neighborhoods, except for East Boston which cited airport noise as a top concern. Air pollution and quality was a concern discussed in focus groups in Chinatown and East Boston where residents perceived that lower-income neighborhoods were more vulnerable to pollutants and litter due to proximity to highways, airports, and train stations. BBRFSS data show secondhand smoke exposure was significantly higher among Boston residents of color and lower socioeconomic status.

Multiple key informants explained how more extreme weather, heat, and rising seas from climate change are increasing health problems, particularly for mental health, respiratory, cardiovascular and vector-borne disease. Boston emergency department utilization rates and costs for climate-driven health issues are expected to rise in the future. Community health and resilience efforts can reduce such threats and costs, and help the city prepare for Climate Ready Boston's estimate that 7% of our land will experience frequent storm water flooding by 2050.

Environmental Health Concerns and Experiences

Boston CHNA survey respondents noted a number of different environmental health concerns and whether they experienced any of these concerns at home, work, or school. Among all the issues listed, outdoor noise pollution from vehicles (39.8%), outdoor air pollution from vehicles (38.9%), and dangerous traffic (35.6%) were the top three cited environmental health concerns around a respondent's home (Table 26). Additionally, approximately one-quarter of respondents cited extreme outdoor heat or cold, mold/mildew or water leaks, bug and/or rodent infestation, and more severe storms as top environmental health concerns at home.

At work, the top three concerns were similar but in a different order; dangerous traffic was the most cited environmental health concern with 31.4% reporting this. At respondents' school (if applicable), dangerous traffic, outdoor air pollution from vehicles, inadequate heating or cooling, and outdoor noise pollution from vehicles were the top concerns reported.

Table 26. Percent Boston CHNA Survey Respondents Reporting Environmental Health Concerns at Home, Work, or School, 2019

	Home	Work	School
Outdoor noise pollution from vehicles (N=1,627)	39.8%	21.6%	13.9%
Outdoor air pollution from vehicles (N=1,629)	38.9%	26.2%	15.0%
Dangerous traffic (N=1,639)	35.6%	31.4%	16.6%
Extreme outdoor heat or cold (N=1,586)	29.3%	19.6%	12.7%
Mold/mildew or water leaks (N=1,627)	24.4%	12.1%	8.8%
Bug and/or rodent infestation (N=1,611)	23.8%	13.9%	10.7%
More severe storms (N=1,576)	22.8%	13.8%	7.5%
Inadequate heating and/or cooling (N=1,600)	21.3%	14.0%	14.4%
Airport or airplane noise or vibrations (N=1,590)	20.1%	6.0%	5.0%
Poor indoor air quality (N=1,621)	19.2%	16.3%	9.0%
Tobacco smoke (N=1,627)	17.3%	15.0%	9.3%
Neighborhood flooding (N=1,559)	14.1%	7.6%	4.0%
No or not working smoke detectors (N=1,563)	9.3%	3.1%	3.2%
Industry, toxic waste, pesticides, etc. (N=1,556)	8.9%	8.7%	5.5%
Lead in paint, lead or other contaminants in drinking water (N=2,404)	7.9%	4.3%	7.2%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

When looking at these data by respondents' neighborhood of residents, the top three concerns at home were similar across neighborhoods except for a few distinctions (Table 27). East Boston residents' top environmental concern at home was airport or airplane noise or

vibrations, while Mattapan residents cited mold or mildew leaks as a top environmental health concern at home.

When citing environmental health concerns at work, responses were generally similar by respondents' neighborhood of residence, except that Chinatown residents cited tobacco smoke in their top issues (Table 28). When noting top environmental health concerns at school, responses by neighborhood of residence overall mirrored the general sample, except that Hyde Park residents cited bug and/or rodent infestation as their top environmental health issue at school, Roslindale residents cited inadequate heating and/or cooling, and Chinatown residents cited tobacco smoke as their second biggest environmental health concern at school (Table 29). (However, it should be noted that the survey did not ask for respondents' area of work or school.)

Table 27. Percent Boston CHNA Survey Respondents Reporting Environmental Health Concerns at Home, by Neighborhood, 2019

	Allston/ Brighton	Chinatown	Dorchester	East Boston	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South End
1	Outdoor noise pollution from vehicles	Outdoor noise pollution from vehicles	Outdoor air pollution from vehicles	Airport or airplane noise or vibrations	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor noise pollution from vehicles	Outdoor air pollution from vehicles	Outdoor noise pollution from vehicles	Outdoor noise pollution from vehicles
2	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor noise pollution from vehicles	Outdoor air pollution from vehicles	Outdoor noise pollution from vehicles	Dangerous traffic (tied)	Mold/mildew or water leaks	Outdoor noise pollution from vehicles (tied)	Outdoor air pollution from vehicles	Dangerous traffic
3	Dangerous traffic	Dangerous traffic	Dangerous traffic	Outdoor noise pollution from vehicles	Dangerous traffic	Outdoor noise pollution from vehicles (tied)	Outdoor air pollution from vehicles	Dangerous traffic (tied)	Dangerous traffic	Outdoor air pollution from vehicles
4	Extreme outdoor heat or cold	Tobacco smoke	Extreme outdoor heat or cold	Dangerous traffic	Extreme outdoor heat or cold	Extreme outdoor heat or cold	Bug and/or rodent infestation (tied)	Extreme outdoor heat or cold	Extreme outdoor heat or cold	Bug and/or rodent infestation
5	Inadequate heating and/or cooling	Mold/mildew or water leaks	Bug and/or rodent infestation	More severe storms	Bug and/or rodent infestation	More severe storms	Poor indoor air quality (tied)	Mold/mildew or water leaks	Bug and/or rodent infestation	Extreme outdoor heat or cold
Tie						Mold/mildew or water leaks	Extreme outdoor heat or cold	Airport or airplane noise or vibrations		

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: N is not presented for each neighborhood in the table due to the Ns varying by each environmental health concern. The Ns are available in the appendix.

Table 28. Percent Boston CHNA Survey Respondents Reporting Environmental Health Concerns at Work, by Neighborhood of Respondent Residence, 2019

	Allston/ Brighton	Chinatown	Dorchester	East Boston	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South End
1	Dangerous traffic	Tobacco smoke	Dangerous traffic	Dangerous traffic	Dangerous traffic	Dangerous traffic	Dangerous traffic	Dangerous traffic	Dangerous traffic	Dangerous traffic
2	Outdoor air pollution from vehicles	Dangerous traffic (tied)	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles
3	Outdoor noise pollution from vehicles	Inadequate heating and/or cooling (tied)	Outdoor noise pollution from vehicles	Outdoor noise pollution from vehicles	Outdoor noise pollution from vehicles	Poor indoor air quality (tied)	Outdoor noise pollution from vehicles	Extreme outdoor heat or cold	Outdoor noise pollution from vehicles	Extreme outdoor heat or cold
4	Extreme outdoor heat or cold	Extreme outdoor heat or cold	Tobacco smoke	Extreme outdoor heat or cold	Poor indoor air quality (tied)	Extreme outdoor heat or cold	Extreme outdoor heat or cold	Poor indoor air quality (tied)	Extreme outdoor heat or cold	Outdoor noise pollution from vehicles
5	Bug and/or rodent infestation	Poor indoor air quality (tied)	Poor indoor air quality (tied)	Tobacco smoke	Extreme outdoor heat or cold	Outdoor noise pollution from vehicles	Inadequate heating and/or cooling	Outdoor noise pollution from vehicles	More severe storms	Tobacco smoke
Tie		Outdoor air pollution from vehicles								

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: N is not presented for each neighborhood in the table due to the Ns varying by each environmental health concern. The Ns are available in the appendix.

Table 29. Percent Boston CHNA Survey Respondents Reporting Environmental Health Concerns at School, by Neighborhood of Respondent Residence, 2019

	Allston/Brighton	Chinatown	Dorchester	East Boston	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South End
1	Dangerous traffic	Dangerous traffic	Outdoor air pollution from vehicles	Dangerous traffic	Bug and/or rodent infestation	Dangerous traffic	Dangerous traffic	Inadequate heating and/or cooling	Dangerous traffic	Outdoor air pollution from vehicles
2	Outdoor air pollution from vehicles (tied)	Tobacco smoke	Inadequate heating and/or cooling	Outdoor air pollution from vehicles	Outdoor air pollution from vehicles	Extreme outdoor heat or cold	Outdoor air pollution from vehicles	Dangerous traffic (tied)	Outdoor air pollution from vehicles	Outdoor noise pollution from vehicles
3	Outdoor noise pollution from vehicles (tied)	Extreme outdoor heat or cold	Dangerous traffic	Outdoor noise pollution from vehicles	Inadequate heating and/or cooling	Inadequate heating and/or cooling	Inadequate heating and/or cooling	Outdoor noise pollution from vehicles (tied)	Outdoor noise pollution from vehicles	Extreme outdoor heat or cold (tied)
4	Extreme outdoor heat or cold	Inadequate heating and/or cooling	Outdoor noise pollution from vehicles	Airport or airplane noise or vibrations	Outdoor noise pollution from vehicles	Poor indoor air quality (tied)	Extreme outdoor heat or cold	Extreme outdoor heat or cold	Bug and/or rodent infestation (tied)	Inadequate heating and/or cooling (tied)
5	Tobacco smoke	Outdoor noise pollution from vehicles	Bug and/or rodent infestation	Inadequate heating and/or cooling	Dangerous traffic	Bug and/or rodent infestation	Outdoor noise pollution from vehicles	Outdoor noise pollution from vehicles	Tobacco smoke (tied)	Dangerous traffic
Tie	Mold/mildew or water leaks							Bug and/or rodent infestation	Inadequate heating and/or cooling	Lead in paint, lead or other contaminants in drinking water

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: N is not presented for each neighborhood in the table due to the Ns varying by each environmental health concern. The Ns are available in the appendix.

Indoor Contaminants

Secondhand smoke can trigger more frequent and severe asthma attacks and respiratory infections, and some studies have associated secondhand smoke exposure to contributing to deaths from coronary heart disease, stroke, and lung cancer. More than one in ten Boston adults reported exposure to secondhand smoke in the BBRFSS questionnaire (Figure 166). Respondents who identified as Asian, Black, or Latino were all significantly more likely than White respondents to report exposure to secondhand smoke. By housing status, non-homeowners were more likely than homeowners to indicate being exposed to secondhand smoke, with more than 20% of Boston Housing Authority residents and renters on rental assistance reporting exposure. It should be noted that in 2012, Boston Housing Authority was among the first large housing authorities in the country to implement a portfolio-wide non-smoking policy. Lower income and unemployed were significantly more likely than their higher income and employed counterparts to report secondhand smoke exposure.

Figure 166. Percent Adults Reporting Secondhand Smoke Exposure in the Home, by Boston and Selected Indicators, 2013, 2015, 2017 Combined

Category	Percent
Boston	12.5%
Asian	14.2% *
Black	15.7% *
Latino	13.6% *
White	10.1%
18-34 years	18.5%
35-49 years	10.5% *
50-64 years	12.8% *
65+ years	9.5% *
BHA resident	22.8% *
Renter, rental assistance	22.1% *
Renter, no assistance	13.2% *
Other housing arrangement	15.8% *
Home owner	6.6%
Less than HS graduate	17.1% *
HS graduate	18.4% *
Some college or more	9.9%
10 years or less in U.S.	14.5%
More than 10 years in U.S.	9.8% *
Born in U.S.	12.8%
Less than $25,000	20.8% *
$25,000-$49,999	14.5% *
$50,000 or more	6.3%
Employed	9.7%
Out of Work	22.4% *
Other	16.0% *

DATA SOURCE: Boston Behavioral Risk Factor Surveillance System (2013, 2015, 2017), Boston Public Health Commission
DATA ANALYSIS: Research and Evaluation Office, Boston Public Health Commission
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

As noted in the 2016 Health of Boston report, the Environmental and Occupational Health Division of the Boston Public Health Commission responds to requests from the public for inspections related to a broad range of potential environmental health hazards, including mold. These hazards could be in a variety of settings, including private residences, public buildings, workplaces, and outdoor spaces. For 2012-2016, among the inquiries or complaints received, a total of 432 hazards/violations were identified for mold in Boston. Figure 167 shows the number of hazards/violations by neighborhood ranging from 9 in Charlestown to 59 in Dorchester (zip codes 02121, 02125).

Figure 167. Number of Mold Hazards or Violations in Boston, by Neighborhood, 2012–2016
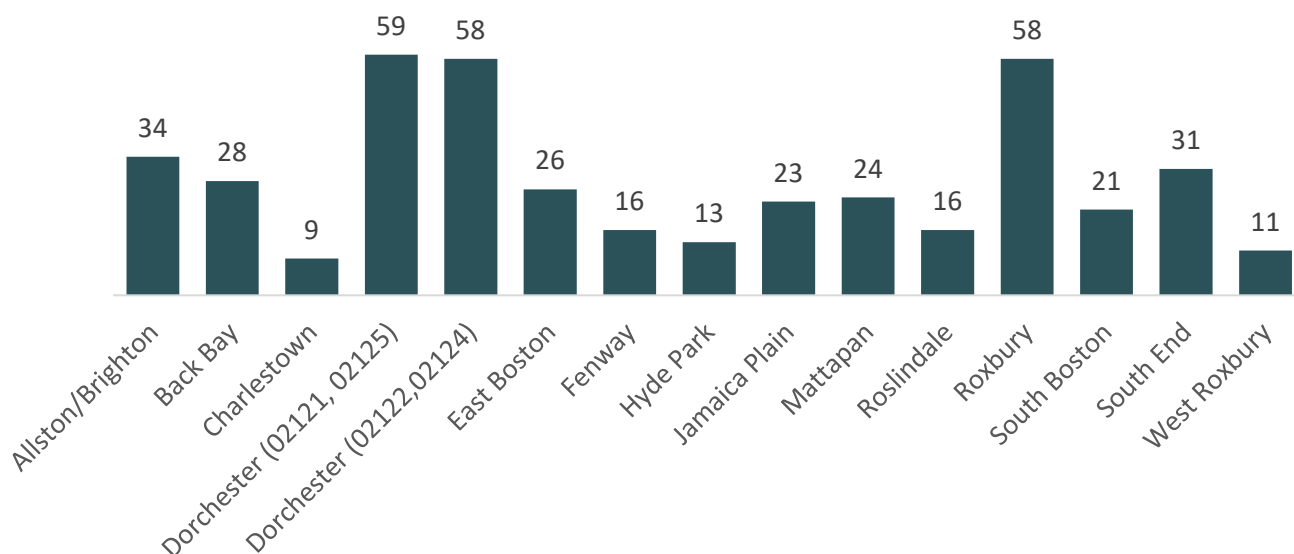
DATA SOURCE: Environmental and Occupational Health Division, Boston Public Health Commission, as cited by Health of Boston (2016-2017), 2012-2016

Outdoor Air Quality and Heat

Concerns related to air pollution were identified specifically in CHNA focus groups Chinatown and East Boston. Residents perceived that lower-income neighborhoods were more vulnerable to pollutants and litter due to proximity to highways, airports, and train stations. As one key informant noted, *"You see those kids playing basketball every day at the Wang Center (YMCA in Chinatown). It's right by the highway. Think, they are just breathing in all those highway fumes every day. I wonder if years from now what the health effects are going to be. They are trying to get some physical activity playing basketball but end up with worse health because the pollution."*

East Boston residents reported significant concerns of the addition of an electrical plant in the neighborhood, which they feared would increase cancer rates and respiratory issues. One resident shared, *"The electricity plant is coming and it's going to make us all sick, my kids will grow up breathing poison."* Another participant agreed and added, *"Why do they always build the bad in this neighborhood [East Boston]?"*

Air quality was also mentioned in the context of marijuana use in public spaces. Focus group participants in Allston/Brighton, Chinatown, and East Boston frequently mentioned concerns over the legalization of marijuana and the perception that the substance is easily accessible and

often consumed in public spaces, polluting the air around them. One parent shared, *"The park near my house where I take my daughter—there's a lot of people smoking marijuana all the time."* Another resident agreed and added, *"Where I live, the people smoke marijuana inside. The smoke makes me choke, my children vomit...but it's legal [so] what can I do?"*

As noted in the 2016-2016 Health of Boston report, data from the five Massachusetts Department of Environmental Protection (MassDEP) sites located in Boston that monitor particulate matter indicated that there were no years between 2005-2015 when the particulate concentrations exceeded the annual standard set forth by the U.S. Environmental Protection Agency (EPA).[76]

Extreme heat is an additional environmental health concern. Figure 168 shows that for 2016-2017 data combined, the age-adjusted rate per 100,000 residents for heat-related emergency department visits during warm weather months (May-September) was 6.2 visits per 100,000 residents, although men (7.9 visits per 100,000 residents) had significantly higher rates than women (4.8 visits per 100,000 residents). Residents 18-44 years old had significantly lower heat-related ED rates (4.5 visits per 100,000 residents) than residents who were 65+ years old (9.5 visits per 100,000 residents) (Figure 168).

Figure 168. Heat–Related Emergency Department Visits During Warm Weather Months, by Boston and Selected Indicators, Age–Adjusted Rate per 100,000 Residents 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; NA denotes where data are suppressed due to insufficient sample size; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Climate Change

The impact of climate change was an issue raised by multiple key informant interviewees who mentioned specific concerns around heat-related illness, warming oceans, infectious disease and displacement. Emerging analysis is expected to show Boston emergency department utilization rates and costs for climate-driven health issues are rising. Interviewees identified the need for a climate-informed emergency preparedness strategy for the city of Boston to address flooding and major heat related-events in the immediate future. One key informant explained, *"We need to draw better connection on the vulnerable populations (outlined by Climate Ready Boston) and emergency response system that targets those neighborhoods so that*

people can get advance notice of when this flooding happens – this area has not really been explored yet..." Key informants described that it is imperative to address climate change through a coordinated and systemic approach. One key informant summarized, *"It will be important to mobilize partnerships to address the severity of environmental issues. Hospitals, public health organizations, and others can collaborate to overlay the Climate Ready Boston assessment to prepare high-risk neighborhoods."*

Climate change was also discussed in the context of mental health. Key informants described how climate-related triggers like heat waves can agitate mental health stressors. One key informant shared, *"Acute psychiatric care has grown enormously. There are ties between mental health issues and climate change that need to be addressed. There can be 5-7 day waits for a bed for those who acute psychiatric needs, and we are seeing more of these that are aggravated by climate change pathways."* Key informants described the need to mitigate the impacts of climate change by thinking creatively about urban planning and development. Specific strategies mentioned include: reducing asphalt, increasing tree coverage, and ensuring roofs are painted white instead of black. Further, key informants explained that it will be imperative for the city to work with real estate development companies that are committed to long-term strategies to address environmental concern as development increases.

The Climate Ready Boston report discusses projections of climate change's implications on Boston neighborhoods, with particular attention to the effect of extreme temperatures, rising sea levels, extreme precipitation, and storm flooding. Eight areas of Boston that are identified as some of the most vulnerable, particularly for coastal and river flooding, include Charlestown, Charles River, Dorchester, Downtown, East Boston, Roxbury, South Boston and the South End.[77]

As reported in the Climate Ready Boston Report, Boston's land area exposed to stormwater flooding is projected to increase steadily. By the 2050s, it is projected that 7% of Boston's land area could be exposed to frequent stormwater flooding from 10-year, 24-hour rain events (Table 30). West Roxbury, Allston, Brighton, East Boston, and South Dorchester have the largest areas of land expected to be affected by stormwater flooding, while the South End and South Boston can expect to see the greatest increase in land area exposed to stormwater flooding as sea levels rise and precipitation events become more extreme.

Table 30. Percent Land Area Acres Predicted to be Exposed to Stormwater Flooding For the 10-Year 24-Hour Event, by Boston and Neighborhood

	Total Area Acres	2030s-2050s	2050s-2100s	2070s or later
Boston	31,720	7%	7%	9%
West Roxbury	3,350	7%	7%	8%
Allston/Brighton	2,940	7%	7%	8%
Dorchester	3,780	9%	10%	11%
East Boston	3,430	5%	6%	8%
Jamaica Plain	2,260	8%	8%	9%
Hyde Park	3,260	5%	5%	6%

	Total Area Acres	2030s–2050s	2050s–2100s	2070s or later
Roslindale	2,250	7%	7%	8%
Roxbury	2,770	6%	6%	7%
Mattapan	1,560	8%	8%	9%
South Boston	1,940	6%	8%	10%
South End	640	11%	14%	26%
Charlestown	870	7%	7%	8%
Fenway/Kenmore	620	8%	8%	9%
Downtown	770	5%	6%	7%
Back Bay/Beacon Hill	460	6%	6%	7%
Harbor Islands	820	11%	12%	15%

DATA SOURCE: City of Boston, Climate Ready Boston Final Report, 2016
NOTE: A 10-Year 24-Hour Storm is a common measure of major rain and snow events that refers to the amount of precipitation that has at most a one in ten annual chance of falling during a 24-hour period; Data are based on current available land. Any change to the landscape from present conditions, such as subsidence or land loss as a result of sea level rise, are not taken into consideration.

Key informant interviewees specifically identified the need for a centralized data repository to collect real-time data related to environmental health issues including climate change. This would include data like emergency department utilization during high heat days. (However, it should be noted that for the past 15 years Boston has had a Syndromic Surveillance System in place—a data system for early detection of outbreaks to monitor the size, spread, and tempo of any outbreaks—with every emergency department reporting daily). Interviewees also noted that more guidance is needed around evidence-based strategies to address climate change for those disproportionally impacted, like children, seniors, and low-income communities. There were suggestions to build from the work being led by local coalitions and city initiatives like Climate Ready Boston. Specific groups that were mentioned as potential partners include: Health Care Without Harm, A Better City, Metropolitan Area Planning Council, and the Boston Research Climate Group.

Health Care Access and Utilization

Why is This Important?

Access to comprehensive, quality health care services is important for promoting and maintaining health, preventing and managing disease, and reducing the chance of premature death. Access is multi-faceted and includes components such as the ability to enter the health care system (largely by having insurance coverage), having a regular source of health care, and being able to access health care services when needed.[78] However, inequities exist and not all who need high quality health care are able to access it. Those who face barriers to access are less likely to receive medical care, more likely to delay care, and less likely to use prevention services, resulting in poorer health status and outcomes. From a community perspective, lack of

access results in increased incidence of preventable disease, excessive and inappropriate use of hospital emergency rooms, and higher overall health care costs.

Key Findings in This Section

Boston is a city with many health care resources and a high proportion of residents have health insurance. Focus group participants, interviewees, and Boston CHNA survey respondents all indicated satisfaction with the health care in their community. Residents most commonly obtain health care from a private doctor's office or a public health clinic or community health center and BRFSS results indicated that approximately eight in ten respondents have at least one person as their personal doctor. Community survey respondents indicated that having a regular source of care is one of the top factors that makes it easier for them to get the health care services they need. Dental care was also asked about in the community health survey and nearly three-quarters of respondents reported that they had had a dental check-up in the past year. There are some differences by population group however: Asian and Latino residents were significantly less likely than White residents to indicate having one person as a personal doctor or health care provider; Latino and Black residents were less likely than White or Asian residents to have a seen a dentist in the past year. Barriers to accessing health care in Boston exist according to focus group members, interviewees, and community survey respondents. The most common barriers mentioned by interviewees and focus group members included underinsurance; language and immigration status; navigation and care coordination challenges; transportation; and lack of culturally-sensitive approaches to care. For CHNA community survey respondents, long wait times for appointments and lack of evening or weekend services were the top two factors that made it difficult for them to access health care. Cost of care, especially dental care, was also cited as a challenge for some Boston residents. A higher proportion of Black and Latino residents reported cost as a barrier to accessing both medical and dental care.

Satisfaction and Use of Health Care Services

As noted previously, Boston CHNA survey respondents identified access to health care as an important factor in defining a healthy community and as a strength in their community. Mirroring these sentiments, most Boston CHNA survey respondents indicated that they were satisfied with the health care in their community. As shown in Figure 169, 71.2% said they strongly or somewhat agreed with the statement, "I am satisfied with the health care system in my community", while 86.7% agreed that they are "satisfied with my health care provider" and 87.3% agreed that they could "access health care services easily."

Figure 169. Percent Boston CHNA Survey Respondents Reporting Perceptions of Health Care System and Access, 2019
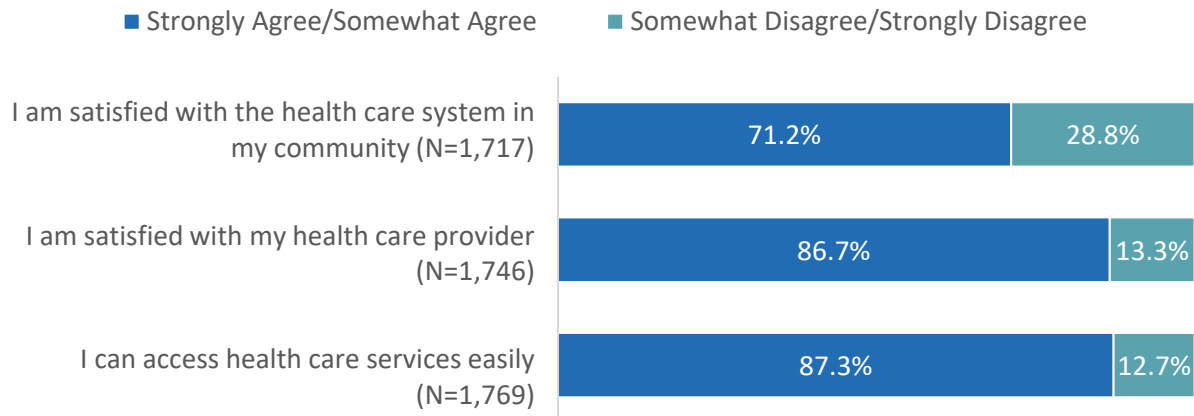
■ Strongly Agree/Somewhat Agree   ■ Somewhat Disagree/Strongly Disagree

	Strongly Agree/Somewhat Agree	Somewhat Disagree/Strongly Disagree
I am satisfied with the health care system in my community (N=1,717)	71.2%	28.8%
I am satisfied with my health care provider (N=1,746)	86.7%	13.3%
I can access health care services easily (N=1,769)	87.3%	12.7%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "not applicable/don't know"

Similarly, focus group and interview participants spoke positively about local health services in Boston, citing close proximity to leading health care institutions. In the Community Assets section of this report, data show that there are numerous hospitals and health care centers in the city. When asked about where they go if they are sick or need advice about health, of the 2,009 Boston CHNA survey respondents answering this question, 50.9% indicated that they went to a doctor's office, while 32.1% saw their public health clinic or community health center as their place of care (Figure 170). However, nearly one in seven (12.7%) indicated that they viewed the hospital emergency room as their place for seeking care or advice.

Table 31 presents the responses to this question by respondent primary language (Chinese, English, Haitian Creole, Portuguese, Spanish, and Vietnamese), although numbers are small in some language groups, so results should be interpreted with caution. Of those sampled, most respondents indicated that a doctor's office was where they sought care, although nearly half of the 56 Haitian Creole-speaking respondents answering this question reported going to a community health center as their usual place of care (Table 31).

Figure 170. Percent Boston CHNA Survey Respondents Reporting Their Usual Place for Seeking Care (N=2,009), 2019

Place	Percent
A doctor's office	50.9%
A public health clinic or community health center	32.1%
Urgent care provider	16.9%
A hospital emergency room	12.7%
A hospital outpatient department	11.5%
No usual place	4.5%
Some other kind of place	2.7%

DATA SOURCE: Boston CHNA Community Survey, 2019
Question asked: When you are sick or need advice about your health, to which of the following places do you usually go? (check all that apply)
NOTE: Data arranged in descending order; Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

Table 31. Percent Boston CHNA Survey Respondents Reporting Their Usual Place for Seeking Care by Primary Language, 2019

	Chinese (N=137)	English (N=1,759)	Haitian Creole (N=56)	Portuguese (N=43)	Spanish (N=359)	Vietnamese (N=82)
A doctor's office	46.0%	28.0%	33.9%	48.8%	57.4%	58.5%
A public health clinic or community health center	43.1%	55.3%	44.6%	46.5%	35.9%	42.7%
Urgent care provider	20.4%	11.1%	12.5%	16.3%	9.5%	11.0%
A hospital emergency room	11.0%	12.1%	17.9%	16.3%	16.4%	15.9%
A hospital outpatient department	7.3%	18.4%	14.3%	20.9%	15.9%	15.9%
No usual place	2.2%	2.9%	3.6%	2.3%	3.1%	2.4%
Some other kind of place	2.9%	5.0%	10.7%	2.3%	3.9%	4.9%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Data arranged in descending order; Question asked: "When you are sick or need advice about your health, to which of the following places do you usually go?"; Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

Continuity of primary care has been shown to be associated with fewer emergency room visits and hospitalizations.[79] The bi-annual Boston Behavioral Risk Factor Surveillance Survey asks residents about whether they have at least one person they view as their personal doctor or health care provider. Results have remained steady over the past several years, with approximately eight in ten respondents reporting having at least one person as their personal doctor. Figure 171 shows the data by sub-population and reveals differences compared to the referent groups within that sub-population. For example, Asian and Latino residents were

significantly less likely than White residents to indicate having one person as that personal doctor or health care provider. Differences were also seen by sex, age, housing status, income, education, and length of time in the United States. Data by neighborhood can be found in APPENDIX I.

Figure 171. Percent Adults Reporting Having a Personal Doctor or Health Care Provider, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined
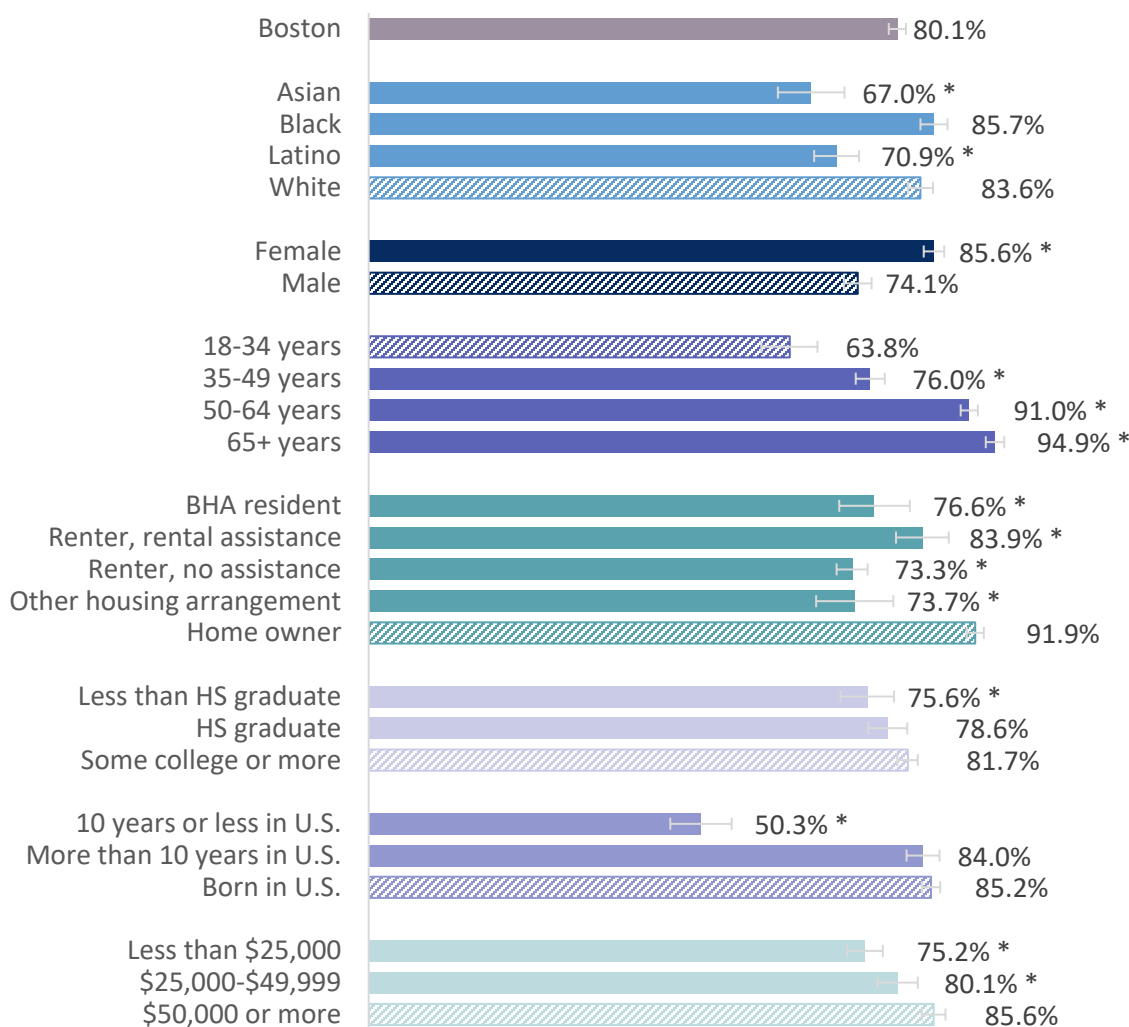
Category	Percent
Boston	80.1%
Asian	67.0% *
Black	85.7%
Latino	70.9% *
White	83.6%
Female	85.6% *
Male	74.1%
18-34 years	63.8%
35-49 years	76.0% *
50-64 years	91.0% *
65+ years	94.9% *
BHA resident	76.6% *
Renter, rental assistance	83.9% *
Renter, no assistance	73.3% *
Other housing arrangement	73.7% *
Home owner	91.9%
Less than HS graduate	75.6% *
HS graduate	78.6%
Some college or more	81.7%
10 years or less in U.S.	50.3% *
More than 10 years in U.S.	84.0%
Born in U.S.	85.2%
Less than $25,000	75.2% *
$25,000-$49,999	80.1% *
$50,000 or more	85.6%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

A similar question was asked on the Boston CHNA survey. It should be noted that this survey used a convenience sample rather than a probability sample, so results may not necessarily be generalizable as the BBRFSS survey. While 66.1% of the Boston CHNA survey sample indicated that they had at least one person that they thought of as their personal doctor or health care provider, 56.8% Vietnamese-speaking respondents reported this (See APPENDIX I).

While dental care did not come up often in the interviews and focus groups, survey respondents were asked about the last time they had a dental check-up. Of the 1,806 respondents who

answered this question, nearly three-quarters (72.3%) indicated that they had a dental check-up in the past year (Figure 172). However, as shown in Figure 172 responses differed significantly by race/ethnicity, age, and educational attainment. Figure 173 presents responses by primary language, where 64.4% of Spanish-speakers reported having had a dental check-up in the past year.

Figure 172. Percent Boston CHNA Survey Respondents Reporting Having Had a Dental Check-up Within the Past Year, by All Respondents and Selected Indicators, 2019

All Respondents (N=1,806) — 72.3%

Asian (N=280) — 75.0%
Black (N=383) — 68.9%
Latino (N=389) — 63.8%
White (N=633) — 80.4%
Other/Two or more (N=87) — 62.1%

Under 18 years (N=190) — 84.7%
18-24 years (N=137) — 73.0%
25-44 years (N=718) — 69.5%
45-64 years (N=462) — 73.4%
65+ years (N=203) — 74.4%

HS graduate or less (N=471) — 72.4%
Some college/certificate program (N=331) — 62.2%
College graduate or more (N=858) — 77.0%
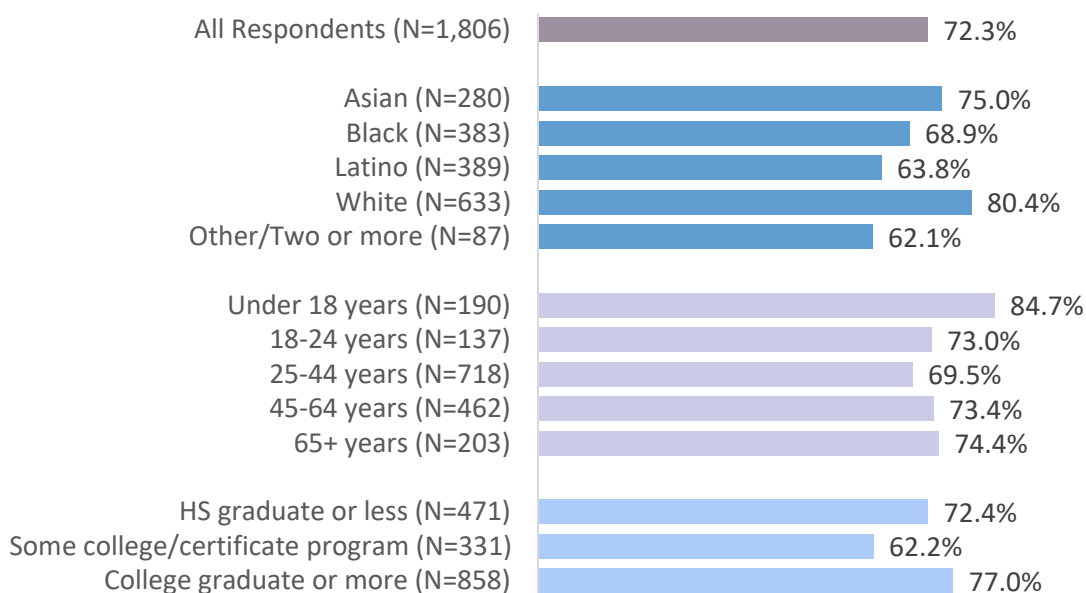
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups (p < 0.05): race/ethnicity, age, and educational attainment

Figure 173. Percent Boston CHNA Survey Respondents Reporting Having Had a Dental Check-up Within the Past Year, by All Respondents and Primary Language Spoken, 2019

All Respondents (N=1,806) — 72.3%
Chinese (N=137) — 74.5%
English (N=1,581) — 74.1% *
Haitian Creole (N=53) — 75.5%
Portuguese (N=49) — 75.5%
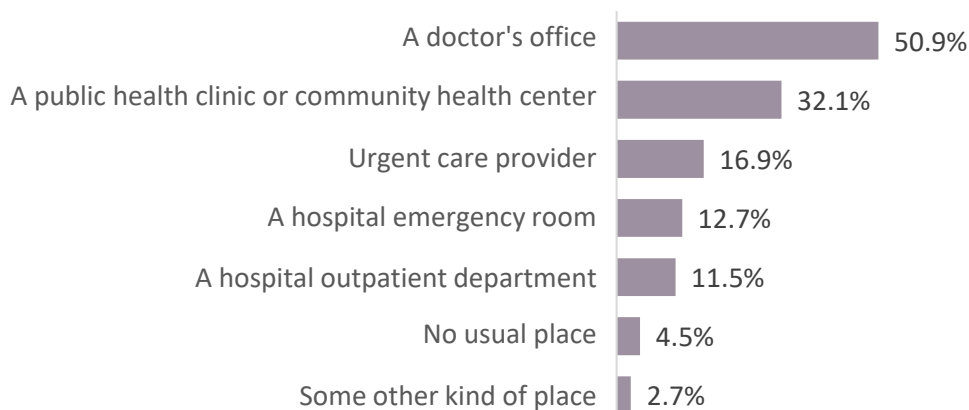Spanish (N=343) — 64.4%*
Vietnamese (N=79) — 73.4%
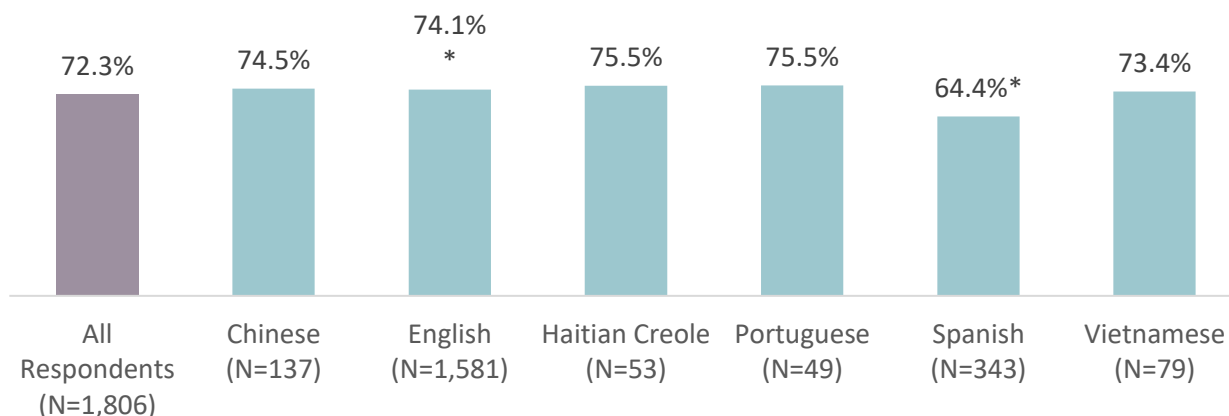
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "prefer not to answer/don't know;" Asterisk (*) denotes where estimate was significantly different compared to the rest of the survey sample

Results from the Youth Risk Behavior Survey completed by BPS high school students indicate that while nearly eight in ten (78.2%) Boston public high school students have reported seeing

a dentist in the past year, this significantly differs by female and male students, and race/ethnicity within female and male students (Figure 174). Additionally, LGBTQ students were significantly less likely to report seeing a dentist in the past year than heterosexual or non-transgender students.

Figure 174. Percent Boston Public High School Youth Reporting Seeing a Dentist in the Past Year by Selected Indicators, 2015 and 2017 Combined
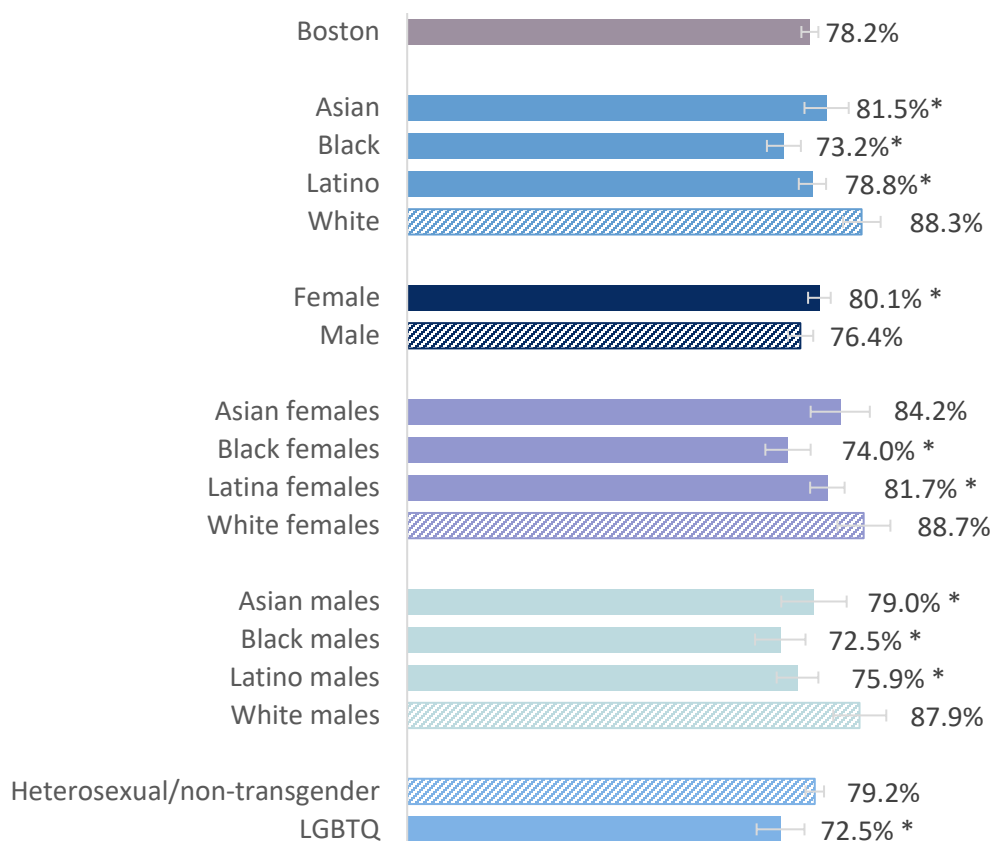
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Health Insurance

Very few Boston residents are uninsured. According to American Community Survey 2013-2017 estimates, 3.9% of the overall population (civilian, noninstitutionalized) in Boston were uninsured, while only 1.4% of the population under 19 years old were uninsured.[80] Among the Boston civilian population, 29.6% have Medicaid (MassHealth) coverage.[81]

These statistics mirror how insurance was discussed in the focus groups and interviews. Very few focus group participants spoke about concerns of being uninsured. Those that did discuss challenges with lack of insurance were homeless, undocumented immigrants, or students. Homeless residents in focus groups specifically discussed the challenge of not having a

permanent mailing address or being unable to access birth certificates as making it difficult to gain insurance coverage.

A more common theme that emerged in focus group discussions was that many residents reported being under-insured—or having insurance coverage that does not adequately cover someone's full health care needs. Many focus group participants, especially those on MassHealth, perceived that there was a limited number of providers, particularly specialists, who accepted MassHealth. Focus group participants who were Dorchester residents, for example, described needing specialty treatments for chronic or debilitating conditions but being denied coverage after a limited time. One focus group participant shared, *"The only thing that helps me with my condition is heated pool therapy, but MassHealth only covers it for 8 sessions. Why 8 weeks if my condition is lifelong?"* Others discussed challenges with dealing with the complexities of insurance coverage and figuring out what was even covered and what was not. As one focus group participant commented, *"It should never be this difficult to get insurance sorted out. If I miss one injection [of insulin], I could put my life in danger."*

Focus group participants who identified as low income, homeless, or as residents in recovery most frequently cited a need for better dental coverage, citing limited coverage with public insurance. One participant from Dorchester shared*, "I have so many holes in my mouth because MassHealth doesn't cover any filling or root canals. If you need anything other than a cleaning, it's not going to be covered. It's the bare minimum."*

Barriers to Health Care Access

While focus group, interview, and survey participants were positive about the quality and proximity of health care in their community, they still cited several concerns over access. The biggest barriers to health care access discussed in the focus groups were: being under-insured; language and immigration status; navigation and care coordination challenges; transportation; and lack of culturally-sensitive approaches to care. Cost was not identified as a major barrier to care for the majority of participants; however, a few focus group participants discussed cost barriers in relation to affording medication for chronic diseases, and the challenge of competing costs on a fixed income.

> "When you're stressed about the fact that not enough money is coming in, you have bills to pay, and then a medical issue that needs to be addressed, but you can't afford the treatment…you make hard decisions." — Focus group participant

Engagement with Health Care Providers and Staff

Unfriendly, uninterested, or rushed health care providers and office staff in health care settings were also issues that focus group participants mentioned. Some focus group participants described feeling "unseen" by their health care providers, citing feeling rushed or seeing providers who seemed disengaged. One East Boston resident shared, *"I went to the doctor, and no one looked me in the eyes; they sent me home with so many medicines, but no one asked me how I was…it's like they don't see the whole person."*

Navigating a Complex System

When discussing access to care, a prominent theme across focus groups and interviews was the challenge of navigating the complex health system. Focus group members spoke about the struggle understanding their health care benefits, reporting that they *"felt lost in the system."* Seniors were described as especially vulnerable to challenges navigating the health system. Several focus group participants emphasized that many simply do not know what resources are available to them or how to access them. One interviewee summarized, *"When you have to find services and then you have to go to them...when you've [experienced] trauma, coordinating all this stuff yourself is really hard; organizing and having to stay on top of it. We are not as good with coordination as a system; we've talked about it, but we don't really know what that looks like yet at the ground level."* Senior focus group participants also indicated that more efforts were needed to educate seniors on insurance coverage. One resident from Mattapan shared, "Medicare patients are expected to learn and understand how everything works, what they have and don't have on their own."

Participants identified a need for more navigation services that could help patients access services and resources across sectors. Multiple key informants and focus group participants identified peer navigators and community health workers as valuable resources. One focus group participant shared, "*Doctors only have a certain amount of time and you can't rely on them to talk to patients about everything. But there does need to be more navigators available to help patients understand and explain.*" Key informants echoed the value of these services; however, reimbursement models and funding constraints appear to make it difficult for organizations to fund these positions, as some key informants noted.

Transportation Barriers

Transportation was also mentioned by assessment participants as a challenge to accessing health care. Some focus group participants noted that public transportation is limited for accessing services locally as well as for accessing specialty care. One parent shared, "*My son has to see a specialist, but I don't drive, and it can take up to 3 hours to get to the specialty care [he goes to outside the city]."* Another key informant echoed this sentiment, sharing, "*We need more resources within the community so [residents] don't have to travel through a bunch of different neighborhoods. Even getting to BMC from Mattapan or Dorchester is a trek for a lot of people; are you really going to counseling when you have to take two busses and a train to get there?"*

Culturally-Sensitive Approaches to Care

For immigrant communities, participants described immigration status (e.g., undocumented vs. documented status) as a significant barrier to accessing health care. Key informants spoke of fear in undocumented or mixed status families which prevented residents from seeking care. One key informant explained, *"Immigrant populations face challenges [accessing care]. It is a hostile environment; even though we are a sanctuary city they do not feel safe."* Another key informant perceived that immigration fears were particularly prominent in the Latino community, one sharing, *"Hispanic folks are more worried that they will get picked up [by authorities]; there is a lot of real concern out there. Residents are going underground and there's a hesitation working on anything including treatment, health care, and housing."* Further, the need for increased linguistic capacity in the health care and social service landscape was also a

common theme among qualitative conversations, particularly in non-English focus group and key informants who worked in health and social services.

The importance of culturally-sensitive approaches to care were also discussed among multiple focus group and interviews. For example, some focus group participants spoke of cultural and gender norms of not seeking health care unless things are bad. One Mattapan resident expressed, *"Haitian men only take care of themselves when they are very sick. They [don't seek out] health care; women are likely to seek health care because they are having children and take care of their families."* Others spoke of preferences for non-Western approaches to care, with one interviewee sharing, *"Clients may have more stigmatized view of Western Medicine… may rely more heavily on natural healers that are more connected in the neighborhood."* These culturally-sensitive approaches to care were also described as imperative for religious minority groups, shared key informants. For example, one interviewee explained that there are misconceptions in the health field related to the Muslim community such as preferences for same-sex providers. They shared, *"Even in Boston, which is a very open, forward-moving city…we're viewed as being repressed because we don't shake hands or want male providers; but in my mind, it's about the choice of separation between men and women."*

Further, LGBTQ youth described the need for more LGBTQ-centric care but also stressed the importance of providers taking into considerations the many intersecting identifies that a patient could hold. For example, being a queer-identifying teenager who is also a person of color. As one young person described, *"We have to face a double whammy with already having the stigma of being LGBTQ and then adding race on top of that makes it even harder."*

CHNA Survey Respondent Barriers: Inconvenient Hours/Location, Cost, Transportation, and Provider Availability

Some of these themes were identified in the Boston CHNA survey, while survey respondents were also likely to cite wait times and availability of hours as issues to accessing care. When Boston CHNA survey respondents were asked about the factors that made it harder for them to get the health care services they needed in the past two years, issues related to convenience (long wait for an appointment (43.6%), lack of evening/weekend services (38.0%)), cost of care (33.7%), lack of transportation (18.9%), and office not accepting new patients (18.2%)) were cited as the top five most challenging issues (Figure 175); however none of these were cited by a majority of respondents. As shown in Table 32, many of these issues were similar across sub-populations by primary language, although instead of lack of transportation or office not accepting new patients being an issue, Chinese-speaking respondents indicated *"language problems/could not communicate with health provider or office staff"* and *"unfriendly doctors, providers, or office staff"* and Vietnamese-speaking respondents indicated *"afraid to ask questions or talk to doctors/medical people"* as challenges. Spanish- and Portuguese-speakers also indicated that *"don't have health insurance that covers what I need"* as a barrier to getting health care services in the last two years, while Haitian Creole-speaking respondents additionally cited *"don't know what types of services are available"* as a barrier.

Table 33 shows responses by additional sub-populations, including by race/ethnicity, parents who have children under 18 years old, LGBTQ respondents, and respondents under 18 and 65+ years old.

Figure 175. Percent Boston CHNA Survey Respondents Reporting Factors That Made It Harder for Them to Get Health Care Services They Needed in Past Two Years (N=1,014), 2019

Factor	Percent
Long wait for an appointment	43.6%
Lack of evening or weekend services	38.0%
Cost of care, including high deductibles, co-pays, etc.	33.7%
Lack of transportation	18.9%
Office not accepting new patients	18.2%
Lack of providers who accept my insurance	15.0%
Unfriendly doctors, providers, or office staff	12.9%
Don't have health insurance that covers what I need	12.3%
Don't know what types of services are available	11.1%
Afraid to ask questions or talk to doctors/medical people	10.8%
Afraid if I take the time off to get care, I'll lose my job	10.1%
I have no regular source of health care	8.8%
Felt discriminated against	7.0%
Language problems/could not communicate with health provider or office staff	4.1%
Instruction/directions are not in my language	2.5%
Health information is not kept confidential	1.9%
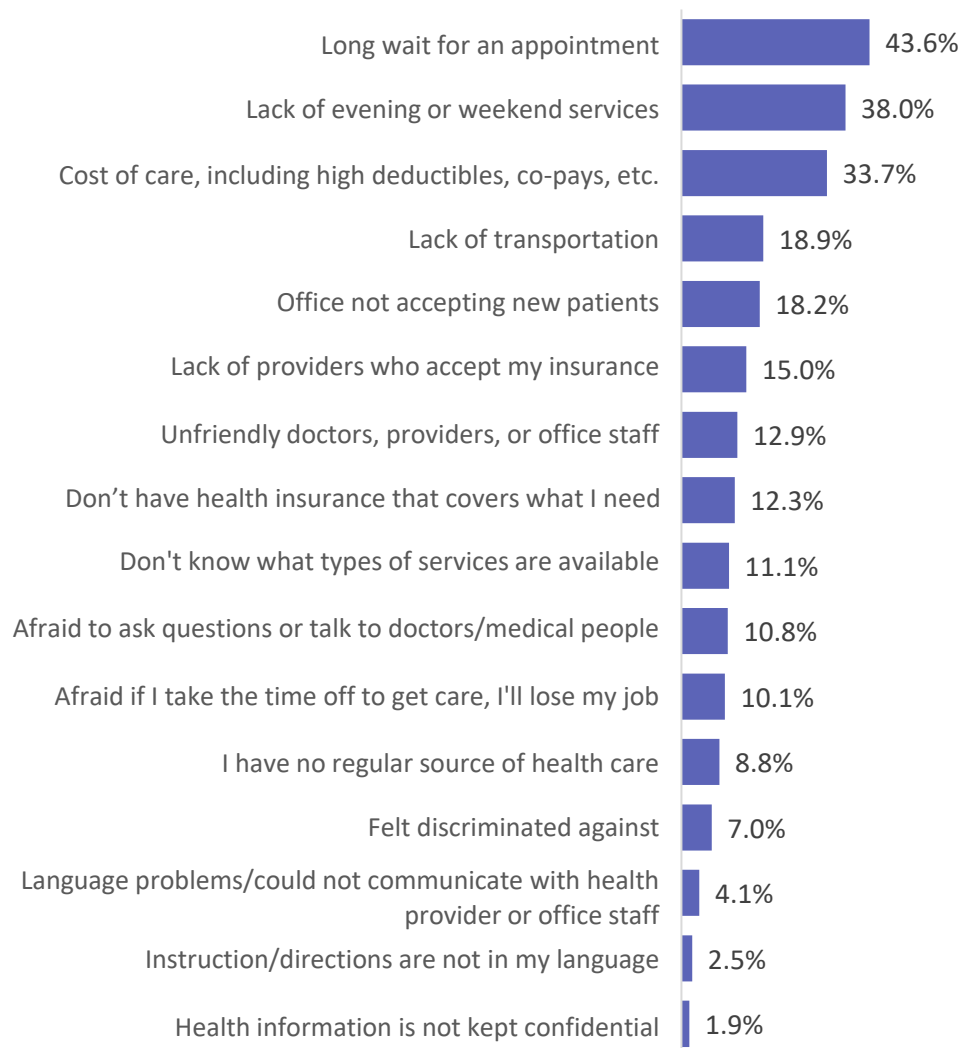
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Data arranged in descending order; Percentage calculations do not include respondents who selected "prefer not to answer/don't know" or "none of the above;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

Table 32. Percent Boston CHNA Survey Respondents Reporting Factors That Made It Harder for Them to Get Health Care Services They Needed in Past Two Years, by Primary Language Spoken, 2019

	Chinese (N=67)	English (N=905)	Haitian Creole (N=36)	Portuguese (N=25)	Spanish (N=200)	Vietnamese (N=45)
1	Long wait for an appointment	Long wait for an appointment	Cost of care	Long wait for an appointment (tied)	Long wait for an appointment	Long wait for an appointment
2	Lack of evening or weekend services	Lack of evening or weekend services	Long wait for an appointment	Lack of evening or weekend services (tied)	Lack of evening or weekend services (tied)	Cost of care
3	Cost of care	Cost of care	Lack of evening or weekend services	Cost of care	Cost of care (tied)	Lack of evening or weekend services (tied)
4	Language problems	Office not accepting new patients	Lack of transportation	Don't have health insurance that covers what I need	Lack of transportation	Afraid to ask questions or talk to doctors/medical people
5	Unfriendly doctors, providers, or office staff	Lack of transportation	Don't know what types of services are available	Lack of transportation	Don't have health insurance that covers what I need (tied)	Lack of providers who accept my insurance (tied)
Tie				Don't know what types of services are available	Office not accepting new patients (tied)	Don't know what types of services are available (tied)
Tie					Afraid if I take the time off to get care, I'll lose my job (tied)	
Tie					Lack of providers who accept my insurance	

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who responded "none of the above;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

Table 33. Percent Boston CHNA Survey Respondents Reporting Factors That Made It Harder for Them to Get Health Care Services They Needed in Past Two Years, by Selected Indicators, 2019

	Asian (N=152)	Black (N=200)	Latino (N=233)	White (N=361)	Parent of child under 18 (N=295)	LGBTQ (N=169)	Under 18 (N=83)	Asian (N=152)
1	Long wait for an appointment	Cost of care	Long wait for an appointment	Long wait for an appointment	Long wait for an appointment	Long wait for an appointment	Long wait for an appointment	Long wait for an appointment
2	Cost of care	Long wait for an appointment	Lack of evening or weekend services	Lack of evening or weekend services	Lack of evening or weekend services	Lack of evening or weekend services	Afraid to ask questions or talk to doctors/ medical people	Lack of transportation
3	Lack of evening or weekend services	Lack of evening or weekend services	Cost of care	Cost of care	Cost of care	Cost of care	Lack of evening or weekend services	Lack of evening or weekend services
4	Don't know what types of services are available	Lack of transportation	Lack of transportation	Office not accepting new patients	Lack of transportation	Office not accepting new patients	Don't know what types of services are available	Cost of care
5	Lack of transportation	Lack of providers who accept my insurance	Don't have health insurance that covers what I need	Lack of transportation	Lack of providers who accept my insurance	Lack of providers who accept my insurance	Cost of care	Language problems

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who responded "none of the above;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

Cost and Affordability of Care

While cost was not cited as the most critical barrier to health care access among focus group, interview, and survey respondents, specific questions on both the BRFSS and the Boston CHNA survey asked respondents if there was a time in the past 12 months when they needed to see a doctor or a dentist but could not because of the cost. Overall, cost is a much bigger barrier for dental care than it is for overall health care. Figure 176 shows that in the combined BRFSS data for 2013, 2015, and 2017, 10% of respondents did not see a doctor in the past 12 months due to cost, and responses differed significantly within some specific sub-populations by race/ethnicity, housing status, education, age, foreign or U.S. born, income, and employment. The dental question was only asked on the 2017 BRFSS, and results show that 17.4% of residents could not see a dentist in the past 12 months due to cost. Figure 177 shows results by different sub-populations.

Figure 176. Percent Adults Reporting Could Not Afford to See a Doctor in Past 12 Months, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined
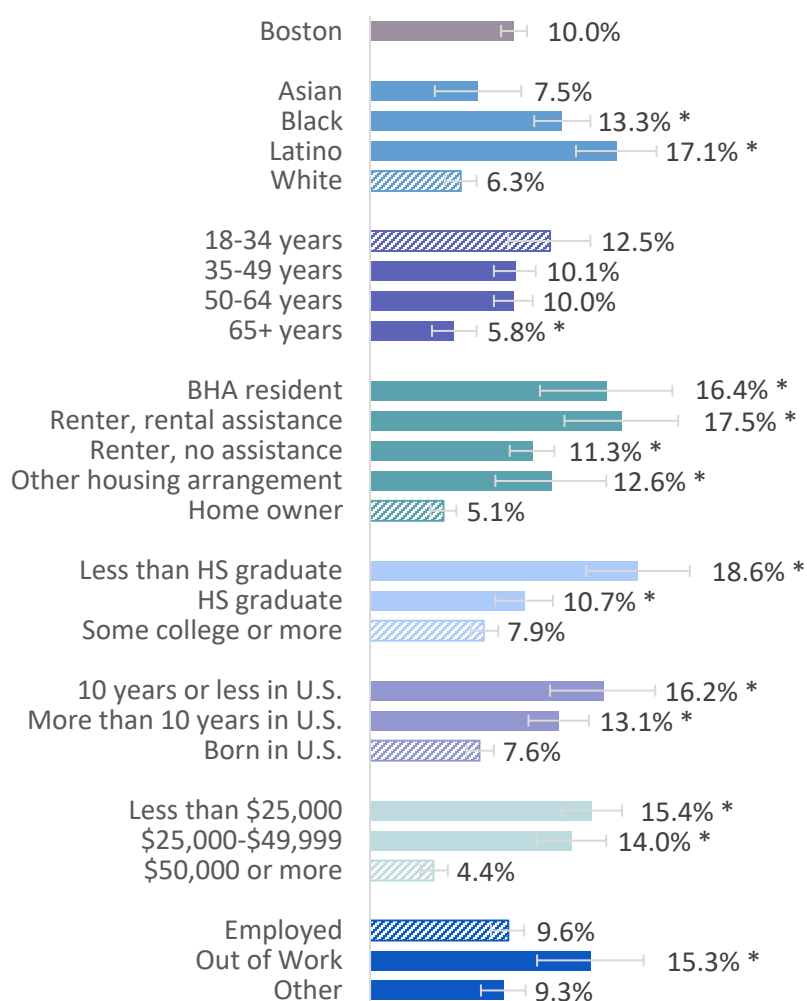
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Figure 177. Percent Adults Reporting Could Not Afford to See a Dentist in the Past Year, by Boston and Selected Indicators, 2017
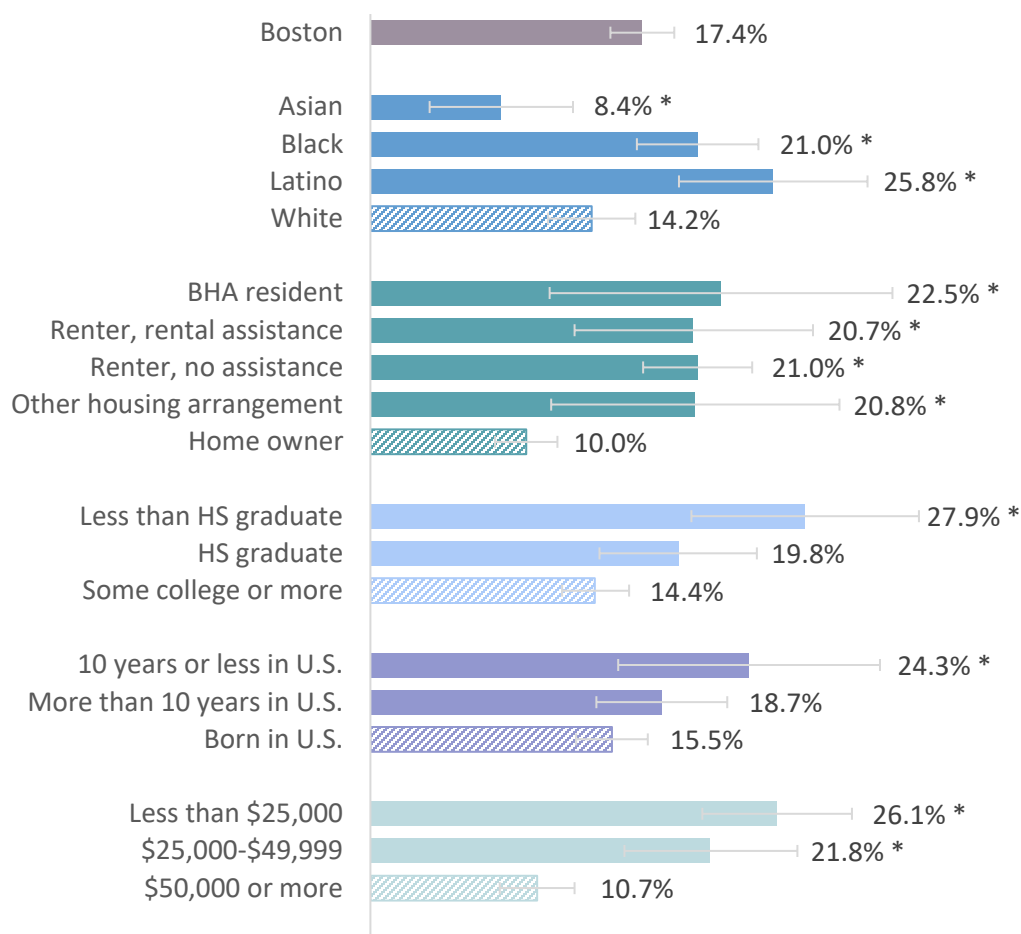
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

A similar question was asked on the 2019 Boston CHNA survey, and overall responses were slightly higher, with 12.5% of the sample indicating that they could not see a doctor in the past 12 months due to cost and 22.9% reporting this for a dentist. Figure 178 and Figure 179 present the survey responses to these questions by primary language spoken, although results should be interpreted with caution given the small sample sizes in some language groups.

Figure 178. Percent Boston CHNA Survey Respondents Reporting They Needed to See a Doctor but Could Not Because of Cost in Past 12 Months, by Primary Language, 2019
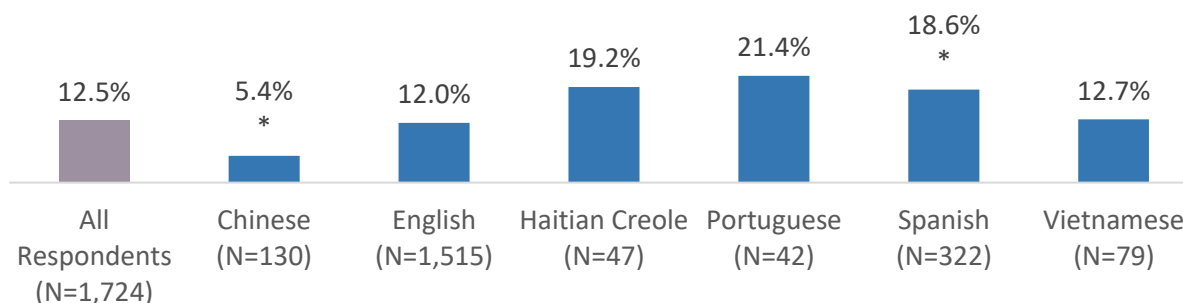
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Asterisk (*) denotes where estimate was significantly different compared to the rest of the survey sample

Figure 179. Percent Boston CHNA Survey Respondents Reporting They Needed to See a Dentist but Could Not Because of Cost in Past 12 Months, by Primary Language, 2019
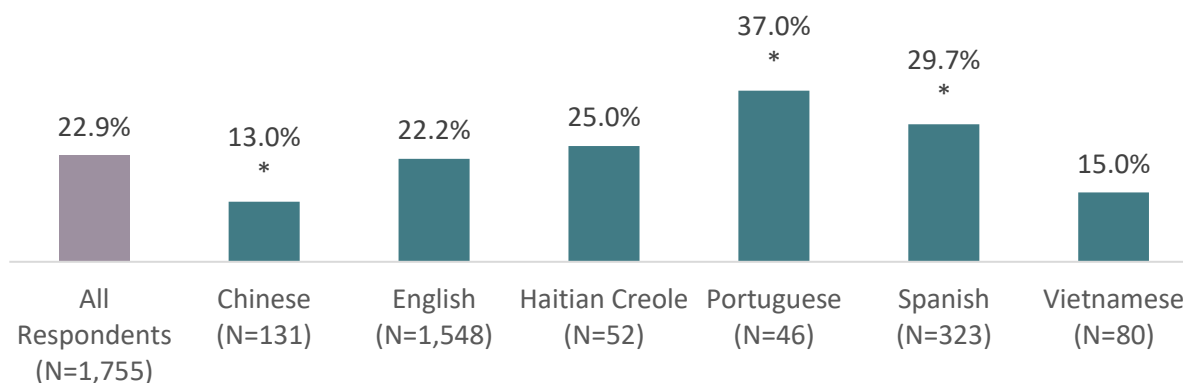
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Asterisk (*) denotes where estimate was significantly different compared to the rest of the survey sample

Facilitators to Health Care Access

While much of the discussions in the focus groups and interviews emphasized the challenges in accessing health care, having insurance and proximity to health care services were cited as factors that supported people's access to care. When Boston CHNA survey respondents were asked what factors made it easier for them to get the health care services they needed in the past two years, having a regular source of care (63.3%), having insurance cover what they needed (49.7%), providers taking their insurance (47.8%), having positive interactions with doctors, providers, or office staff (39.8%), and feeling comfortable asking questions (37.3%) were the top five factors cited (Figure 180).

Table 34 and Table 35 present the top five factors that different sub-populations noted made it easier for them to get the health care services they needed in the past two years. Table 34 shows these results by primary language spoken, and Table 35 presents results among different

racial/ethnic groups, parents of children under 18, LGBTQ respondents, and respondents who are under 18 and 65+ years old. While having a regular source of care and insurance covering what they needed was important for everyone, particular facilitators for some groups included: having positive interactions with doctors, providers, or office staff among Portuguese speakers, Vietnamese speakers, Black respondents, Asian respondents, parents, LGBTQ respondents, and those under 18 years old and 65+ years old; affordable care among Chinese-speaking and Haitian Creole-speaking respondents; and having providers or staff speak their language/understand their culture among Chinese speakers, Vietnamese speakers, Asian respondents overall, and youth survey respondents under 18 years old. Availability of public transportation was also helpful for many survey respondents.

Figure 180. Percent Boston CHNA Survey Respondents Reporting Factors That Made It Easier for Them to Get Health Care Services They Needed in Past Two Years (N=1,509), 2019
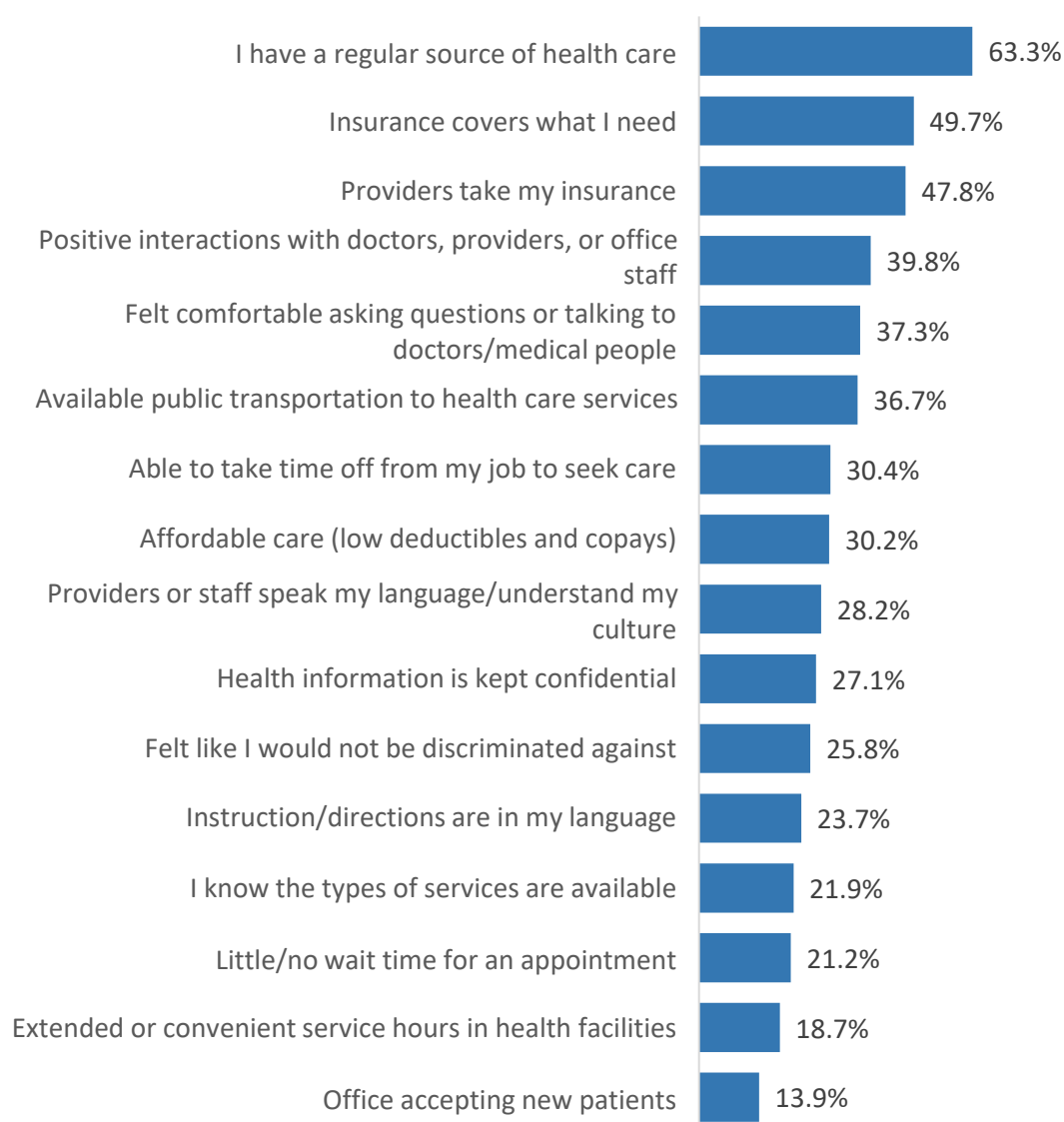
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Data arranged in descending order; Percentage calculations do not include respondents who selected "prefer not to answer/don't know" or "none of the above;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

Table 34. Percent Boston CHNA Survey Respondents Reporting Factors That Made It Easier for Them to Get Health Care Services They Needed in Past Two Years, by Primary Language, 2019

	Chinese (N=124)	English (N=1,320)	Haitian Creole (N=41)	Portuguese (N=33)	Spanish (N=276)	Vietnamese (N=71)
1	I have a regular source of health care	I have a regular source of health care	I have a regular source of health care	I have a regular source of health care (tied)	I have a regular source of health care	Insurance covers what I need
2	Providers or staff speak my language/ understand my culture	Insurance covers what I need	Affordable care	Positive interactions with doctors, providers, or office staff (tied)	Insurance covers what I need	Positive interactions with doctors, providers, or office staff (tied)
3	Insurance covers what I need	Providers take my insurance	Insurance covers what I need (tied)	Available public transportation to health care services	Available public transportation to health care services	I have a regular source of health care (tied)
4	Affordable care	Positive interactions with doctors, providers, or office staff	Available public transportation to health care services (tied)	Insurance covers what I need (tied)	Providers take my insurance (tied)	Health information is kept confidential
5	Available public transportation to health care services	Felt comfortable asking questions or talking to doctors/medical people	Providers take my insurance	Providers take my insurance (tied)	Felt comfortable asking questions or talking to doctors/ medical people (tied)	Providers or staff speak my language/ understand my culture (tied)
Tie			Felt like I would not be discriminated against	Felt like I would not be discriminated against (tied)	Positive interactions with doctors, providers, or office staff	Instruction/direct ions are in my language (tied)

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Data arranged in descending order; Percentage calculations do not include respondents who selected "prefer not to answer/don't know" or "none of the above;" Respondents were allowed to select multiple response options

Table 35. Percent Boston CHNA Survey Respondents Reporting Factors That Made It Easier for Them to Get Health Care Services They Needed in Past Two Years, by Select Indicators, 2019

	White (N=547)	Black (N=306)	Latino (N=316)	Asian (N=247)	Parent of child under 18 (N=455)	LGBTQ (N=216)	Under 18 years (N=140)	65+ years (N=185)
1	I have a regular source of health care	I have a regular source of health care	I have a regular source of health care	I have a regular source of health care	I have a regular source of health care	I have a regular source of health care	Insurance covers what I need	I have a regular source of health care
2	Providers take my insurance	Providers take my insurance	Insurance covers what I need	Insurance covers what I need	Providers take my insurance	Providers take my insurance	I have a regular source of health care	Insurance covers what I need
3	Insurance covers what I need	Insurance covers what I need	Available public transportation to health care services	Providers or staff speak my language/ understand my culture	Insurance covers what I need	Insurance covers what I need	Positive interactions with doctors, providers, or office staff	Felt comfortable asking questions or talking to doctors/medical people
4	Positive interactions with doctors, providers, or office staff	Available public transportation to health care services	Providers take my insurance	Providers take my insurance (tied)	Positive interactions with doctors, providers, or office staff	Felt comfortable asking questions or talking to doctors/medical people	Available public transportation to health care services	Positive interactions with doctors, providers, or office staff
5	Felt comfortable asking questions or talking to doctors/medical people	Positive interactions with doctors, providers, or office staff	Felt comfortable asking questions or talking to doctors/medical people	Positive interactions with doctors, providers, or office staff (tied)	Available public transportation to health care services	Positive interactions with doctors, providers, or office staff	Providers or staff speak my language/ understand my culture	Providers take my insurance
				Available public transportation to health care services				

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Data arranged in descending order; Percentage calculations do not include respondents who selected "prefer not to answer/don't know" or "none of the above;" Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

COMMUNITY RESIDENTS' AND LEADERS' VISION AND SUGGESTED OPPORTUNITIES

Participants in interview and focus group discussions were asked for their suggestions for addressing identified needs and their vision for the future. This section summarizes and presents these recommendations for future initiatives.

- **Employment and Workforce-** Focus group participants commonly discussed challenges securing well-paying jobs due barriers that include educational requirements, hiring processes, technology skills, and having a criminal record. Community suggestions to address employment barriers include addressing minimum education requirements to be more inclusive of those with valuable lived experience; subsidizing the cost of childcare so low-income parents can work towards upward mobility through education and job training; and increasing meaningful employment opportunities for young people, especially during the summer and school breaks. Participants shared that it would be imperative that these efforts focus on "21st century skills" like technology, professional communication, information literacy, and critical thinking. Increasing access to trade professions like machine training, carpentry, and electrical work were also described as valuable.
- **Income and Financial Security-** These were often discussed in the context of access to employment and income inequality. Participants talked about the challenges making ends meet due to low-wage jobs with little room for advancement. Specific suggestions include investments that enhance access to careers for Boston youth that lead to stable employment and economic mobility, and pathways for immigrant communities and non-English speakers to professional advancement in order to engage a workforce that meets the needs of a diverse population.
- **Education-** Children with special needs, undocumented students, and those who have experienced trauma were identified as groups that needed more support in and outside of the classroom. Suggestions were made to focus resources on early childhood education, especially for children ages 0-5; increase social supports in public schools, particularly in communities of color; train educators on trauma-informed approaches to recognize trauma symptoms and respond accordingly; use restorative justice approaches to discipline and behavior issues; and address chronic absenteeism by bolstering wrap around services like in-home therapy, community field coordinators, and therapeutic mentors.
- **Food Insecurity-** Key informant interviews and low-income focus group participants across neighborhoods discussed the challenge of not having enough money to afford the food they and their families needed. Participants identified seniors and children as being especially vulnerable to being food insecure. Suggestions were made to increase opportunities to access healthy and affordable food through: urban farming and community gardens; farmer's markets that accept SNAP benefits; and strengthening initiatives that address food access from a clinical perspective, where practitioners can prescribe services and are reimbursed as part of the ACO plans.

- **Housing-** Focus group and interview participants stressed the importance of mitigating the negative impacts of gentrification and displacement by creating more opportunities for home ownership in non-White communities to build generational wealth; and pushing for long-term renewable leases for nonprofits and social services agencies that are being strained by rising costs to operate. Other specific suggestions include: exploring small property acquisitions to develop community affordable housing; supporting nonprofit developers; investing in more senior housing and supports; and increasing linkage fee programs—an alternative to traditional inclusionary housing programs that attempt to link the production of market-rate real estate to the production of affordable housing. Key informant interviewees also noted ACO implementation as an opportunity to strengthen and coordinate the housing and health care sectors. Leveraging hospital community benefit funding with Medicaid flex service dollars may provide an opportunity for greater investment in housing instability. Additionally, moving these health care-housing partnerships to providing place-based/housing-based services for health care and social services would reach people where they live with the range of medical and ancillary services that they need in a coordinated way.
- **Transportation-** Some focus group participants reported being generally satisfied with transportation access in their neighborhoods, while others voiced concerns about cost, timeliness, and accessibility—especially for the elderly. Specific suggestions include focusing on transportation equity in lower income communities that tend to have longer commuting times; be engaged in reducing traffic by investing in speedy bus lanes; continue making the city more bikeable; and exploring fee structures for ride share programs to generate revenue for operational costs at the local level.
- **Chronic Disease-** Interview participants indicated that there is a need to focus on prevention strategies and chronic disease management—particularly to prevent diabetes and obesity. Community residents indicated the need for more affordable gym and healthy food options, especially in the winter time and especially for young people during school breaks. Community residents suggested investing in exercise stations in public parks and within community health centers. There were also suggestions to invest in community outreach efforts to increase public knowledge about prevention of chronic diseases in trusted community spaces like faith-based organizations and in public schools.
- **Mental Health-** Stress, anxiety, and depression were the most frequently-cited challenges among Boston residents. Community suggestions to address mental health issues include investing in more mental health supports in public schools—especially for young children who have experienced trauma and for underserved communities like non-English speakers, LGBTQ residents, and homebound seniors. Also stressed was the importance of reducing cultural stigma around mental health services and recruiting more clinicians who reflect the rich racial and ethnic diversity of Boston.

  ▶ According to community participants, it will be imperative to consider intersecting identities and social statuses that may be salient to mental health approaches, for example, those who identify as queer people of color or immigrant parents of children with special needs. In terms of careers in the field of mental health and substance use, participants stressed that it will be important to address systemic barriers that detract professionals from seeking careers in the field due low salaries, emotionally demanding work, and stringent certification requirements. Suggestions include: investing in micro degrees that allow residents to advance professionally in a less costly way; invest in

student loan forgiveness initiatives; forging stronger connections between learning institutions and the job market; and addressing fee for service models and reporting requirements that limit service-delivery and creativity.

- **Substance Use-** Assessment participants mentioned a variety of substances including opioids, marijuana, and prescription drug use as issues in their communities. Participants were especially concerned about the impact of substance use disorders on young people and suggested focusing on prevention efforts, especially related to marijuana use and prescription drug use among adolescents.

- **Violence and Trauma-** Community violence was reported as a frequent concern by focus group participants, with children and communities of color being disproportionately affected. Intimate partner violence was also mentioned by participants who identified non-English speaking immigrants as particularly vulnerable. Suggestions to address violence and trauma in the city include: restoring trust among government, police, and health care institutions by strengthening community linkages and improving community cohesion. Specific examples include intergenerational programs and services that are specific to diverse affinity groups; a multi-faceted approach to community safety that includes community-based policing, strengthening partnerships with community-based organizations and law enforcement, and transparency through venues like community share-outs. Hosting these events in familiar spaces like faith-based organizations, libraries, and community centers will be important. In terms of trauma, suggestions were made to: invest in trauma-informed approaches beginning in early childhood and continuing throughout high school; build on the work of local groups to avoid duplicative services; widen the trauma-informed care lens by expanding neighborhood trauma teams and bringing interdisciplinary groups together; and focusing on familial responses to trauma from a community-driven, grassroots approach. Also stressed was the importance of compensating community members for their participation and expertise in these efforts via a stipend.

- **Maternal and Child Health**- A common theme that emerged among focus group with parents—many of whom identified as single mothers—was the need for more supports to learn positive parenting skills. Unaffordable and inconvenient childcare was also mentioned as a significant concern among focus group participants; suggestions were made to subsidize the cost of childcare for low-income families, especially for single-headed households. Additionally, a few key informants noted the lack of data on child health in the city, which made it difficult to enumerate a problem or track change. They saw the Boston Census survey supplement on child care and other new data initiatives starting to fill this gap, but would look forward to more robust and collaborative efforts on data gathering around child health.

- **Environmental Health**- Environmental health concerns such as climate change and air pollutants were discussed among assessment participants. There were suggestions to address environmental health concerns in a systemic way and in partnership across sectors and disciplines, especially as new developments increase across the city. According to key informants, it will be important to target neighborhoods that have been deemed as high-risk by initiatives such as Climate Ready Boston. There were also suggestions to invest in a centralized data repository to track environmental health data in order to more accurately measure extreme heat days, flooding, and natural disasters; these data will facilitate more meaningful discussions related to climate change's impact on health care costs.

- **Health Care Access-** The biggest barriers to health care access discussed in the focus groups were: being under-insured; language and immigration status; navigation and care coordination challenges; transportation; and lack of culturally-sensitive approaches to care. Suggestions related to health care access was to increase supports for navigating the complex health system and delivering culturally-sensitive care and linguistically appropriate services to diverse groups. Community residents shared that it will be essential to train staff from diverse communities for professional roles such as peer navigators and interpreters. Other areas to focus on according to assessment participants include bolstering oral health services for those on public insurance, addressing re-imbursement barriers for sustaining positions like peer navigators and community health workers; and mitigating transportation barriers by exploring alternatives such as ride share stipends for patients.

  ► Collaboration between different organizations and agencies were identified as a strength and has improved in recent years; however, **respondents identified a need for even greater collaboration and information/data sharing to better serve their patients and clients, especially related to the roll out of Accountable Care Organizations.** Specific suggestions include incentivizing collaboration between health care and community-based organizations in an equitable way and using data to that translates into a real implementation action plan that is owned by a convener who will drive the plan forward and hold institutions accountable.
  ► From a key informant perspective, funding was top of mind for sustaining efforts across the public and health care sector to stabilize and enhance programming. Specific suggestions including **pursuing multi-year funding that allow organizations to respond to crisis and opportunities, and to build internal and external capacity.** Other suggestions include diversifying funding streams to focus on private and philanthropic endeavors as federal and state funding becomes more limited. For example, there were suggestions to model Rhode Island's health equity zones that focus on place-based investments in the built environment for the most at-risk neighborhoods.

KEY THEMES AND CONCLUSIONS

The Boston CHNA-CHIP Collaborative used a participatory, collaborative approach to conduct the first joint citywide CHNA through a review of existing data, community survey, and discussions with community residents and key informants. This assessment report provides a comprehensive overview of the health-related needs, strengths, and resources of Boston – including specific population groups – within a socioeconomic context to inform future planning. Overarching themes that emerged from this synthesis that cut across multiple topic areas include the following:

- **Health disparities across most issues show similar patterns by racial/ethnic group and socioeconomic status, and mirror the historical inequities brought about by generations of institutional racism, structural barriers, and discriminatory policies.** Whether differences in cancer mortality or asthma prevalence – or unemployment rates and housing instability – similar patterns can be seen in the data, with communities of color, immigrant communities, lower income individuals, and residents of low resourced neighborhoods, among others, experiencing a disproportionate burden across nearly all areas. Although current data sources are not currently designed to be able to examine intersecting identities more deeply, this disproportionate burden is likely even worse when considering intersectionality—that is, the complex, cumulative way in which the effects of multiple forms of discrimination (such as racism, sexism, and classism) combine, overlap, or intersect, especially in the experiences of marginalized groups. These issues are dynamically intertwined and reflect the cumulative and current challenges residents face resulting from historical and structural inequities across multiple systems.
- **With a current population of nearly 670,000 residents, Boston has experienced—and is expected to continue to experience—population growth across every neighborhood in the city, though growth rates across neighborhoods vary.** Overall, Boston is a young city, with about one-third of residents under the age of 24, that continues to experience population growth. The greatest increases in population have occurred in Roxbury, South Boston, Hyde Park, East Boston, and Charlestown.
- **Boston is a richly diverse city in terms of racial, ethnic, and linguistic population groups, though data show this diversity is not similar across neighborhoods.** Boston's large immigrant and non-English speaking communities were identified as facing unique challenges related to social and economic factors as well as navigating the health care system. The wide-ranging diversity of Boston residents presents challenges when delivering health and social services that aim to meet the multitude of needs across the city. Additionally, CHNA community survey results and conversations in focus groups indicated that subtle and overt discrimination is an issue in Boston, particularly for immigrants and non-English speakers, LGBTQ residents, youth and older residents, substance users and the homeless.
- **Although unemployment rates are low and there is economic opportunity for many residents across the city, there are substantial differences in financial security across neighborhoods and racial and ethnic groups.** The median household income in Boston is $62,021 but ranges from $27,964 in Dorchester to $170,152 in South Boston. In four communities—Dorchester, Fenway, Roxbury and the South End— approximately 25-37% of residents live below the federal poverty level. Focus group and interview participants

discussed the role poverty plays in exacerbating health challenges, particularly among vulnerable groups. Quantitative data show that risk-related behaviors and health outcomes generally continue to have inverse relationships with socioeconomic factors.

- **Housing affordability and its implications emerged as a key theme that arose across secondary data, the community survey, and focus groups and interviews.** Of all social determinants identified as imperative to health and well-being, housing stability emerged as a top priority among participants. More than half of those in renter-occupied units across the city are housing cost-burdened, meaning they spend more than 30% of their income on housing. Residents frequently discussed issues of gentrification, long wait lists for Section 8 housing, housing discrimination, overcrowding, and poor housing quality as consequences of a tight and expensive housing market.

- **The impact of chronic diseases and their risk factors—especially diabetes, obesity, and pediatric asthma—emerged as a priority concern among residents.** Residents of color, as well as residents who live in Roxbury and Dorchester are disproportionately affected by chronic diseases. Assessment participants frequently discussed a number of social determinants that presented challenges to the prevention and management of these chronic conditions. In addition to poverty and high housing costs that force individuals to prioritize their spending, a lack of affordable recreational programming and access to nutritious food were described as barriers to health and well-being. Lower income neighborhoods were described as having fewer affordable gyms, grocery stores, and fast food and convenience stores compared to affluent areas.

- **Behavioral health, specifically mental health and drug addiction among young people are growing concerns among community residents; opioids, prescription medication, and marijuana use were reported as most concerning.** Co-occurring mental health and substance use issues were frequently discussed among key informants, as well as the interrelationship between trauma, mental health, and substance use. Quantitative data show that one in five Boston residents report persistent anxiety and this proportion has increased over time. The rate of opioid overdose deaths in Boston has also significantly increased, particularly among Latino residents. Specific population groups are disparately affected by mental health and substance use, especially residents who are younger, LGBTQ, lower income, and of communities of color.

- **Violence-based trauma was identified as a major factor of negative community health outcomes, and there is a need for more trauma-informed approaches to care, particularly for children and communities of color.** One in four Boston CHNA community survey respondents described their neighborhoods as unsafe or extremely unsafe, with Black and Latino respondents more likely to describe their communities this way. Apart from community violence and intimate partner violence, assessment participants identified poverty, and more recently, the fear of deportation and family separation, as a growing issue. Exposure of children and youth to unhealthy relationships and violence (adverse childhood experiences) is also of concern: nearly one in five Boston adults reported experiencing one adverse experience over their lifetime.

- **Environmental health risk factors are a particular concern in relation to air quality, effects of climate change, and the built environment.** Poor environmental health quality has the greatest impact on low-income communities. Issues such as noise and air pollution and dangerous traffic were prominent concerns among survey respondents. Indoor air quality is also an issue, and more than one in ten Boston adults on the BRFSS reported exposure to secondhand smoke, with Asian, Black, and Latino residents all significantly

more likely than White residents to report exposure. The effects of climate change were also noted, with flooding being one of the most significant issues. Boston emergency department utilization rates and costs for climate-driven health issues are expected to rise in the future. Climate change projections estimate that 7% of Boston's land area could be exposed to frequent stormwater flooding by 2050.

- **Boston has many health care and social service assets that can be leveraged, but access to those services is a challenge for some residents.** Proximity of health care services and education institutions, diversity and multiculturalism, and engaged residents were noted as key strengths among Bostonians that can be leveraged in future planning. Barriers to care were multifaceted and included underinsurance, language and immigration status, navigation and care coordination challenges, transportation, and lack of culturally-sensitive approaches to care.

- **Strengthening partnerships and infrastructure for collaborative data gathering and sharing can facilitate greater coordination and identify specific population groups most in need.** Undertaking this collaborative CHNA demonstrated that organizations can leverage their strengths and resources for collaborative assessment and planning. However, as extensive as the data gathering was for this effort, it also identified current limitations. Large datasets are not necessarily available on some population groups such as residents who speak specific languages or on particular topics such as child health ages 0-14 years old. Additionally, data sharing across organizations and agencies is challenging. As the Collaborative engages in further planning, there is opportunity ahead to strengthen the relationships, practices, and infrastructure to address these data limitations. In the future, potentially more granular analyses by neighborhood, topic, or population group can be conducted to help tailor strategies for action.

PRIORITIES FOR COLLABORATIVE ACTION

The Boston CHNA-CHIP Collaborative aims to undertake a collaborative planning process May - September 2019 to identify the prioritized issues on which this cross-sector group will take action. The planning process includes identifying priorities, goals, measurable objectives, strategies, and success metrics for a three-year community health improvement plan (CHIP).

The first step in the planning process is to identify the priorities for the CHIP. Prioritization allows institutions and organizations to target and align resources, leverage efforts, and focus on achievable strategies and goals for addressing priority needs. Through a systematic, engaged approach that is informed by data, priorities are identified for the Collaborative to focus its planning efforts. This section describes the process and outcomes of the Boston CHNA-CHIP Collaborative prioritization process.

Process and Criteria for Prioritization

In April 2019, the CHIP work group—comprised of representatives from hospitals, health centers, community organizations, and the Boston Public Health Commission—developed prioritization criteria and an engagement strategy for identifying 2-4 priority needs for the subsequent Community Health Improvement Plan. Criteria were selected to assess the magnitude of community issues and their impact on the most disadvantaged population groups. The criteria and guiding questions selected are below; full definitions of each of these criteria can be found in Appendix J.

- **Burden:** How much does this issue affect health in Boston?
- **Equity:** Will addressing this issue substantially benefit those most in need?
- **Impact:** Can working on this issue achieve both short-term and long-term change?
- **Feasibility:** Is it possible to address this issue given infrastructure, capacity, and political will?
- **Collaboration:** Are there existing groups across sectors willing to work together on this issue?

Prioritization Process

The prioritization process was multi-stepped and aimed to be inclusive, participatory, and data-driven. During May 2019, several steps were taken to identify the final 2-4 priorities for the planning process.

Early-Mid May 2019

First, a 16-page draft Executive Summary of this CHNA report was sent to over 150 organizations and individuals along with an online survey for prioritization. The online survey included 19 key issues that emerged from the draft CHNA and participants were asked to rate each issue against each of the five criteria (burden, equity, impact, feasibility, and collaboration) from 1-4 with 1=low, 2=medium, 3=high, and 4=very high. Figure 181 indicates the average score across the five criteria for the issues rated.

Figure 181. Rating Tool Average Score of 1=Low, 2=Medium, 3=High, 4=Very High across Five Criteria (Burden, Equity, Impact, Feasibility, and Collaboration), (N=38 organizations), 2019

Criteria	Score
Housing Affordability & Quality	3.25
Substance Use	3.22
Food Insecurity/Hunger	3.11
Mental Health	3.10
Employment & Income/Financial Insecurity	2.96
Community violence	2.88
Education	2.85
Homelessness	2.84
Obesity, Healthy Eating, Physical Activity	2.72
Accessing Healthcare	2.66
Accessing Childcare and Other Services	2.66
Cancer	2.62
Asthma	2.60
Smoking and Vaping/E-cigarettes	2.59
Heart disease	2.57
Interpersonal Violence	2.56
Diabetes	2.54
Climate Change and Environmental Concerns	2.45
Transportation & the Built Environment	2.43

Concurrently in early to mid-May, numerous small group discussions occurred throughout the city with community residents, organizational staff, and other stakeholders. These discussions included a data presentation of the draft CHNA key findings, overview of the 19 key issues that emerged and the five criteria used for prioritization, and an interactive discussion with participants on what priorities rose to the top for them based on these criteria. Ten meetings were held with 121 individuals. Participants included community residents from Roxbury, Mattapan, and Jamaica Plain (three community meetings), members of the Boston Board of Health, nine City of Boston departments, leadership from community health centers across Boston, and members of health care institutions' community advisory committees/ community advisory boards. A number of priorities commonly rose to the top in these qualitative discussions:

- **Housing** – specific concerns related to affordability, displacement, gentrification, homelessness
- **Employment & income** – specific concerns related to job opportunities and economic security; important to focus on upstream inequities
- **Mental health** – critical to note that many mental health issues co-occurring with substance use; concerns around availability of services and barriers to accessing services
- **Substance use** – critical to note that many substance use disorders are co-occurring with mental health issues; specific concerns around opioids, alcohol, and youth smoking
- **Violence & trauma** – specific concerns related to community safety and the impact of trauma on mental health

- **Chronic conditions** – specific concerns related to obesity, healthy food access, cancer, and diabetes
- **Food insecurity** –specific concerns around economic insecurity and the connections to obesity

The results from the online prioritization rating survey and small group discussions were used to refine the priority list from 19 topics to the following 9 potential priorities:

- Housing – Affordability, Quality, and Homelessness
- Food Insecurity/Hunger
- Employment & Income/Financial Insecurity
- Education
- Substance Use
- Mental Health
- Community Violence
- Obesity, Healthy Eating, Physical Activity
- Accessing Health care, Childcare, & Other Services

Late May 2019

The next step in the prioritization process was a large in-person meeting for further engagement and refinement in the prioritization process. On May 29, 2019, over 100 community residents and organizational staff across a multitude of sectors community residents attended a three-hour evening meeting in Roxbury. This meeting included a brief data presentation on the key findings from the draft CHNA, a description of the prioritization process thus far and the refined set of nine priorities, small group discussions, and a large group voting process. The goal of the voting process was to identify 2-4 priorities for collaborative planning.

During the voting process, each participant received four dots, to vote for four issues among the nine (one dot per issue). The results of the dot voting can be found in Table 36.

Table 36. Initial Results of May 29th Prioritization Meeting Dot Voting Process

Topic	Total Votes
Housing – Affordability, Quality, and Homelessness	66
Employment & Income/Financial Insecurity	63
Mental Health	48
Access to health care, childcare, & other services	32
Education	31
Food Insecurity/Hunger	26
Substance Use	20
Community Violence	15
Obesity, Healthy Eating, Physical Activity	10
Other	1

After the dot voting process, participants discussed the results to identify the top priorities. Participants suggested combining mental health and substance use into the more inclusive category of behavioral health and to consider integrating education into the category of

employment and income/ financial security. At the end of the discussion, participants were leaning towards the top priorities as:

- Housing
- Behavioral Health
- Employment, Income/Financial Insecurity, and Education
- Access to Health care, Childcare, and Other Services

Early June 2019

In early June 2019, the Boston CHNA-CHIP Collaborative Steering Committee met to discuss the identified priorities and to brainstorm a cross-cutting/overarching focus to frame future planning. From that discussion, the Steering Committee recommended renaming the Employment, Income, and Education priority to be *Financial Security and Mobility* to encapsulate how employment, income, education, and workforce training are all critical and inter-related factors that can contribute to financial security.

Additionally, there was a strong movement to have a cross-cutting and overarching focus for the plan to guide this collaborative work. Discussions centered on an overarching focus being racial equity to recognize that institutional racism and structural inequities are what drive the health inequities we see around race, ethnicity, and language in the city.

Prioritized Needs for Collaborative Planning

After further definition and refinement of the priorities and cross-cutting/overarching plan focus by the Steering Committee and CHIP work group in mid-June, the final prioritized needs for the planning process are:

- **Housing** (including affordability, quality, homelessness, ownership, gentrification, and displacement)
- **Financial Security and Mobility** (including jobs, employment, income, education, and workforce training)
- **Behavioral Health** (including mental health and substance use)
- **Accessing Services** (including health care, childcare and social services)

The cross-cutting and overarching focus of the planning process will be around *Achieving Racial and Ethnic Health Equity* recognizing that institutional racism and structural inequities are what drive the health disparities we see around race, ethnicity, and language in the city for nearly all issues.

Next Steps

From June-September 2019, the Boston CHNA-CHIP Collaborative, in conjunction with key stakeholders and community residents, will develop an implementation strategy that outlines next steps to address the prioritized health needs from the CHNA. The CHIP development process will commence with a full-day planning session in late June 2019 to develop the initial output for the goals, objectives, and strategies within each priority area. Further refinement and development of the CHIP will occur during the summer 2019, with a final CHIP report and Year 1 Action Planning to be completed by September 2019.

NEIGHBORHOOD PROFILES

The following section presents one-page summaries by neighborhood of key social, economic, and health indicators included in this report.

As noted in the beginning of this report, Boston neighborhoods can be identified in several ways. In this report, zip codes are used to identify neighborhood boundaries since this information is collected with health data analyzed by Boston Public Health Commission and is consistent with previous Health of Boston reports. Please note that the zip code neighborhood definitions used in this report may differ from what are used by other organizations and agencies.

The zip codes used in this report for identifying neighborhoods are those currently used by the United States Postal Service (USPS). USPS zip codes are not based on geography, demographics, or population size; they are collections of mail delivery routes that are defined at the convenience of the U.S. Postal Service and may change from time to time.

Data from the U.S. Census Bureau comes in the form of Zip Code Tabulation Areas (ZCTAs), generalized areal representations of USPS zip code service areas. ZCTA is a trademark of the U.S. Census Bureau whereas ZIP Code is a trademark of the U.S. Postal Service.

Neighborhood	Zip Codes/ZCTAs
Allston/Brighton	02134, 02135, 02163
Back Bay (includes Downtown, Beacon Hill, North End, West End)	02108–02110, 02113–02114, 02116, 02199
Charlestown	02129
Dorchester (zip codes 02121, 02125)	02121, 02125
Dorchester (zip codes 02122, 02124)	02122, 02124
East Boston	02128
Fenway	02115, 02215
Hyde Park	02136
Jamaica Plain	02130
Mattapan	02126
North End	02113
Roslindale	02131
Roxbury	02119, 02120
South Boston	02127, 02210
South End (includes the zip code typically used to identify Chinatown (02111))	02111, 02118
West Roxbury	02132

Allston/Brighton	Allston/ Brighton	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	63,270	669,158	--
% population under 18 years (2013–2017)†	9.1%	16.3%	L
% population 65 years and over (2013–2017)†	10.6%	11.0%	S
% population foreign born (2013–2017)†	29.2%	28.3%	S
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	4.9%	7.3%	L
% population 25 years and over with less than a high school diploma (2013–2017)†	8.3%	13.9%	L
% individuals living below poverty level (2013–2017)†	22.4%	20.5%	S
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	16.7%	21.3%	S
Housing			
% renter-occupied housing units (2013–2017)†	79.7%	64.7%	H
% households where housing costs are 30% or more of household income for renters (2013–2017)†	52.8%	52.1%	S
% housing units experiencing overcrowding (2013–2017)††	2.2%	3.1%	L
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	71.0%	80.1%	L
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	12.7%	10.0%	S
% adults reporting could not afford dental care (2017)	19.8%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	31.5%	24.6%	H
% adults reporting cigarette smoking (2013, 2015, 2017)	17.0%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	14.0%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	28.0%	21.3%	H
Suicide rate per 100,000 residents (2012–2016)	4.6	6.7	S

Allston/Brighton	Allston/ Brighton	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	NA	16.4	––
Homicide by firearms rate per 100,000 residents (2011–2016)	0.8	3.8	L
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	20.2%	13.0%	H
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	17.7%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	49.7%	56.8%	L
% adults reporting diabetes diagnosis (2013, 2015, 2017)	4.3%	8.5%	L
Overall cancer mortality rate per 100,000 residents (2015–2017)	144.5	160.0	L
Heart disease mortality rate per 100,000 residents (2016–2017)	140.3	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	17.4%	24.7%	L
% adults reporting current asthma (2013, 2015, 2017)	10.3%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	132.0	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.8%	2.0%	S
% low birthweight births (2017)	8.2%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	3.8%	2.3%	––
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	304.9	855.8	L
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	13.6%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	155.8	200.1	L

NOTES: *Rest of Boston refers to the combined estimate/rate for all other 14 Boston neighborhoods excluding the indicated neighborhood; † Neighborhood comparison to Boston overall; NA denotes where data are suppressed due to insufficient sample size; **H** indicates the estimate/rate is significantly higher than the rest of Boston; **L** indicates the estimate/rate is significantly lower than the rest of Boston; **S** indicates the estimate/rate is statistically similar to the rest of Boston (i.e., no statistically significant difference); Statistical testing was not conducted for population count estimate and % children under 6 years screened with elevated blood levels

Back Bay	Back Bay	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	55,635	669,158	--
% population under 18 years (2013–2017)†	7.3%	16.3%	H
% population 65 years and over (2013–2017)†	14.6%	11.0%	H
% population foreign born (2013–2017)†	18.9%	28.3%	L
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	4.3%	7.3%	L
% population 25 years and over with less than a high school diploma (2013–2017)†	5.4%	13.9%	L
% individuals living below poverty level (2013–2017)†	11.6%	20.5%	L
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	10.4%	21.3%	L
Housing			
% renter-occupied housing units (2013–2017)†	66.7%	64.7%	S
% households where housing costs are 30% or more of household income for renters (2013–2017)†	43.8%	52.1%	L
% housing units experiencing overcrowding (2013–2017)††	2.0%	3.1%	L
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	83.5%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	3.8%	10.0%	L
% adults reporting could not afford dental care (2017)	NA	17.4%	--
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	32.7%	24.6%	H
% adults reporting cigarette smoking (2013, 2015, 2017)	12.9%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	7.1%	12.3%	L
% adults reporting persistent anxiety (2013, 2015, 2017)	16.9%	21.3%	L
Suicide rate per 100,000 residents (2012–2016)	4.3	6.7	S

Back Bay	Back Bay	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	4.3	16.4	L
Homicide by firearms rate per 100,000 residents (2011–2016)	NA	3.8	--
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	8.5%	13.0%	L
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	9.6%	16.9%	L
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	41.5%	56.8%	L
% adults reporting diabetes diagnosis (2013, 2015, 2017)	5.0%	8.5%	L
Overall cancer mortality rate per 100,000 residents (2015–2017)	135.1	160.0	L
Heart disease mortality rate per 100,000 residents (2016–2017)	94.1	131.4	L
% adults reporting hypertension (2013, 2015, 2017)	20.6%	24.7%	L
% adults reporting current asthma (2013, 2015, 2017)	8.1%	11.2%	L
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	83.4	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	0.4%	2.0%	L
% low birthweight births (2017)	7.6%	8.7%	L
% children under 6 years screened with elevated blood levels (2015)	1.0%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	866.2	855.8	S
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	7.1%	12.5%	L
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	136.8	200.1	L

NOTES: *Rest of Boston refers to the combined estimate/rate for all other 14 Boston neighborhoods excluding the indicated neighborhood; † Neighborhood comparison to Boston overall; NA denotes where data are suppressed due to insufficient sample size; **H** indicates the estimate/rate is significantly higher than the rest of Boston; **L** indicates the estimate/rate is significantly lower than the rest of Boston; **S** indicates the estimate/rate is statistically similar to the rest of Boston (i.e., no statistically significant difference); Statistical testing was not conducted for population count estimate and % children under 6 years screened with elevated blood levels

Charlestown	Charlestown	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	18,901	669,158	--
% population under 18 years (2013–2017)†	18.0%	16.3%	S
% population 65 years and over (2013–2017)†	10.4%	11.0%	S
% population foreign born (2013–2017)†	15.4%	28.3%	L
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	3.9%	7.3%	L
% population 25 years and over with less than a high school diploma (2013–2017)†	9.9%	13.9%	L
% individuals living below poverty level (2013–2017)†	18.0%	20.5%	S
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	16.5%	21.3%	S
Housing			
% renter-occupied housing units (2013–2017)†	54.5%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013–2017)†	37.2%	52.1%	L
% housing units experiencing overcrowding (2013–2017)††	2.2%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	86.1%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	NA	10.0%	--
% adults reporting could not afford dental care (2017)	NA	17.4%	--
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	26.5%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	10.0%	16.5%	L
% adults reporting persistent sadness (2013, 2015, 2017)	8.0%	12.3%	L
% adults reporting persistent anxiety (2013, 2015, 2017)	17.5%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	NA	6.7	--

Charlestown	Charlestown	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	NA	16.4	--
Homicide by firearms rate per 100,000 residents (2011–2016)	5.6	3.8	S
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	12.9%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	14.9%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	48.4%	56.8%	L
% adults reporting diabetes diagnosis (2013, 2015, 2017)	4.5%	8.5%	L
Overall cancer mortality rate per 100,000 residents (2015–2017)	195.8	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	144.9	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	18.7%	24.7%	L
% adults reporting current asthma (2013, 2015, 2017)	9.5%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	223.7	191.5	S
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.7%	2.0%	S
% low birthweight births (2017)	8.3%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	1.4%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	341.6	855.8	L
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	7.5%	12.5%	L
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	173.6	200.1	S

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Dorchester (zip codes 02121, 02125)	Dorchester (02121, 02125)	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	63,733	669,158	--
% population under 18 years (2013–2017)†	22.7%	16.3%	H
% population 65 years and over (2013–2017)†	9.9%	11.0%	L
% population foreign born (2013–2017)†	36.3%	28.3%	H
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	11.2%	7.3%	H
% population 25 years and over with less than a high school diploma (2013–2017)†	20.8%	13.9%	H
% individuals living below poverty level (2013–2017)†	28.4%	20.5%	H
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	29.0%	21.3%	H
Housing			
% renter-occupied housing units (2013–2017)†	72.0%	64.7%	H
% households where housing costs are 30% or more of household income for renters (2013–2017)†	47.0%	52.1%	S
% housing units experiencing overcrowding (2013–2017)††	4.1%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	83.1%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	11.0%	10.0%	S
% adults reporting could not afford dental care (2017)	16.8%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	22.8%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	17.3%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	15.5%	12.3%	H
% adults reporting persistent anxiety (2013, 2015, 2017)	21.8%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	6.4	6.7	S

Dorchester (zip codes 02121, 02125)	Dorchester (02121, 02125)	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	40.5	16.4	H
Homicide by firearms rate per 100,000 residents (2011–2016)	13.7	3.8	H
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	13.8%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	19.1%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	63.4%	56.8%	H
% adults reporting diabetes diagnosis (2013, 2015, 2017)	10.0%	8.5%	S
Overall cancer mortality rate per 100,000 residents (2015–2017)	177.4	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	130.4	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	30.1%	24.7%	H
% adults reporting current asthma (2013, 2015, 2017)	13.5%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	268.8	191.5	H
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	3.2%	2.0%	H
% low birthweight births (2017)	8.6%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	2.6%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	1,102.9	855.8	H
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	13.0%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	263.7	200.1	H

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Dorchester (zip codes 02122, 02124)	Dorchester (02122, 02124)	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	79,717	669,158	--
% population under 18 years (2013–2017)†	22.5%	16.3%	H
% population 65 years and over (2013–2017)†	11.3%	11.0%	S
% population foreign born (2013–2017)†	32.0%	28.3%	H
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	9.6%	7.3%	H
% population 25 years and over with less than a high school diploma (2013–2017)†	19.1%	13.9%	H
% individuals living below poverty level (2013–2017)†	22.2%	20.5%	S
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	32.9%	21.3%	H
Housing			
% renter-occupied housing units (2013–2017)†	61.4%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013–2017)†	36.4%	52.1%	L
% housing units experiencing overcrowding (2013–2017)††	2.8%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	81.7%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	12.8%	10.0%	H
% adults reporting could not afford dental care (2017)	26.4%	17.4%	H
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	21.0%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	21.9%	16.5%	H
% adults reporting persistent sadness (2013, 2015, 2017)	15.0%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	22.9%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	8.9	6.7	H

Dorchester (zip codes 02122, 02124)	Dorchester (02122, 02124)	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	44.9	16.4	H
Homicide by firearms rate per 100,000 residents (2011–2016)	10.6	3.8	H
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	14.5%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	25.5%	16.9%	H
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	64.8%	56.8%	H
% adults reporting diabetes diagnosis (2013, 2015, 2017)	12.8%	8.5%	H
Overall cancer mortality rate per 100,000 residents (2015–2017)	161.3	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	127.3	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	30.2%	24.7%	H
% adults reporting current asthma (2013, 2015, 2017)	15.1%	11.2%	H
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	248.8	191.5	H
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	3.2%	2.0%	H
% low birthweight births (2017)	11.5%	8.7%	H
% children under 6 years screened with elevated blood levels (2015)	3.1%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	1,126.7	855.8	H
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	18.9%	12.5%	H
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	253.1	200.1	H

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East Boston	East Boston	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	46,655	669,158	--
% population under 18 years (2013–2017)†	20.6%	16.3%	H
% population 65 years and over (2013–2017)†	9.0%	11.0%	L
% population foreign born (2013–2017)†	50.4%	28.3%	H
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	6.5%	7.3%	S
% population 25 years and over with less than a high school diploma (2013–2017)†	31.4%	13.9%	H
% individuals living below poverty level (2013–2017)†	20.3%	20.5%	S
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	31.4%	21.3%	H
Housing			
% renter-occupied housing units (2013–2017)†	71.4%	64.7%	H
% households where housing costs are 30% or more of household income for renters (2013–2017)†	59.0%	52.1%	H
% housing units experiencing overcrowding (2013–2017)†	9.8%	3.1%	H
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	71.4%	80.1%	L
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	17.1%	10.0%	H
% adults reporting could not afford dental care (2017)	26.6%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	20.3%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	17.1%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	12.8%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	21.0%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	6.8	6.7	S

East Boston	East Boston	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	NA	16.4	--
Homicide by firearms rate per 100,000 residents (2011–2016)	NA	3.8	--
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	13.9%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	21.0%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	62.9%	56.8%	H
% adults reporting diabetes diagnosis (2013, 2015, 2017)	9.1%	8.5%	S
Overall cancer mortality rate per 100,000 residents (2015–2017)	190.9	160.0	H
Heart disease mortality rate per 100,000 residents (2016–2017)	174.2	131.4	H
% adults reporting hypertension (2013, 2015, 2017)	22.4%	24.7%	S
% adults reporting current asthma (2013, 2015, 2017)	10.0%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	65.5	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.7%	2.0%	S
% low birthweight births (2017)	6.7%	8.7%	L
% children under 6 years screened with elevated blood levels (2015)	3.0%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	702.8	855.8	H
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	15.2%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	194.6	200.1	S

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Fenway	Fenway	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	54,267	669,158	--
% population under 18 years (2013–2017)†	3.9%	16.3%	L
% population 65 years and over (2013–2017)†	5.3%	11.0%	L
% population foreign born (2013–2017)†	26.4%	28.3%	L
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	10.7%	7.3%	H
% population 25 years and over with less than a high school diploma (2013–2017)†	8.8%	13.9%	L
% individuals living below poverty level (2013–2017)†	36.7%	20.5%	H
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	11.9%	21.3%	L
Housing			
% renter-occupied housing units (2013–2017)†	87.0%	64.7%	H
% households where housing costs are 30% or more of household income for renters (2013–2017)†	59.1%	52.1%	H
% housing units experiencing overcrowding (2013–2017)†	2.8%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	58.0%	80.1%	L
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	10.3%	10.0%	S
% adults reporting could not afford dental care (2017)	NA	17.4%	--
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	20.4%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	13.1%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	8.5%	12.3%	L
% adults reporting persistent anxiety (2013, 2015, 2017)	20.2%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	4.2	6.7	S

Fenway	Fenway	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	6.0	16.4	L
Homicide by firearms rate per 100,000 residents (2011–2016)	NA	3.8	--
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	8.4%	13.0%	L
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	14.5%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	37.0%	56.8%	L
% adults reporting diabetes diagnosis (2013, 2015, 2017)	4.2%	8.5%	L
Overall cancer mortality rate per 100,000 residents (2015–2017)	159.2	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	96.5	131.4	L
% adults reporting hypertension (2013, 2015, 2017)	12.7%	24.7%	L
% adults reporting current asthma (2013, 2015, 2017)	4.9%	11.2%	L
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	143.9	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.0%	2.0%	L
% low birthweight births (2017)	8.9%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	0%–<0.75%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	599.7	855.8	L
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	9.9%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	208.0	200.1	S

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Hyde Park	Hyde Park	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	33,084	669,158	--
% population under 18 years (2013–2017)†	23.6%	16.3%	H
% population 65 years and over (2013–2017)†	13.1%	11.0%	H
% population foreign born (2013–2017)†	30.0%	28.3%	S
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	8.4%	7.3%	S
% population 25 years and over with less than a high school diploma (2013–2017)†	12.9%	13.9%	S
% individuals living below poverty level (2013–2017)†	12.4%	20.5%	L
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	18.3%	21.3%	S
Housing			
% renter-occupied housing units (2013–2017)†	46.8%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013–2017)†	50.3%	52.1%	S
% housing units experiencing overcrowding (2013–2017)†	3.7%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	89.1%	80.1%	H
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	10.8%	10.0%	S
% adults reporting could not afford dental care (2017)	11.5%	17.4%	L
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	22.5%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	15.8%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	14.4%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	23.1%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	7.0	6.7	S

Hyde Park	Hyde Park	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	16.4	16.4	S
Homicide by firearms rate per 100,000 residents (2011–2016)	6.8	3.8	S
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	9.6%	13.0%	L
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	15.0%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	64.8%	56.8%	H
% adults reporting diabetes diagnosis (2013, 2015, 2017)	10.7%	8.5%	S
Overall cancer mortality rate per 100,000 residents (2015–2017)	205.7	160.0	H
Heart disease mortality rate per 100,000 residents (2016–2017)	168.5	131.4	H
% adults reporting hypertension (2013, 2015, 2017)	24.7%	24.7%	S
% adults reporting current asthma (2013, 2015, 2017)	11.4%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	199.6	191.5	S
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.8%	2.0%	S
% low birthweight births (2017)	12.4%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	2.6%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	821.2	855.8	S
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	10.0%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	233.3	200.1	S

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Jamaica Plain	Jamaica Plain	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013-2017)	39,435	669,158	--
% population under 18 years (2013-2017)†	15.5%	16.3%	S
% population 65 years and over (2013-2017)†	12.3%	11.0%	H
% population foreign born (2013-2017)†	21.8%	28.3%	L
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013-2017)†	4.7%	7.3%	L
% population 25 years and over with less than a high school diploma (2013-2017)†	7.8%	13.9%	L
% individuals living below poverty level (2013-2017)†	16.0%	20.5%	L
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	12.8%	21.3%	L
Housing			
% renter-occupied housing units (2013-2017)†	53.6%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013-2017)†	57.6%	52.1%	H
% housing units experiencing overcrowding (2013-2017)†	1.7%	3.1%	L
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	84.3%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	6.8%	10.0%	L
% adults reporting could not afford dental care (2017)	14.8%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	24.9%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	12.7%	16.5%	L
% adults reporting persistent sadness (2013, 2015, 2017)	10.9%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	20.7%	21.3%	S
Suicide rate per 100,000 residents (2012-2016)	8.9	6.7	S

Jamaica Plain	Jamaica Plain	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	12.0	16.4	L
Homicide by firearms rate per 100,000 residents (2011–2016)	NA	3.8	--
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	17.1%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	14.7%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	50.4%	56.8%	L
% adults reporting diabetes diagnosis (2013, 2015, 2017)	5.2%	8.5%	L
Overall cancer mortality rate per 100,000 residents (2015–2017)	141.8	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	137.0	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	20.3%	24.7%	L
% adults reporting current asthma (2013, 2015, 2017)	11.6%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	146.1	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	0.8%	2.0%	L
% low birthweight births (2017)	8.3%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	2.6%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	962.4	855.8	H
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	9.8%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	159.9	200.1	L

NOTES: *Rest of Boston refers to the combined estimate/rate for all other 14 Boston neighborhoods excluding the indicated neighborhood; † Neighborhood comparison to Boston overall; NA denotes where data are suppressed due to insufficient sample size; **H** indicates the estimate/rate is significantly higher than the rest of Boston; **L** indicates the estimate/rate is significantly lower than the rest of Boston; **S** indicates the estimate/rate is statistically similar to the rest of Boston (i.e., no statistically significant difference); Statistical testing was not conducted for population count estimate and % children under 6 years screened with elevated blood levels

Mattapan	Mattapan	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	29,141	669,158	--
% population under 18 years (2013–2017)†	22.8%	16.3%	H
% population 65 years and over (2013–2017)†	12.8%	11.0%	H
% population foreign born (2013–2017)†	33.5%	28.3%	H
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	9.7%	7.3%	H
% population 25 years and over with less than a high school diploma (2013–2017)†	16.6%	13.9%	S
% individuals living below poverty level (2013–2017)†	19.7%	20.5%	S
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	39.8%	21.3%	H
Housing			
% renter-occupied housing units (2013–2017)†	58.8%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013–2017)†	54.2%	52.1%	S
% housing units experiencing overcrowding (2013–2017)†	4.4%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	84.1%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	14.9%	10.0%	S
% adults reporting could not afford dental care (2017)	21.4%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	17.4%	24.6%	L
% adults reporting cigarette smoking (2013, 2015, 2017)	19.3%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	12.7%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	18.0%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	3.9	6.7	S

Mattapan	Mattapan	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	53.1	16.4	H
Homicide by firearms rate per 100,000 residents (2011–2016)	9.4	3.8	H
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	12.5%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	19.4%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	71.1%	56.8%	H
% adults reporting diabetes diagnosis (2013, 2015, 2017)	17.9%	8.5%	H
Overall cancer mortality rate per 100,000 residents (2015–2017)	152.5	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	118.2	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	38.0%	24.7%	H
% adults reporting current asthma (2013, 2015, 2017)	15.7%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	286.8	191.5	H
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.8%	2.0%	S
% low birthweight births (2017)	11.2%	8.7%	H
% children under 6 years screened with elevated blood levels (2015)	2.2%	2.3%	––
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	1,214.0	855.8	H
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	13.4%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	245.8	200.1	H

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Roslindale	Roslindale	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	32,819	669,158	--
% population under 18 years (2013–2017)†	21.1%	16.3%	H
% population 65 years and over (2013–2017)†	12.2%	11.0%	H
% population foreign born (2013–2017)†	26.9%	28.3%	S
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	5.1%	7.3%	L
% population 25 years and over with less than a high school diploma (2013–2017)†	9.5%	13.9%	L
% individuals living below poverty level (2013–2017)†	11.8%	20.5%	L
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	15.7%	21.3%	L
Housing			
% renter-occupied housing units (2013–2017)†	44.5%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013–2017)†	61.9%	52.1%	H
% housing units experiencing overcrowding (2013–2017)†	3.4%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	84.1%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	8.8%	10.0%	S
% adults reporting could not afford dental care (2017)	14.6%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	24.0%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	10.4%	16.5%	L
% adults reporting persistent sadness (2013, 2015, 2017)	12.4%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	20.4%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	5.0	6.7	S

Roslindale	Roslindale	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	12.4	16.4	S
Homicide by firearms rate per 100,000 residents (2011–2016)	5.5	3.8	--
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	12.5%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	14.5%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	62.8%	56.8%	H
% adults reporting diabetes diagnosis (2013, 2015, 2017)	9.3%	8.5%	S
Overall cancer mortality rate per 100,000 residents (2015–2017)	157.8	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	137.4	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	27.7%	24.7%	S
% adults reporting current asthma (2013, 2015, 2017)	7.7%	11.2%	L
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	141.6	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.5%	2.0%	S
% low birthweight births (2017)	8.7%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	2.5%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	697.2	855.8	L
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	9.5%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	155.5	200.1	L

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Roxbury	Roxbury	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	43,871	669,158	--
% population under 18 years (2013–2017)†	19.1%	16.3%	H
% population 65 years and over (2013–2017)†	10.2%	11.0%	S
% population foreign born (2013–2017)†	28.6%	28.3%	S
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	12.6%	7.3%	H
% population 25 years and over with less than a high school diploma (2013–2017)†	21.7%	13.9%	H
% individuals living below poverty level (2013–2017)†	34.4%	20.5%	H
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	26.9%	21.3%	H
Housing			
% renter-occupied housing units (2013–2017)†	81.8%	64.7%	H
% households where housing costs are 30% or more of household income for renters (2013–2017)†	53.0%	52.1%	S
% housing units experiencing overcrowding (2013–2017)†	3.5%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	81.0%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	10.1%	10.0%	S
% adults reporting could not afford dental care (2017)	20.5%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	20.5%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	20.6%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	13.8%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	24.9%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	5.3	6.7	S

Roxbury	Roxbury	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	41.1	16.4	H
Homicide by firearms rate per 100,000 residents (2011–2016)	7.3	3.8	H
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	12.3%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	17.2%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	57.9%	56.8%	S
% adults reporting diabetes diagnosis (2013, 2015, 2017)	14.0%	8.5%	H
Overall cancer mortality rate per 100,000 residents (2015–2017)	170.9	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	158.8	131.4	H
% adults reporting hypertension (2013, 2015, 2017)	30.1%	24.7%	H
% adults reporting current asthma (2013, 2015, 2017)	15.0%	11.2%	H
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	312.9	191.5	H
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	3.2%	2.0%	H
% low birthweight births (2017)	8.0%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	2.5%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	1,181.0	855.8	H
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	21.2%	12.5%	H
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	297.1	200.1	H

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South Boston	South Boston	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	39,866	669,158	--
% population under 18 years (2013–2017)†	12.3%	16.3%	L
% population 65 years and over (2013–2017)†	8.7%	11.0%	L
% population foreign born (2013–2017)†	13.0%	28.3%	L
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	4.7%	7.3%	L
% population 25 years and over with less than a high school diploma (2013–2017)†	8.5%	13.9%	L
% individuals living below poverty level (2013–2017)†	15.3%	20.5%	L
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	18.5%	21.3%	S
Housing			
% renter-occupied housing units (2013–2017)†	60.7%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013–2017)†	59.6%	52.1%	H
% housing units experiencing overcrowding (2013–2017)†	1.4%	3.1%	L
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	83.3%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	5.4%	10.0%	L
% adults reporting could not afford dental care (2017)	NA	17.4%	--
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	40.5%	24.6%	H
% adults reporting cigarette smoking (2013, 2015, 2017)	20.0%	16.5%	S
% adults reporting persistent sadness (2013, 2015, 2017)	12.1%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	21.0%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	5.3	6.7	S

South Boston	South Boston	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	6.4	16.4	L
Homicide by firearms rate per 100,000 residents (2011–2016)	NA	3.8	L
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	11.8%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	14.3%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	57.3%	56.8%	S
% adults reporting diabetes diagnosis (2013, 2015, 2017)	5.5%	8.5%	L
Overall cancer mortality rate per 100,000 residents (2015–2017)	207.6	160.0	H
Heart disease mortality rate per 100,000 residents (2016–2017)	157.3	131.4	H
% adults reporting hypertension (2013, 2015, 2017)	24.0%	24.7%	S
% adults reporting current asthma (2013, 2015, 2017)	7.9%	11.2%	L
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	138.4	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	2.1%	2.0%	S
% low birthweight births (2017)	8.4%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	0.9%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	454.4	855.8	L
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	14.3%	12.5%	S
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	219.9	200.1	S

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South End	South End	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	34,777	669,158	--
% population under 18 years (2013–2017)†	13.4%	16.3%	L
% population 65 years and over (2013–2017)†	10.7%	11.0%	S
% population foreign born (2013–2017)†	28.8%	28.3%	S
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	7.1%	7.3%	S
% population 25 years and over with less than a high school diploma (2013–2017)†	16.8%	13.9%	H
% individuals living below poverty level (2013–2017)†	24.6%	20.5%	H
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	16.9%	21.3%	S
Housing			
% renter-occupied housing units (2013–2017)†	65.4%	64.7%	S
% households where housing costs are 30% or more of household income for renters (2013–2017)†	51.4%	52.1%	S
% housing units experiencing overcrowding (2013–2017)†	2.7%	3.1%	S
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	75.7%	80.1%	S
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	6.3%	10.0%	L
% adults reporting could not afford dental care (2017)	14.8%	17.4%	S
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	23.4%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	22.2%	16.5%	H
% adults reporting persistent sadness (2013, 2015, 2017)	11.4%	12.3%	S
% adults reporting persistent anxiety (2013, 2015, 2017)	16.0%	21.3%	L
Suicide rate per 100,000 residents (2012–2016)	8.2	6.7	S

South End	South End	Boston Overall	Comparison to the Rest of Boston*
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	19.7	16.4	H
Homicide by firearms rate per 100,000 residents (2011–2016)	3.2	3.8	S
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	10.9%	13.0%	S
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	16.5%	16.9%	S
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	50.7%	56.8%	S
% adults reporting diabetes diagnosis (2013, 2015, 2017)	6.5%	8.5%	S
Overall cancer mortality rate per 100,000 residents (2015–2017)	144.2	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	101.4	131.4	L
% adults reporting hypertension (2013, 2015, 2017)	22.6%	24.7%	S
% adults reporting current asthma (2013, 2015, 2017)	10.4%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	164.5	191.5	S
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	1.5%	2.0%	S
% low birthweight births (2017)	6.8%	8.7%	S
% children under 6 years screened with elevated blood levels (2015)	0.8%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	1,852.1	855.8	H
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	9.0%	12.5%	L
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	217.5	200.1	S

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West Roxbury	West Roxbury	Boston Overall	Comparison to the Rest of Boston*
Demographics			
Population count estimate (2013–2017)	28,505	669,158	--
% population under 18 years (2013–2017)†	20.4%	16.3%	H
% population 65 years and over (2013–2017)†	18.7%	11.0%	H
% population foreign born (2013–2017)†	18.1%	28.3%	L
Employment, Education, and Financial Insecurity			
% population 16 years and over unemployed (2013–2017)†	4.9%	7.3%	L
% population 25 years and over with less than a high school diploma (2013–2017)†	7.5%	13.9%	L
% individuals living below poverty level (2013–2017)†	6.4%	20.5%	L
% adults reporting food purchased did not last and did not have money to get more (2013, 2015, 2017)	9.7%	21.3%	L
Housing			
% renter-occupied housing units (2013–2017)†	26.9%	64.7%	L
% households where housing costs are 30% or more of household income for renters (2013–2017)†	52.7%	52.1%	S
% housing units experiencing overcrowding (2013–2017)†	NA	3.1%	--
Access to Services			
% adults reporting having a personal doctor or health care provider (2013, 2015, 2017)	92.3%	80.1%	H
% adults reporting could not afford to see a doctor (2013, 2015, 2017)	4.7%	10.0%	L
% adults reporting could not afford dental care (2017)	NA	17.4%	--
Substance Use and Mental Health			
% adults reporting binge drinking (2013, 2015, 2017)	21.4%	24.6%	S
% adults reporting cigarette smoking (2013, 2015, 2017)	10.0%	16.5%	L
% adults reporting persistent sadness (2013, 2015, 2017)	8.1%	12.3%	L
% adults reporting persistent anxiety (2013, 2015, 2017)	17.8%	21.3%	S
Suicide rate per 100,000 residents (2012–2016)	4.9	6.7	S
Violence and Trauma			
Nonfatal firearm related ED visit rate per 100,000 residents (2013–2017)	NA	16.4	--
Homicide by firearms rate per 100,000 residents (2011–2016)	NA	3.8	--
% adults reporting experiencing violence in lifetime (2013 ,2015, 2017)	8.1%	13.0%	L
% adults reporting having lived with adults who physically abused each other as a child (2013, 2015, 2017)	9.7%	16.9%	L

West Roxbury	West Roxbury	Boston Overall	Comparison to the Rest of Boston*
Chronic Conditions			
% adults reporting overweight or obesity (2013, 2015, 2017)	63.6%	56.8%	H
% adults reporting diabetes diagnosis (2013, 2015, 2017)	7.5%	8.5%	S
Overall cancer mortality rate per 100,000 residents (2015–2017)	163.5	160.0	S
Heart disease mortality rate per 100,000 residents (2016–2017)	133.4	131.4	S
% adults reporting hypertension (2013, 2015, 2017)	28.3%	24.7%	S
% adults reporting current asthma (2013, 2015, 2017)	11.9%	11.2%	S
Asthma ED visit (children under 18 years) rate per 10,000 residents (2016–2017)	48.1	191.5	L
Maternal and Child Health			
% mothers reporting smoking during pregnancy (2014–2017)	0.6%	2.0%	L
% low birthweight births (2017)	3.8%	8.7%	L
% children under 6 years screened with elevated blood levels (2015)	0.9%	2.3%	--
Sexual Health and Infectious Disease			
HIV/AIDS prevalence rate per 100,000 residents (2016)	329.2	855.8	L
Environmental Health			
% adults reporting secondhand smoke exposure in the home (2013, 2015, 2017)	5.6%	12.5%	L
Mortality			
Premature mortality rate per 100,000 residents (2014–2016)	142.8	200.1	L

NOTES: *Rest of Boston refers to the combined estimate/rate for all other 14 Boston neighborhoods excluding the indicated neighborhood; † Neighborhood comparison to Boston overall; NA denotes where data are suppressed due to insufficient sample size; **H** indicates the estimate/rate is significantly higher than the rest of Boston; **L** indicates the estimate/rate is significantly lower than the rest of Boston; **S** indicates the estimate/rate is statistically similar to the rest of Boston (i.e., no statistically significant difference); Statistical testing was not conducted for population count estimate and % children under 6 years screened with elevated blood levels

APPENDIX A. STEERING COMMITTEE MEMBERS

Organization	Name
Beth Israel Deaconess Medical Center	Nancy Kasen (co-chair)
Boston Children's Hospital	Ayesha Cammaerts
Boston Health care for the Homeless	Denise De Las Nueces
Boston Medical Center	Jennifer Fleming
Boston Public Health Commission	Margaret Reid
Brigham and Women's Faulkner Hospital	Tracy Mangini Sylven
Brigham and Women's Hospital	Wanda McClain
Community representative and Jamaica Plain Neighborhood Development Corporation	Ricky Guerra
Community Labor United	Sarah Jimenez
Dana-Farber Cancer Institute	Magnolia Contreras
Fenway Health	Carl Sciortino (co-chair)
Health Leads	Laurita Kaigler-Crawlle
Madison Park Development Corporation	Jeanne Pinado
Massachusetts Eye and Ear	Erin Duggan
Massachusetts General Hospital	Joan Quinlan
Massachusetts League of Community Health Centers	Mary Ellen McIntyre
Tufts Medical Center	Sherry Dong
Uphams Corner Health Center	Daniel Joo
Urban Edge	Robert Torres

APPENDIX B. SECONDARY DATA AND COMMUNITY ENGAGEMENT WORK GROUP MEMBERS

Organization	Name	Membership
Allston Brighton Health Collaborative	Anna Leslie	Community Engagement– Member
American Diabetes Association	Albert Whitaker	Community Engagement– Member
American Heart Association	Cherelle Rozie	Community Engagement– Member
Asian Task Force Against Domestic Violence	Dawn Sauma	Community Engagement– Member
BACH	Jamiah Tappin	Community Engagement– Member & Secondary Data– Member
Beth Israel Deaconess Medical Center	Jodi Dean	Community Engagement– Member
Beth Israel Deaconess Medical Center	Lisa Lachance	Community Engagement– Member
Beth Israel Deaconess Medical Center	Max Alderman	Community Engagement– Member
Beth Israel Deaconess Medical Center	Nancy Kasen	Community Engagement– Member & Secondary Data– Member
Blue Cross Blue Shield – Massachusetts	Charlotte Alger	Secondary Data– Member
Boston Alliance for Community Health	Tamika Francis	Community Engagement– Member
Boston Children's Hospital	Urmi Bhaumik	Secondary Data– Member
Boston Children's Hospital	Ayesha Cammaerts	Community Engagement– Member & Secondary Data– Member
Boston Health Care for the Homeless	Denise De Las Nueces	Secondary Data– Member
Boston Health Care for the Homeless	Dirk Williams	Community Engagement– Member
Boston Housing Authority	John Kane	Community Engagement– Member
Boston Medical Center	Jennifer Fleming	Community Engagement– Member
Boston Medical Center	Judy Henderson	Community Engagement– Member
Boston Public Health Commission	Dan Dooley	Secondary Data– Co-Chair
Boston Public Health Commission	Denise Dodds	Community Engagement– Member
Boston Public Health Commission	Margaret Reid	Community Engagement– Member & Secondary Data– Member
Boston Public Health Commission	Triniese Polk	Community Engagement– Co-Chair
Bowdoin Street Health Center	Alberte Atine-Gibson	Secondary Data– Member

Organization	Name	Membership
Boys and Girls Club of Boston	Grace Lichaa	Community Engagement– Member & Secondary Data– Member
Brigham and Women's Hospital	Michelle Keenan	Community Engagement– Member & Secondary Data– Member
Brigham and Women's Hospital– Faulkner	Tracy Sylven	Community Engagement– Member
Brookview House	Deborah Hughes	Community Engagement– Member
Charles River Community Health	Elizabeth Browne	Community Engagement– Member
Charles River Community Health	Francisca Guevara	Community Engagement– Member
City Life Vida Urbana	Mike Leyba	Community Engagement– Member
Community member/advocate	Enid Eckstein	Community Engagement– Member
Dana–Farber Cancer Institute	Magnolia Contreras	Community Engagement– Co–Chair & Secondary Data– Member
East Boston Neighborhood Health Center	Brett Phillips	Community Engagement– Member & Secondary Data– Member
East Boston Neighborhood Health Center	Joanna Cataldo	Community Engagement– Member & Secondary Data– Member
East Boston Neighborhood Health Center	Kathy Field	Community Engagement– Member
East Boston Social Center	Gloria Devine	Community Engagement– Member
East Boston Social Center	Lisa Melara	Community Engagement– Member
Fenway Health	Matan Benyishay	Secondary Data– Member
Fenway Health	Sean Cahill	Secondary Data– Member
Franciscan Children's	Chantal Brandimarte	Community Engagement– Member
Franciscan Children's	Jennifer Atlas	Community Engagement– Member
Harvard School of Public Health	Maynard Clark	Community Engagement– Member
Health Care without Harm	Jen Obadia	Community Engagement– Member
Hebrew SeniorLife	Margaret Bonilla	Community Engagement– Member
MA Department of Public Health	Ben Wood	Community Engagement– Member
MA Department of Public Health	Halley Reeves	Secondary Data– Member
MA Department of Public Health	Jennica Allen	Community Engagement– Member
Madison Park Development Corp.	Jeanne Pinado	Community Engagement– Member
Madison Park Development Corp.	Kay Mathew	Community Engagement– Member

Organization	Name	Membership
Massachusetts Eye and Ear	Erin Duggan	Secondary Data– Member
Massachusetts General Hospital	Leslie Aldrich	Community Engagement– Member
Massachusetts General Hospital	Sarah Wang	Community Engagement– Member
Massachusetts General Hospital– Center for Community Health Improvement	Danelle Marable	Community Engagement– Member & Secondary Data– Member
Massachusetts General Hospital– Center for Community Health Improvement	Kelly Washburn	Secondary Data– Member
Massachusetts General Hospital– Center for Community Health Improvement	Sonia Iyengar	Community Engagement– Member & Secondary Data– Member
Massachusetts League of Community Health Center	Mary Ellen McIntyre	Secondary Data– Member
Massachusetts Public Health Association	Kristina Kimani	Community Engagement– Member
Massachusetts Public Health Association	Maddie Ribble	Community Engagement– Member
Metropolitan Area Planning Council	Jeanette Pantoja	Secondary Data– Member
NAMI – PPAL (Parent/Professional Advocacy League)	Monica Pomare	Community Engagement– Member
Partners HealthCare	Tavinder Phull	Secondary Data– Co–Chair
Peer Health Exchange	Uchenna Ndulue	Community Engagement– Member & Secondary Data– Member
Room to Maneuver	Paul Lipke	Community Engagement– Member & Secondary Data– Member
The Family Van	Millie Williams	Secondary Data– Member
The Family Van	Rainelle White	Community Engagement– Member
Tufts Medical Center	Sherry Dong	Community Engagement– Member
Tufts Medical Center	Stephen Muse	Secondary Data– Member
Upham's Corner Health Center	Dan Joo	Secondary Data– Member
Urban Edge	Robert Torres	Community Engagement– Member
Urban Edge	Sahar Lawrence	Secondary Data– Member
Women's Health Unit – BMC	Jennifer Pamphile	Community Engagement– Member

APPENDIX C. TECHNICAL NOTES FOR COMMONLY CITED DATASETS

These technical notes were provided by Boston Public Health Commission and include background around data sources commonly used throughout this report.

Survey Data

U. S. Census Bureau, American Community Survey

The American Community Survey (ACS) uses a sample of the population to provide information about demographics, housing, and socioeconomic characteristics of communities. People who live in households, students, and those in institutions or other group quarters (e.g. jails, college dormitories, and nursing homes) are sampled. The ACS is administered through mailed and online questionnaires and can include telephone or personal visit follow-up if needed. The mailed and online questionnaires are available in English and Spanish and can be made available in Chinese, Russian, Korean, and Vietnamese. Telephone interviews are available in over 30 languages.

This report presents estimates both for single and aggregated years of the ACS. The ACS results used in describing the Boston population are subject to the limitations common to all surveys. Samples produce estimates that can never be as precise as tabulations of the whole population. Other kinds of errors can further affect the precision of estimates, and nonrandom (or systematic) error has the potential to bias findings.

Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System (BBRFSS)

The Boston Behavioral Risk Factor Surveillance System (BBRFSS) is a system of telephone health surveys of adults living in non-institutional household settings ages 18 and over that collects information on health risk behaviors, preventive health practices, and health care access primarily related to chronic disease and injury. The survey is administered in English and Spanish.

The Boston Public Health Commission (BPHC) conducts this independent survey approximately every other year modeled after the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS) survey. Over time, the survey has been modified by BPHC to be more reflective of health risk behaviors specific to the Boston population. In 2013, BBRFSS data across all data years were re-weighted to accommodate post-stratification to five population dimensions (i.e., age, gender, racial/ethnic group, education and marital status). As a result, rates, percentages, and point estimates will vary from and cannot be compared with previously produced BBRFSS results. However, the Boston Behavioral Risk Factor Surveillance System survey has maintained many standard core questions included in the BRFSS used by the Massachusetts Department of Public Health. Results from the survey are used by BPHC to plan and implement health initiatives; to identify health problems within populations; to identify racial/ethnic inequities in access to and utilization of health care, in risk behaviors, and selected health conditions; to establish and monitor health objectives; to

support health-related legislative activities; to evaluate disease prevention activities and programs; and to assist in receiving grants and other funding.

Centers for Disease Control and Prevention and Boston Public Schools, Boston Youth Risk Behavior Survey (YRBS)

The Youth Risk Behavior Surveillance System (YRBSS) is a system of national school-based surveys conducted by the Centers for Disease Control and Prevention (CDC) every other year among public high school students in grades 9-12. It is currently conducted in 47 states, 6 territories, 2 tribal governments, and 22 cities. The survey contains questions related to risk behaviors such as unintentional injuries and violence, alcohol and drug use, tobacco use, sexual behavior, unhealthy eating behaviors, physical inactivity, and the prevalence of obesity and asthma.

The Boston Public Health Commission uses results from the YRBSS to identify the prevalence of health risk behaviors among Boston youth, identify racial/ethnic inequities, plan and implement health initiatives, support health-related legislative activities, and assist in obtaining grants and other funding.

Vital Records

Massachusetts Department of Public Health, Boston Resident Live Births, Registry of Vital Records and Statistics

These data present Massachusetts birth certificate information. The recording of resident live births is considered nearly complete for Massachusetts resident births, including those that take place at home or out-of-state but to Massachusetts residents. Birth data in this report pertain only to Boston residents.

For analytical purposes, infants are assigned their mother's self-reported race/ethnicity, and not a combination of both parents' race/ethnicity.

Massachusetts Department of Public Health, Boston Resident Deaths, Registry of Vital Records and Statistics

These data present Massachusetts death certificate information. Death data used by the Boston Public Health Commission pertain only to Boston resident decedents. Cause of death determinations are typically made by the certifying physician. However, the Office of the Chief Medical Examiner is responsible for investigating the cause and manner of death occurring under violent, suspicious or unexplained circumstances. Due to delays in investigational results, cause and manner determinations may get updated after analysis of data for any given year. Additionally, certain information within the death record is obtained with the assistance of an informant, typically a family member or funeral director, which may result in errors (for example, in race/ethnicity reporting) that would not occur in self-reported data.

Infectious Disease Data

Massachusetts Department of Public Health, Bureau of Infectious Diseases and Laboratory Sciences

Data from communicable disease surveillance systems are limited by the degree to which people with a condition seek health care that results in testing and reporting to the system. Diseases may be asymptomatic or mild, or are treated presumptively without laboratory testing, and for some conditions, reporting may be less than complete. These factors may contribute to underestimates of the frequency of disease.

New cases of chlamydia, syphilis and gonorrhea infection are reported to the Massachusetts Department of Public Health and the Boston Public Health Commission by diagnosing physicians and laboratories. Undiagnosed cases and variations in screening practices, and compliance with reporting requirements may influence the accuracy of reported sexually transmitted infections.

Massachusetts Department of Public Health, HIV/AIDS Surveillance Program

New cases of HIV infection (incidence) and cases of people living with HIV/AIDS (prevalence) are reported to the Massachusetts Department of Public Health by diagnosing physicians and laboratories. Undiagnosed cases may influence the accuracy of reported cases and impede interpretation of HIV/AIDS case data.

Other Data

Acute Hospital Case–Mix Databases (Hospital Inpatient Discharge Database and Outpatient Emergency Department Database), Massachusetts Center for Health Information and Analysis

These hospital patient encounter (HPE) data present information on Boston resident hospitalizations and emergency department visits to acute care hospitals in Massachusetts. All rates are based on encounter count totals covering fiscal years running October through September (e.g., year 2015 covers HPEs from October 2014-September 2015). Data from the Outpatient Hospital Observation Discharge Database are not included in this report.

For a given HPE, the patient's primary diagnosis is used for determination of most health conditions in this report. Some specific injury-type hospitalizations and ED visits and all substance misuse hospital patient encounters are based on further consideration of multiple diagnosis levels after consideration of the primary diagnosis (See Injury and Substance Misuse Hospital Patient Encounters in Technical Notes for more information).

Hospital patient encounters: In this report, hospital patient encounters include both emergency department visits and hospitalizations.

Emergency department (ED) visit: Visits to acute-care hospital emergency departments for care. In this report, emergency department visit data includes cases seen in the emergency department that resulted in either a discharge directly from the hospital ED or from a hospitalization that followed ED care. ED visits resulting in a discharge from the observational

stay setting are excluded from this report. For Chapter 12: Injury, ED visits include only cases with a discharge from the emergency department and exclude ED visits resulting in a hospitalization.

Hospitalization: Hospitalization represents a patient's continuous stay of one night or more in the hospital for observation, care, diagnosis, or treatment before being discharged (released) from the inpatient setting by the hospital. Only hospitalizations from acute-care, non-federal hospitals have been included. In this report, hospitalizations include cases originating in the emergency department that result in inpatient hospital admissions.

Massachusetts Department of Public Health, Bureau of Substance Abuse Services

The Bureau of Substance Abuse Services at the Massachusetts Department of Public Health provides publicly-supported substance misuse treatment admissions data for Boston resident treatment clients. These data are fiscal year based (July-June). Drug-specific rates of treatment clients presented in this report reflect unique-person counts of clients identifying a specific drug as being either a primary, secondary or tertiary substance of misuse. This methodology of quantifying a given drug's exposure among the treatment client base is meant to better help identify the extent of drug-specific misuse among the client base for drugs not typically identified as a primary drug of misuse. Treatment admissions data reflect only individuals who have successfully accessed the treatment system and, therefore, do not describe the whole Boston resident drug use disorder population.

APPENDIX D. ORGANIZATIONS INVOLVED WITH BOSTON CHNA SURVEY DISSEMINATION

Organizations
2LifeCommunities
Asian Women for Health
ATASK (Asian Task Force Against Domestic Violence)
Boston Alliance for Community Health– Healthy Community Champions
Beth Israel Deaconess
Boston Children's Hospital Community Advisory Board
Boston Chinatown Neighborhood Center
Boston Health care for the Homeless
Boston HealthNet
Boston Housing Authority
Boston Latin Academy
Boston Public Health Commission
Boston Public Libraries
Boston Teacher's Union
Brigham and Women's Faulkner Hospital
Brigham and Women's Hospital
Charles River Health Center
East Boston Neighborhood Health Center
East Boston Social Centers
Franciscan Hospital
Hebrew Senior Life
International Institute of New England
ISBCC Mosque
Jamaica Plain Neighborhood Development Corporation
The LEAH Project (Leaders through Education, Action, and Hope)

Organizations
Madison Park Development Corporation
MAPS (Massachusetts Alliance of Portuguese Speakers)
Mather Elementary
Massachusetts General Hospital
Peer Health Exchange
Sampan Newspaper
The Family Van
Tufts Community Health Improvement Program
Union Capital Boston
Upham's Corner Health Center
Urban Edge

APPENDIX E. BOSTON CHNA SURVEY RESPONDENT CHARACTERISTICS

	Number	Percent
Neighborhood of Residence	**2,404**	
Allston/Brighton	243	10.1%
Back Bay	36	1.5%
Beacon Hill	24	1.0%
Charlestown	93	3.9%
Chinatown	71	3.0%
Dorchester	535	22.3%
Downtown	15	0.6%
East Boston	199	8.3%
Fenway	80	3.3%
Hyde Park	101	4.2%
Jamaica Plain	203	8.4%
Mattapan	102	4.2%
North End	10	0.4%
Roslindale	157	6.5%
Roxbury	185	7.7%
South Boston	85	3.5%
South End	120	5.0%
West End	30	1.3%
West Roxbury	97	4.0%
Mission Hill	18	0.8%

	Number	Percent
Race/Ethnicity	**2,297**	
White	812	35.4%
Black	527	22.9%
Latino	518	22.6%
Asian	332	14.5%
Other/Two or more	108	4.7%
Age	**1,767**	
Under 18 years	201	11.4%
18–24 years	144	8.2%
25–44 years	733	41.5%
45–64 years	476	26.9%
65+ years	213	12.1%
Gender Identity	**1,767**	
Male	403	22.8%
Female	1,334	75.5%
Transgender male	4	0.2%
Transgender female	5	0.3%
Genderqueer, (neither exclusively male or female)	13	0.7%
Other/Additional gender category	8	0.5%
Sexual Orientation	**1,624**	
Straight/heterosexual	1,376	84.7%
Gay or lesbian	103	6.3%
Bisexual	97	6.0%
Prefer to self-describe	48	3.0%
Educational Attainment	**1,708**	
High school graduate or less	497	29.1%
Some college/certification program	345	20.2%
College graduate or more	866	50.7%

	Number	Percent
Household Income	1,624	
Less than $25,000	468	28.8%
$25,000 to less than $50,000	393	24.2%
$50,000 to less than $75,000	257	15.8%
$75,000 to less than $100,000	167	10.3%
$100,000 or more	339	20.9%
Marital Status	1,632	
Single (living in a household without a partner)	756	46.3%
Cohabitation (living together)	174	10.7%
Married	523	32.1%
Separated/Divorced	132	8.1%
Widowed	47	2.9%
Health Care Coverage	1,730	
Your employer or someone else's employer	842	48.6%
A plan that you or someone else buys on your own	72	4.2%
Medicare and/or Medicare and supplement	146	8.4%
Medicaid, MassHealth, CommonHealth or Mass Health HMOs	559	32.3%
Commonwealth Care	37	2.1%
The military, CHAMPUS, TriCare or the VA	12	0.7%
Some other source	31	1.8%
None	32	1.9%
Current Parent or Caregiver of Child Under Age of 18	1,724	
Yes	548	31.8%
No	1,176	68.2%

	Number	Percent
If Parent or Caregiver, Age(s) of Children Cared For	548	
0–3 years	154	28.1%
4–5 years	109	19.9%
6–10 years	232	42.3%
11–14 years	192	35.0%
15–17 years	127	23.2%
Primary Language Spoken at Home†	1,786	
English	1,457	81.6%
Spanish	341	19.1%
Portuguese/Cape Verdean Creole	46	2.6%
Haitian Creole	52	2.9%
Chinese (including Mandarin and Cantonese)	137	7.7%
Vietnamese	83	4.7%
Korean	4	0.2%
Cambodian/Khmer	1	0.6%
French (including Cajun)	10	0.6%
Arabic	20	1.1%
Russian	15	0.8%
Born in the U.S.	1,738	
Yes	1,258	72.4%
No	480	27.6%
Length of Residence in U.S. (If Not Born in U.S.)	458	
Less than 1 year	7	1.5%
1 to less than 3 years	25	5.5%
4 to less than 6 years	47	10.3%
6 years or more, but not my whole life	333	72.7%
I have always lived in the U.S.	46	10.0%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: † denotes where respondents were allowed to select multiple responses; therefore, percentages may not sum up to 100%

APPENDIX F. FOCUS GROUP PARTICIPANT CHARACTERISTICS

Completed Focus Group Demographic Surveys Prior to the Focus Groups

	Number	Percent
Neighborhood of Residence	**97**	
Allston/Brighton	10	10.3%
Back Bay	0	0.0%
Beacon Hill	0	0.0%
Charlestown	0	0.0%
Chinatown	1	1.0%
Dorchester	35	36.1%
Downtown	2	2.1%
East Boston	6	6.2%
Fenway	0	0.0%
Hyde Park	3	3.1%
Jamaica Plain	3	3.1%
Mattapan	9	9.3%
North End	0	0.0%
Roslindale	3	3.1%
Roxbury	5	5.2%
South Boston	4	4.1%
South End	12	12.4%
West End	0	0.0%
West Roxbury	2	2.1%
Outside of Boston	2	2.1%
Age	**98**	
Under 18 years	2	2.0%
18–24 years	8	8.2%
25–44 years	36	36.7%
45–64 years	45	45.9%
65+ years	7	7.1%

	Number	Percent
Race/Ethnicity	**97**	
American Indian or Alaska Native	2	2.1%
Asian	3	3.1%
Black	44	45.4%
Latino	33	34.0%
Middle Eastern or North African	1	1.0%
Native Hawaiian or Other Pacific Islander	0	0.0%
White	10	10.3%
Other	2	2.1%
Multiple races	2	2.1%
Current Sex or Gender Identity	**97**	
Female	55	56.7%
Male	35	36.1%
Transgender male	3	3.1%
Transgender female	0	0.0%
Genderqueer, (neither exclusively male or female)	3	3.1%
Additional gender category	1	1.0%
Educational Attainment	**96**	
High school graduate or less	55	57.3%
Some college/certification program	29	30.2%
College graduate or more	12	12.5%

DATA SOURCE: Boston CHNA Pre-Focus Group Survey, 2019
NOTES: Racial/Ethnic categories were recoded to be mutually exclusive where Latino includes respondents who identified as Latino regardless of race, each racial category includes respondents who identified as a single race, and multiple races includes respondents who selected multiple racial categories

APPENDIX G. LIST OF FOCUS GROUP HOSTS AND/OR RECRUITING ORGANIZATIONS

Organization	Population Groups
Boston Chinatown Neighborhood Center	Chinese residents living in Chinatown
Boston Housing Authority– Franklin Hill Tenants Association	Residents living in public housing in Dorchester or Hyde Park
Boston Public Health Commission PAATHS Program	Residents in recovery or who are actively using
Boston Tenancy Project (Bay Cove)	Residents who are housing insecure (no permanent address or close to eviction) in Dorchester, Mattapan, or Roxbury
Brookview House– Shelter for Homeless Women and Children	Residents who are housing insecure (no permanent address or close to eviction) in Dorchester, Mattapan, or Roxbury
Central Boston Elder Services	Seniors (ages 60–75) with complex, challenging issues (e.g. homebound, medical complications)
Chinatown Neighborhood Council	Chinese residents living in Chinatown
Community Labor United	Female low-wage workers (e.g. housekeepers, child care workers, hotel service workers, etc.)
East Boston Social Centers	Latino residents in East Boston
Gardner Pilot Academy Adult Education Program	Immigrant parents of school aged children (5–18 years old)
International Institute of New England	Male low-wage workers
Justice Resource Institute– GLASS	LGBTQ youth (ages 14–21 years)
Mattapan Community Health Center	Haitian residents living in Mattapan
Mother's for Justice and Equality	Survivors of violence; mothers impacted by community violence
New England United for Justice	Female low-wage workers

APPENDIX H. LIST OF KEY INFORMANT INTERVIEWEES

Organization	Name	Position
Action for Boston Community Development (ABCD)	Amelia Youngstrom	Director, ABCD Brighton
Black Ministerial Alliance	Sharyn Halliday	Teen Café Coordinator and Interim Director of Education
Boston Area Rape Crisis Center	Casey Corcoran	Youth Sexual Violence Education Program Director
Boston Center for Independent Living	Bill Henning	Executive Director
Boston Chinatown Neighborhood Center	Yoyo Yau	Director of Family and Community Engagement Programs
Boston Health care for the Homeless	Georgia Thomas-Dias	Director, Family Team
Boston Medical Center	Dr. Megan Sandel	MD, Associate Director of GROW Clinic
Boston Medical Center– Grayken Center for Addiction	Michael Botticelli	Executive Director, Grayken Center for Addiction at BMC
Boston Police Department	Jimmy Chin	Deputy Superintendent
Boston Private Industry Council	Alysia Ordway	Employment Engagement Director
Boston Public Health Commission	Monica Valdes Lupi	Executive Director
Boston Public Schools	Tatiana Grant	School Nurse
Boston Public Schools	Colleen Kearns, LICSW	Restorative Justice Manager
Bowdoin Street Health Center	Dr. Jean Alves	Physician
Casa Myrna	Joanna Garcia	Bilingual Counselor
Central Boston Elder Services	Kattia Ira, Mila Spitkovsky, Jacquelyn Lewis	Long Term Support Manager; Director of Long Term Support Services; Senior Manager of Long Term Support
Climate Ready Boston	Bud Ris	Senior Advisor on Climate
Community Servings	Jean Terranova	Director of Food and Health Policy
Dimock Health Center	Dr. Minter-Jordan	CEO and President
Economic Mobility Pathways (EMPath)	Ashley Winning, Caitlin Smith	Vice President of Research and Evaluation; Director of Housing Redevelopment
Ethos	Dale Mitchell	CEO

Organization	Name	Position
Fenway Health	David Todisco	Acting Director of Behavioral Health
Greater Boston Food Bank	Rachel Zack, Jonathan Tetrault	Epidemiologist; Senior Manager of Community Initiatives
Green Justice Coalition	Rev. Mariama White–Hammond	Minister of Ecological Justice and Green Justice Coalition Fellow
Harvard Global Health Institute	Dr. Renee Salas	Physician; Clinical Instructor at Harvard Global Health Institute
Horizons for Homeless Children	Sheila O'Neil	Executive Director, Community Children's Centers & Family Partnerships
Islamic Society of Boston Cultural Center	Dr. Sara King Yilmaz	Physician
Massachusetts Department of Public Health	Monica Bharel	Commissioner
Metropolitan Area Planning Council (MAPC)	Eric Bourassa	Transportation Director
Mother's for Justice and Equality	Monalisa Smith	President
Nurtury	Jay Smith	Chief Advancement Officer
Osiris Institute	Larry Higginbottom	CEO
Pine Street Inn	Lyndia Downie	President and Executive Director
Prostate Health Education Network (PHEN)	Tom Farrington	President and Founder
Rosie's Place	Sandy Mariano	Vice President of Internal Programs
SEIU	Peter Mackinnon	President
South Cove Community Health Center	Eugene Welch	Executive Director
VIET–AID	Lisette Le	Executive Director

APPENDIX I. ADDITIONAL DATA

Population Overview

Table 37. Under 18 Age Distribution, by Boston and Neighborhood, 2013–2017

	Under 5 years	5–9 years	10–14 years	15–17 years
Boston	5.2%	4.3%	4.1%	2.7%
Allston/Brighton	3.7%	2.3%	1.8%	1.3%
Back Bay	3.2%	1.5%	1.8%	0.7%
Charlestown	8.1%	4.7%	3.8%	1.4%
Dorchester (zip codes 02121, 02125)	6.0%	6.5%	5.9%	4.3%
Dorchester (zip codes 02122, 02124)	6.8%	5.6%	6.0%	4.0%
East Boston	6.8%	5.4%	5.2%	3.2%
Fenway	1.2%	1.4%	0.6%	0.7%
Hyde Park	5.0%	5.8%	8.0%	4.7%
Jamaica Plain	5.7%	3.6%	3.8%	2.4%
Mattapan	5.9%	6.1%	6.4%	4.3%
Roslindale	6.3%	6.3%	4.9%	3.7%
Roxbury	5.0%	5.9%	4.9%	3.3%
South Boston	4.3%	3.0%	3.4%	1.6%
South End	5.3%	3.5%	3.0%	1.6%
West Roxbury	8.7%	4.2%	4.4%	3.1%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Data represent the Under 18 age category disaggregated (denominator for each age grouping is out of total population)

Table 38. 65 and Over Age Distribution, by Boston and Neighborhood, 2013–2017

	65–69 years	70–74 years	75–79 years	80–84 years	85+ years
Boston	3.5%	2.7%	1.8%	1.4%	1.5%
Allston/Brighton	2.7%	2.5%	1.7%	1.8%	1.9%
Back Bay	4.7%	3.9%	2.4%	1.8%	1.8%
Charlestown	4.1%	2.5%	1.0%	1.4%	1.5%

	65–69 years	70–74 years	75–79 years	80–84 years	85+ years
Dorchester (zip codes 02121, 02125)	3.7%	2.7%	1.6%	0.8%	1.2%
Dorchester (zip codes 02122, 02124)	3.8%	3.5%	1.7%	1.2%	1.1%
East Boston	2.8%	2.2%	1.4%	1.1%	1.5%
Fenway	1.5%	1.0%	1.2%	0.9%	0.8%
Hyde Park	4.2%	2.8%	2.0%	2.1%	2.1%
Jamaica Plain	3.6%	3.2%	1.7%	1.4%	2.4%
Mattapan	4.8%	3.0%	3.0%	1.2%	NA
Roslindale	4.5%	2.3%	2.1%	1.5%	2.0%
Roxbury	3.2%	2.9%	1.9%	1.3%	0.9%
South Boston	2.4%	2.0%	1.8%	1.3%	1.2%
South End	3.3%	2.2%	2.0%	1.5%	1.7%
West Roxbury	5.3%	4.0%	3.2%	2.6%	3.7%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; NA denotes where data are suppressed due to insufficient sample size; Data represent the Under 18 age category disaggregated (denominator for each age grouping is out of total population)

Figure 182. Percent Population by Sex, by Boston and Neighborhood, 2013–2017
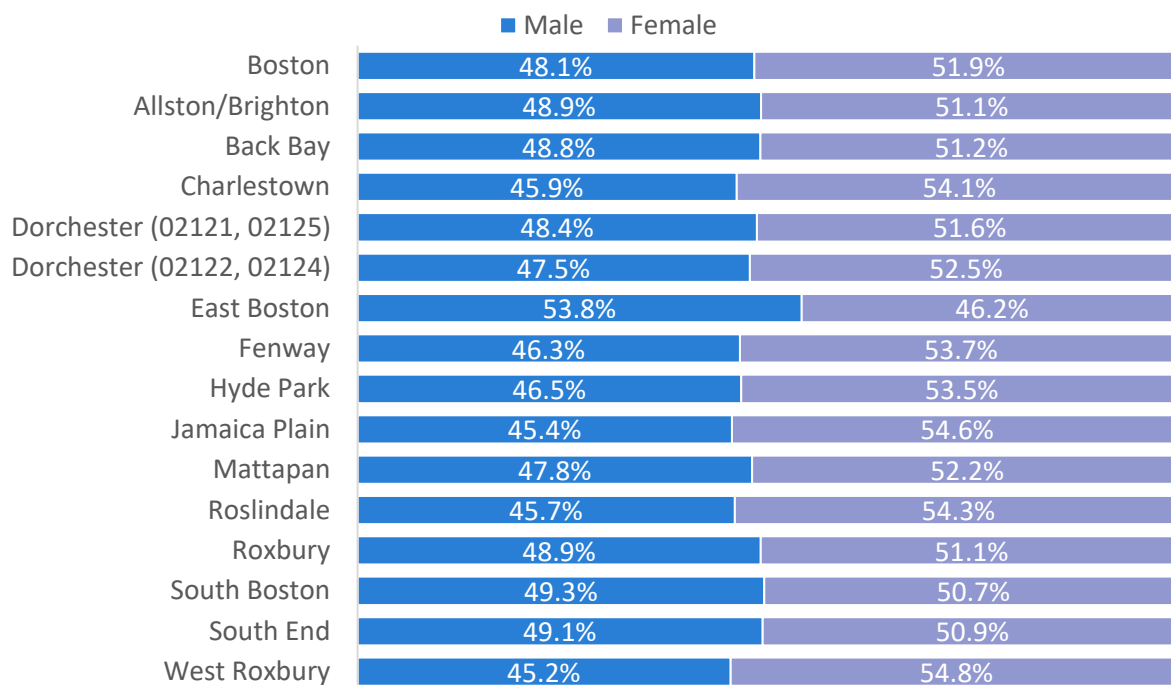
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

Racial, Ethnic, Cultural, and Language Diversity

Table 39. Racial and Ethnic Distribution, by Boston and Neighborhood, 2013–2017

	Asian	Black	Latino	White	Other
Boston	9.4%	22.7%	19.4%	44.9%	3.6%
Allston/Brighton	17.7%*	4.9%*	11.7%*	61.7%*	8.6%*
Back Bay	10.6%	4.1%*	6.8%*	76.1%*	2.4%*
Charlestown	7.2%	5.8%*	11.8%*	73.2%*	2.0%*
Dorchester (02121, 02125)	6.7%*	44.8%*	24.6%*	17.5%*	6.5%*
Dorchester (02122, 02124)	9.9%	49.0%*	14.8%*	21.6%*	4.7%
East Boston	3.8%*	2.6%*	57.4%*	32.6%*	3.7%
Fenway	18.3%*	5.6%*	12.9%*	60.0%*	3.2%
Hyde Park	2.1%*	42.2%*	27.1%*	25.1%*	3.4%
Jamaica Plain	6.7%*	10.6%*	21.8%*	56.8%*	4.0%
Mattapan	NA	77.2%*	15.0%*	4.2%*	2.8%
Roslindale	2.2%*	21.4%	24.5%*	48.9%*	3.0%
Roxbury	8.3%	40.8%*	27.3%*	20.0%*	3.7%
South Boston	4.8%*	5.9%*	10.2%*	77.5%*	1.6%*
South End	23.0%*	11.7%*	16.6%*	45.8%	2.8%
West Roxbury	6.7%*	5.6%*	7.9%*	77.8%*	2.0%*

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Latino includes residents who identify as Latino regardless of race and racial categories include residents who do not identify as Latino; Other includes American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some other race, and Two or more races; NA denotes where data not presented due to insufficient sample size; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the Boston estimate within specific racial/ethnic category ($p < 0.05$)

Table 40. Total Population, by Boston and Race/Ethnicity, 2008–2012 and 2013–2017

	2008–2012	2013–2017	% difference
Boston	619,662	669,158	8.0%
Asian	55,836	62,956	12.8%
Black	143,271	152,011	6.1%
Latino	107,844	129,520	20.1%
White	291,431	300,491	3.1%
Other	21,280	24,180	13.6%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2008-2012 and 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Other includes American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some other race, and Two or more races

Table 41. Percent Population 5 Years and Over by Languages Spoken, by Boston, 2013–2017

	Percent
English Only	62.4%
Spanish	16.8%
French, Haitian Creole, or Cajun	5.0%
Other Indo–European languages	4.6%
Chinese (inclu. Mandarin, Cantonese)	4.2%
Vietnamese	1.7%
Other and unspecified languages	1.6%
Russian, Polish, or other Slavic languages	1.3%
Other Asian and Pacific Islander languages	0.7%
Arabic	0.7%
German or West Germanic languages	0.5%
Korean	0.5%
Tagalog (inclu. Filipino)	0.1%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Data organized in descending order

Figure 183. Percent Population 5 Years and Over Who Speak a Language Other Than English Less Than "Very Well," by Boston and Neighborhood, 2013–2017
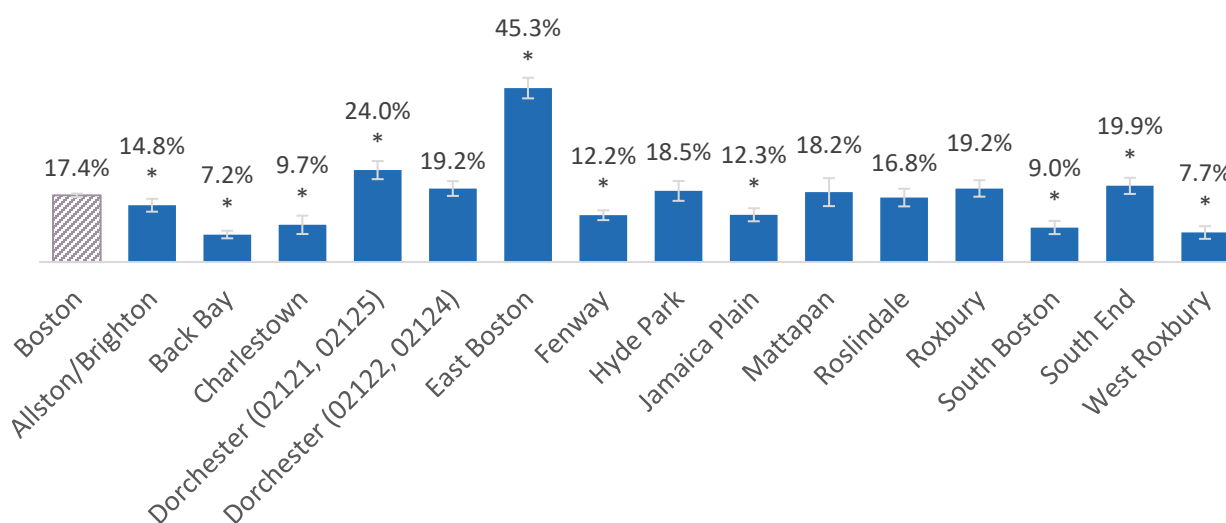
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk denotes where the neighborhood estimate is significantly different compared to the Boston estimate (p<0.05)

Figure 184. Percent Boston Public School Enrolled English Language Learner Students, 2014–2018
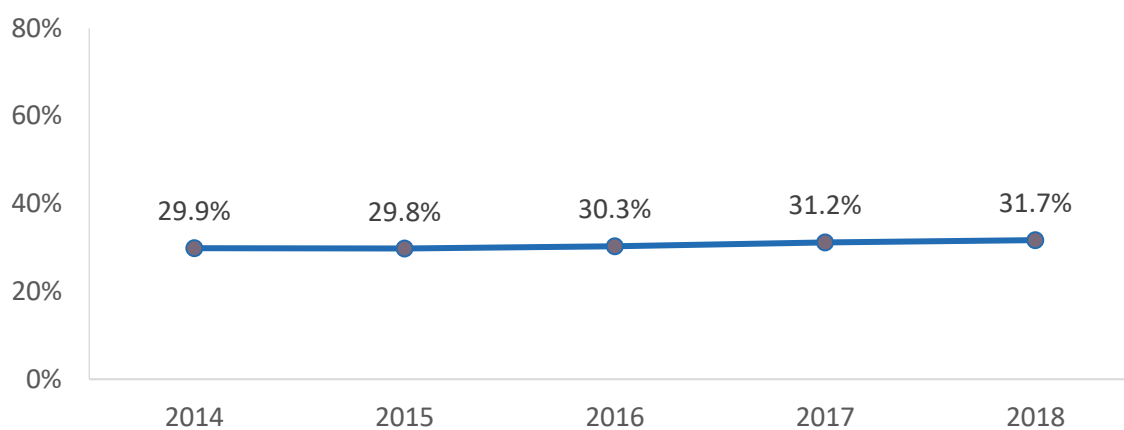
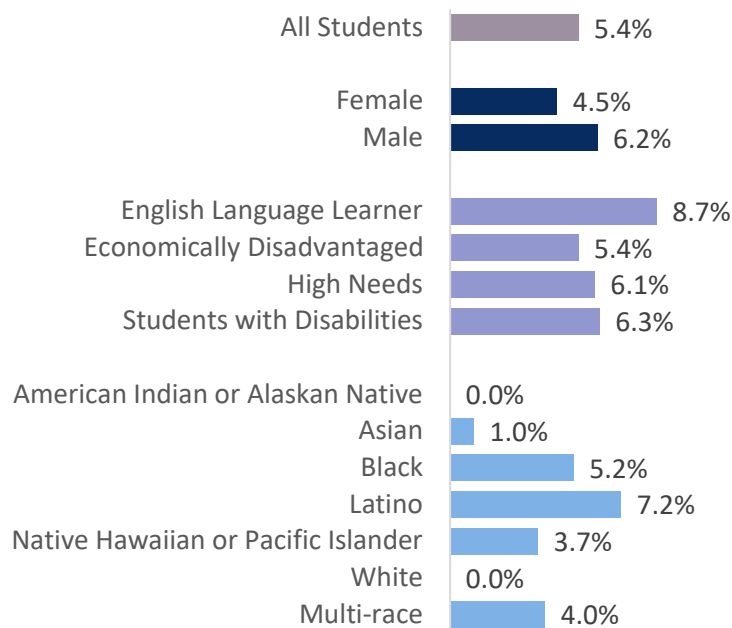DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Trends - DART, 2014-2018

Table 42. Percent Foreign Born Population by Region of Origin, by Boston, 2013–2017

	Percent
Caribbean	29.1%
Asia	26.0%
Europe	12.6%
Africa	10.8%
Central America	10.1%
South America	8.5%
North America (exclu. Mexico)	1.6%
Mexico	1.2%
Oceania	0.3%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Data organized in descending order

Figure 185. Percent Population by Citizenship Status, by Boston, 2015

- Native Born
- Naturalized
- Documented Foreign-Born
- Undocumented Foreign-Born

5.5%
9.0%
14.5%
71.0%
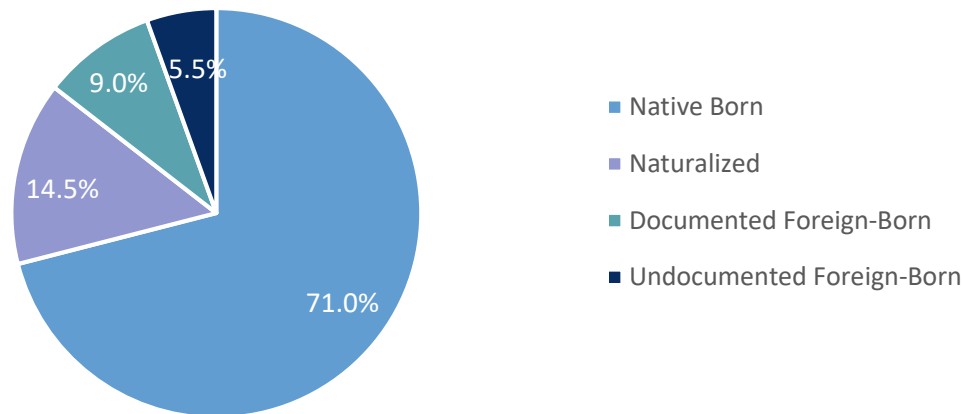
DATA SOURCES: U.S. Census Bureau, American Community (ACS) Survey, 1-Year Estimates, as analyzed by Boston Planning and Development Agency (BPDA) Research Division, reported in BPDA, "Our Shared Future: Charting a Path for Immigrant Advancement in a New Political Landscape," as presented at the Boston Foundation (2017), 2015
NOTE: Undocumented share of undocumented foreign born is based on the Migration Policy Institute estimates for Massachusetts, as reported in "Profile of the Unauthorized Population: Massachusetts." The estimate for MA was divided by the ACS estimate of non-citizens in MA. These calculated numbers are considered rough estimates in absence of existing data

Figure 186. Percent Immigration Issues Presented to MOIA Pro-Bono Legal Clinics (N=1,088), by Issue, 2015–2017

48%   Family-based immigration
12%   Humanitarian issue
11%   Employment-based immigration
10%   Removal defense
8%   Naturalization
7%   Non-immigrant visa
4%   DACA/DAPA
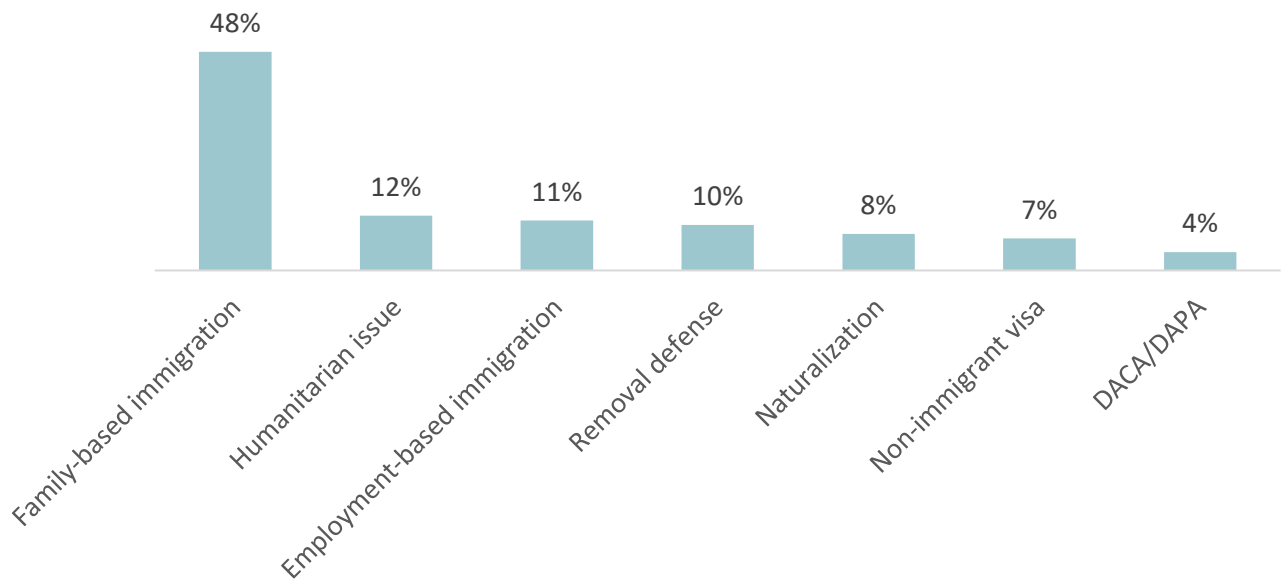
DATA SOURCE: Mayor's Office of Immigrant Advancement (MOIA) issue tracker dataset, 2015-2017; Courtesy of MOIA
NOTE: Please note that the number of occurrences for each issue does not directly correlate to the number of constituents; The graph simply shows the number of occurrences the volunteer attorneys were presented with that immigration topic

Education

Figure 187. Educational Attainment for Population 25 Years and Over, by Boston and Neighborhood, 2013–2017

Legend:
- ■ Less than HS diploma
- ■ HS graduate
- ■ Some college/ Associate's degree
- ■ Bachelor's degree or more

Neighborhood	Less than HS diploma	HS graduate	Some college/ Associate's degree	Bachelor's degree or more
Boston	13.9%	20.9%	17.7%	47.4%
Allston/Brighton	8.3%	12.1%	12.9%	66.7%
Back Bay	5.4%	6.5%	9.2%	78.8%
Charlestown	9.9%	14.7%	11.9%	63.5%
Dorchester (02121, 02125)	20.8%	30.7%	22.1%	26.5%
Dorchester (02122, 02124)	19.1%	31.8%	24.5%	24.7%
East Boston	31.4%	31.6%	14.2%	22.8%
Fenway	8.8%	9.4%	10.8%	71.0%
Hyde Park	12.9%	28.0%	30.8%	28.3%
Jamaica Plain	7.8%	14.0%	13.2%	65.0%
Mattapan	16.6%	34.8%	31.9%	16.6%
Roslindale	9.5%	25.1%	22.2%	43.2%
Roxbury	21.7%	25.5%	23.0%	29.8%
South Boston	8.5%	15.3%	12.7%	63.5%
South End	16.8%	14.4%	11.3%	57.4%
West Roxbury	7.5%	19.7%	19.4%	53.4%
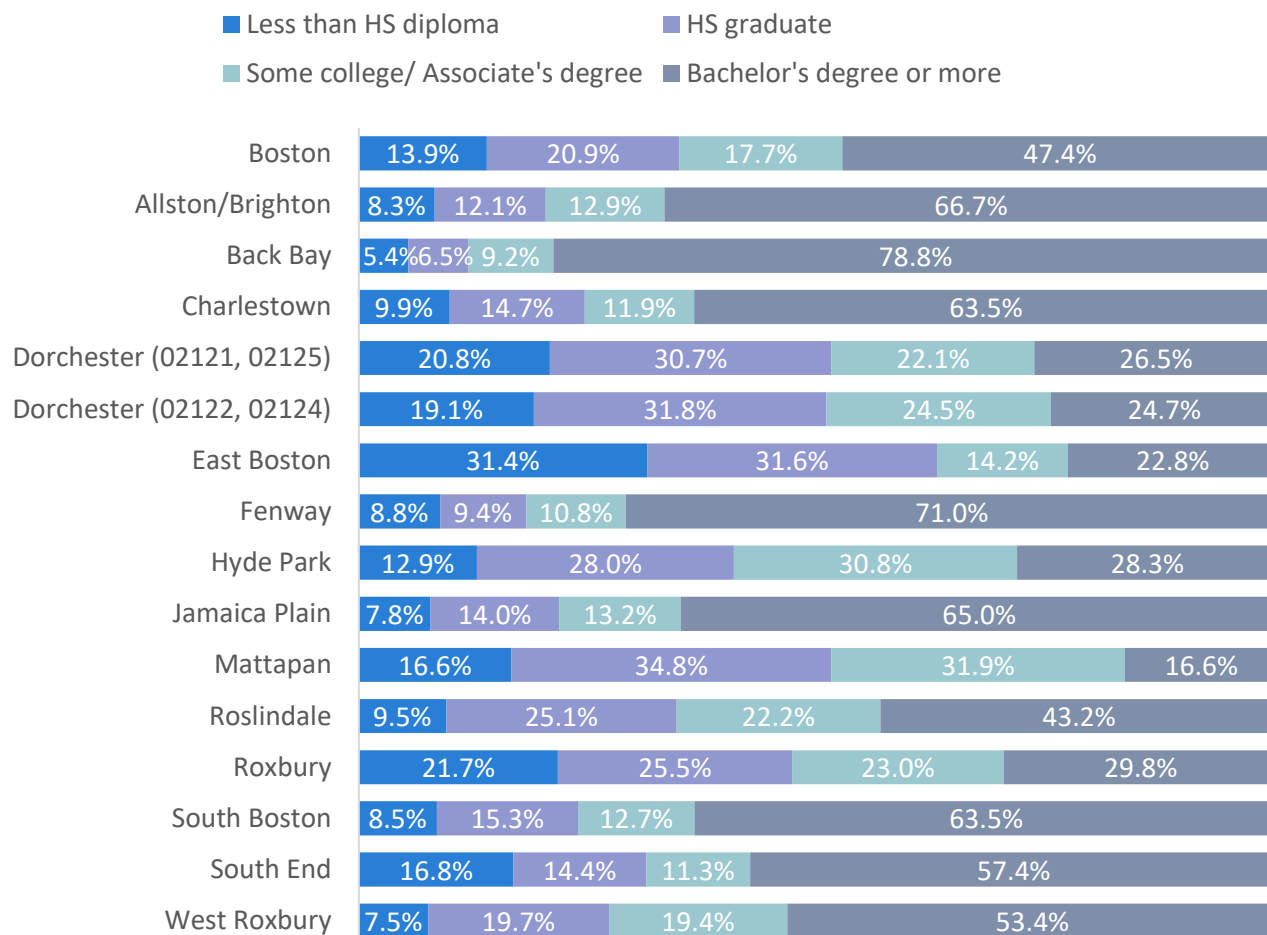
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

Figure 188. Graduation Rate Among Boston Public High School Students, by Students with IEPs and General Education, 2017
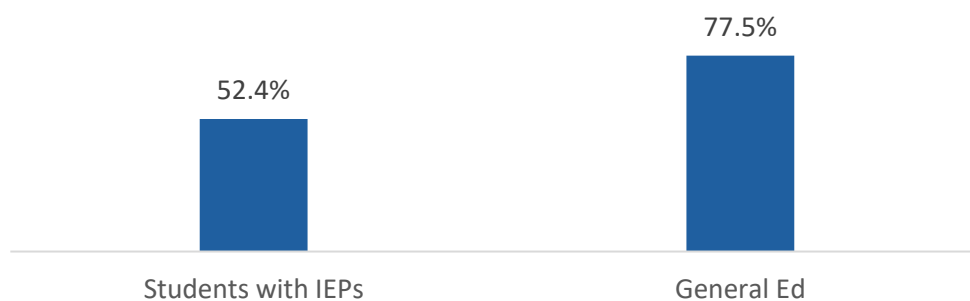
DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Special Education Data, 2017
NOTES: Years represent school years (e.g., 2014 represents school year 2013-2014); Students with IEPs indicates the percent of enrollment who have an Individualized Education Program (IEP)

Figure 189. Dropout Rate Among Boston Public High School Students, 2018

Group	Rate
All Students	5.4%
Female	4.5%
Male	6.2%
English Language Learner	8.7%
Economically Disadvantaged	5.4%
High Needs	6.1%
Students with Disabilities	6.3%
American Indian or Alaskan Native	0.0%
Asian	1.0%
Black	5.2%
Latino	7.2%
Native Hawaiian or Pacific Islander	3.7%
White	0.0%
Multi-race	4.0%

DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Student Dropout Rate Report, 2018

NOTES: Years represent school years (e.g., 2014 represents school year 2013-2014); Dropouts are defined as students who leave school prior to graduation for reasons other than transfer to another school, in other words, the data indicate the percentage of students in grades 9-12 who dropped out of school between July 1 and June 30 prior to the listed year and who did not return to school by the following October 1; Dropout rates are not reported for any student group where the number of students is less than 6

Figure 190. Percent of Boston Public School Students Scoring Proficient or Higher on MCAS Tests, by Test Subject and by Massachusetts and Boston, 2018
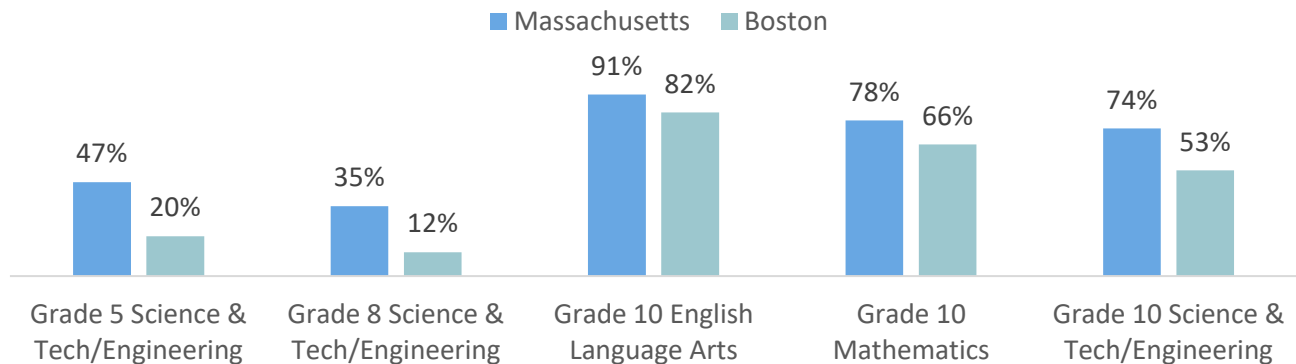
Subject	Massachusetts	Boston
Grade 5 Science & Tech/Engineering	47%	20%
Grade 8 Science & Tech/Engineering	35%	12%
Grade 10 English Language Arts	91%	82%
Grade 10 Mathematics	78%	66%
Grade 10 Science & Tech/Engineering	74%	53%

DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Assessment, MCAS Tests, 2018

NOTES: Students' scores can fall into four achievement level categories: Warning/Failing, Needs Improvement, Proficient; and Advanced; In order to earn a Competency Determination, students must achieve a score of either Proficient on the grade 10 English Language Arts and Mathematics tests, or a score of Needs Improvement, and satisfy the requirements of an Educational Proficiency Plan; for Science and Technology/Engineering (STE), students must achieve a score of Needs Improvement or higher on one of four high school STE tests

Figure 191. Percent Boston Public School Students (Grades 3–8) Scoring Meeting or Exceeding Expectations on Next Generation Massachusetts Comprehensive Assessment System (MCAS) Tests, by Test Subject and by Massachusetts and Boston, 2018
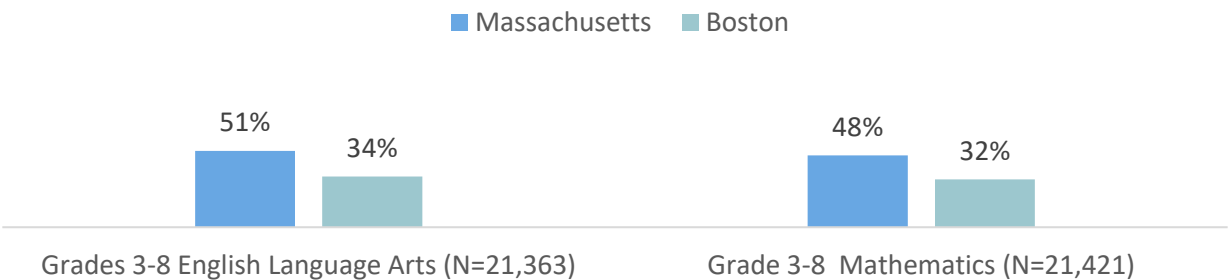
DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, School and District Profiles, Assessment, Next Generation MCAS Tests, 2018
NOTES: Students' scores can fall into four achievement level categories: Not Meeting Expectations, Partially Meeting Expectation, Meeting Expectations, and Exceeding Expectations; Next Generation MCAS tests were implemented starting 2017; Students who perform at the meeting expectations level or exceeding expectations level met or exceeded grade-level expectations in the subject

Employment and Workforce

Figure 192. Percent Population 16 Years and Over Unemployed, by Boston and Race/Ethnicity, 2017
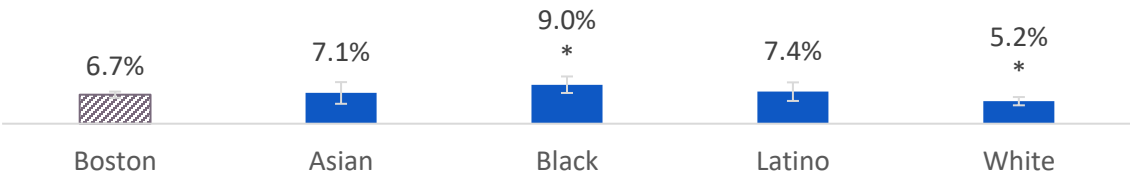
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017
NOTE: Asterisk (*) denotes race/ethnicity estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval
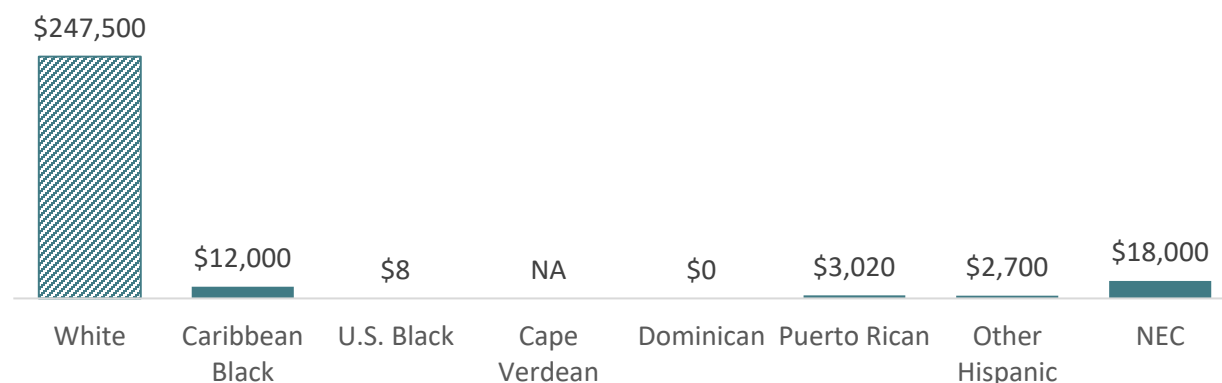
Figure 193. Percent Boston CHNA Survey Respondents Reporting Currently Working More Than One Job for Pay (N=1,304), 2019
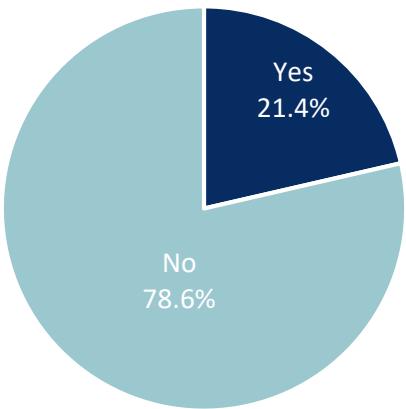
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Denominator for percentage calculations is the number of respondents who responded that they are "employed for wages" or "self-employed"

Figure 194. Percent Boston CHNA Survey Respondents Reporting Current Hours per Week Employed for Pay (N=1,297), 2019
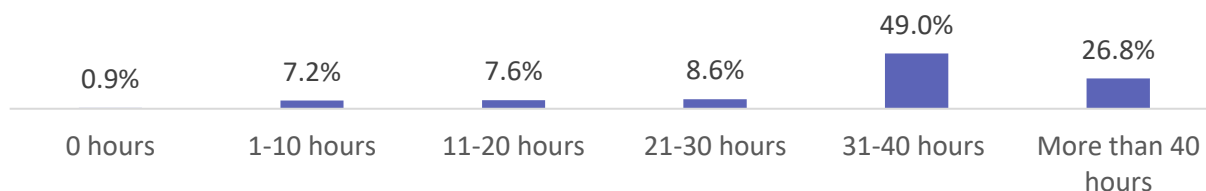
| 0.9% | 7.2% | 7.6% | 8.6% | 49.0% | 26.8% |
| 0 hours | 1-10 hours | 11-20 hours | 21-30 hours | 31-40 hours | More than 40 hours |

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Denominator for percentage calculations is the number of respondents who responded that they are "employed for wages" or "self-employed"

Income and Financial Security

Table 43. Average and Median Household Income (in U.S. Dollars), by Boston and Zip Code, 2013–2017

Zip Code	Neighborhood	Average	Median
Boston	**Boston**	**$95,114**	**$62,021**
02134	Allston/Brighton	$69,218	$49,938
02135	Allston/Brighton	$79,397	$61,566
02163	Allston/Brighton	$68,432	$64,000
02108	Back Bay	$192,935	$126,224
02109	Back Bay	$197,828	$129,716
02110	Back Bay	$256,500	$108,438
02113	Back Bay	$118,824	$91,212
02114	Back Bay	$138,702	$89,452
02116	Back Bay	$183,165	$103,422
02199	Back Bay	$165,278	$82,238
02129	Charlestown	$143,820	$103,834
02121	Dorchester	$45,874	$27,964
02125	Dorchester	$74,396	$53,382
02122	Dorchester	$73,842	$56,024
02124	Dorchester	$70,587	$50,227
02128	East Boston	$70,513	$52,154
02115	Fenway	$71,111	$38,759
02215	Fenway	$72,124	$43,403
02136	Hyde Park	$79,517	$64,877
02130	Jamaica Plain	$108,494	$84,847
02126	Mattapan	$66,689	$50,039
02131	Roslindale	$91,960	$72,127
02119	Roxbury	$49,233	$30,663

Zip Code	Neighborhood	Average	Median
02120	Roxbury	$51,456	$32,243
02127	South Boston	$113,153	$91,597
02210	South Boston	$212,297	$170,152
02111	South End	$112,325	$39,329
02118	South End	$129,325	$70,575
02132	West Roxbury	$113,775	$93,343

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017

Figure 195. Percent Population Living Below 200% of Poverty Level, by Boston and Neighborhood, 2013–2017
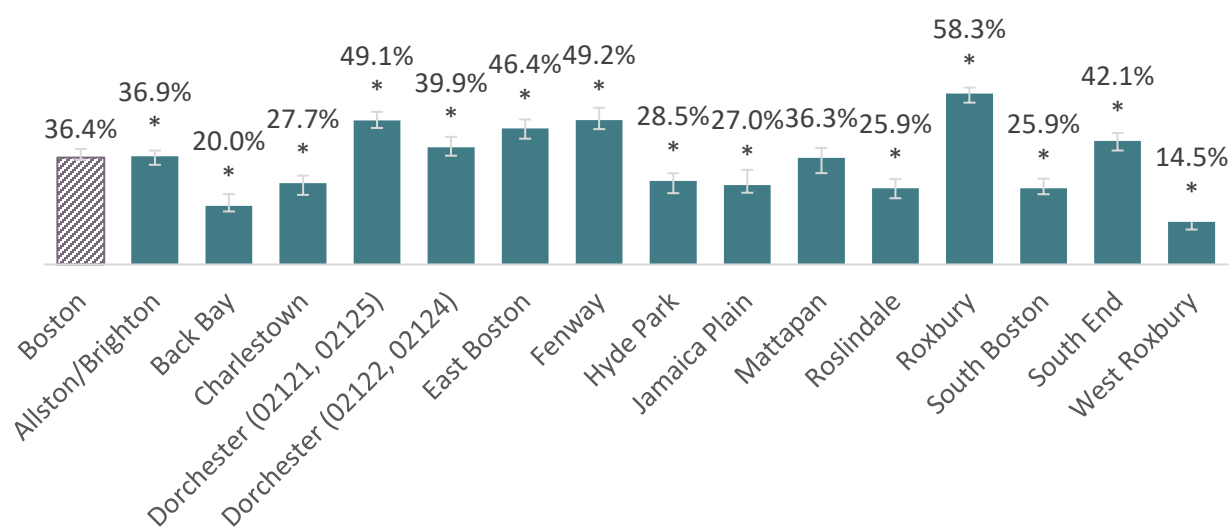
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05)

Figure 196. Percent Families Living Below Poverty Level, by Boston and Neighborhood, 2013–2017
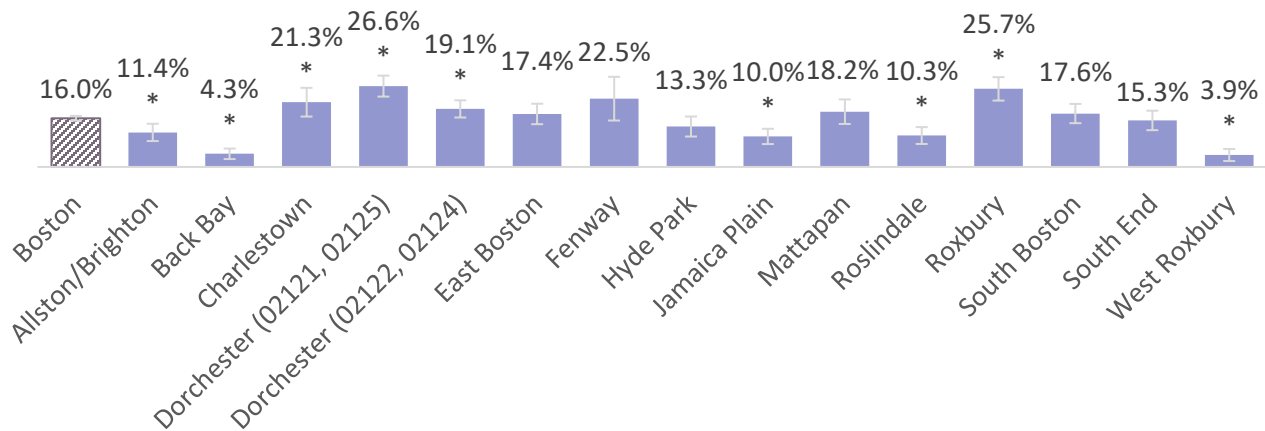
DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Figure 197. Percent Families Below Poverty Level, by Boston and Race/Ethnicity, 2017
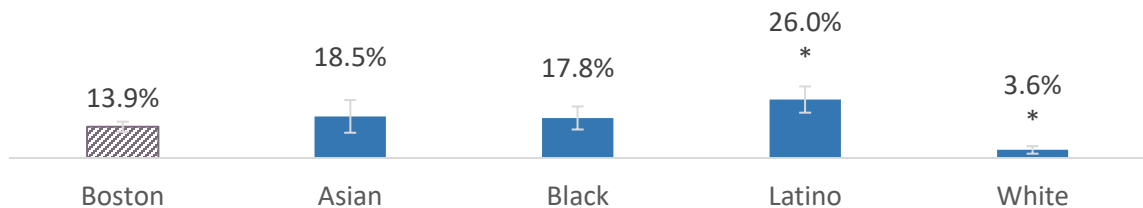
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017
NOTE: Asterisk (*) denotes race/ethnicity estimate was significantly different compared to the Boston estimate (p < 0.05); Error bars show 95% confidence interval

Figure 198. Household Median Net Worth (in U.S. Dollars), by Boston Metropolitan Statistical Area, 2014

$247,500	$12,000	$8	NA	$0	$3,020	$2,700	$18,000
White	Caribbean Black	U.S. Black	Cape Verdean	Dominican	Puerto Rican	Other Hispanic	NEC

DATA SOURCE: Duke University, National Asset Scorecard for Communities of Color (NASCC), Boston NASCC survey, as analyzed and reported by Muñoz, A. P. et al, Federal Reserve Bank of Boston, The Color of Wealth in Boston (2015), 2014
NOTES: Boston Metropolitan Statistical Area includes the following Massachusetts counties: Essex County, Middlesex County, Norfolk County, and Suffolk County, and Rockingham County, New Hampshire and Strafford County, New Hampshire; Wealth or net worth is measured by the difference between one's assets and debts or liabilities; The "not elsewhere classified" (NEC) category includes mainly respondents that chose more than one race; NA denotes where values for Cape Verdeans were not calculated because sample sizes were too small; This study focused on U.S. born Black, Caribbean Black, Cape Verdean, Puerto Rican, and Dominican differences and did not report data on other racial/ethnic groups

Table 44. Gini Index, by Boston and Zip Code, 2013–2017

Zip Code	Neighborhood	Index
Boston	Boston	0.5425
02134	Allston/Brighton	0.5015
02135	Allston/Brighton	0.4781
02163	Allston/Brighton	0.4218
02108	Back Bay	0.5141
02109	Back Bay	0.5293
02110	Back Bay	0.6427
02113	Back Bay	0.4462
02114	Back Bay	0.5396
02116	Back Bay	0.5923
02199	Back Bay	0.5671
02129	Charlestown	0.5248
02121	Dorchester	0.5479
02125	Dorchester	0.5051
02122	Dorchester	0.4558
02124	Dorchester	0.4959
02128	East Boston	0.4648
02115	Fenway	0.6055
02215	Fenway	0.6083
02136	Hyde Park	0.4482
02130	Jamaica Plain	0.4812

Zip Code	Neighborhood	Index
02126	Mattapan	0.4695
02131	Roslindale	0.4557
02119	Roxbury	0.5422
02120	Roxbury	0.5464
02127	South Boston	0.4701
02210	South Boston	0.4172
02111	South End	0.6689
02118	South End	0.5914
02132	West Roxbury	0.4308

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: The Gini Index is a summary measure of income inequality. The Gini coefficient incorporates the detailed shares data into a single statistic, which summarizes the dispersion of income across the entire income distribution. The Gini coefficient ranges from 0, indicating perfect equality (where everyone receives an equal share), to 1, perfect inequality (where only one recipient or group of recipients receives all the income). The Gini is based on the difference between the Lorenz curve (the observed cumulative income distribution) and the notion of a perfectly equal income distribution

Figure 199. Average Credit Score, by Boston and Neighborhoods, 2017
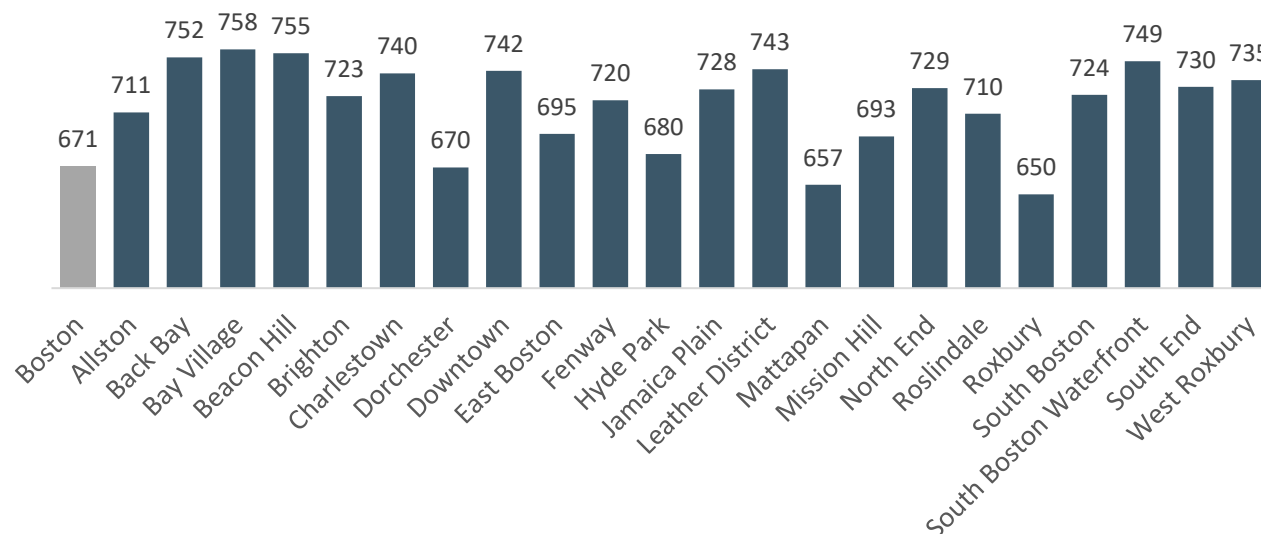
DATA SOURCE: Federal Reserve Bank of New York (FRBNY) Consumer Credit Panel/Equifax, as cited in Federal Reserve Bank of Boston, The Concentration of Financial Disadvantage: Debt Condition and Credit Report Data in Massachusetts Cities and Boston Neighborhoods (2018), 2017Q2
NOTE: Neighborhoods are defined per Boston Planning & Development Authority definitions
(http://www.bostonplans.org/getattachment/d09af00c-2268-437b-9e40-fd06d0cd20a2)

Figure 200. Percent Boston CHNA Survey Respondents Reporting Having Trouble with Paying Credit Card Bills, by All Respondents and Selected Indicators, 2019
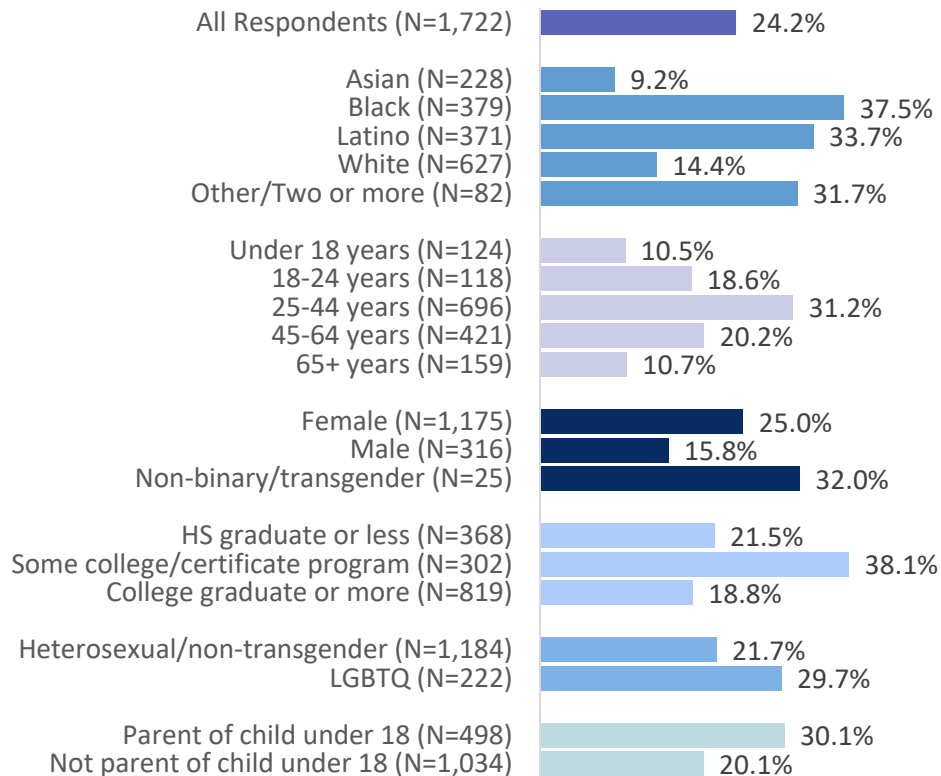
All Respondents (N=1,722) — 24.2%

Asian (N=228) — 9.2%
Black (N=379) — 37.5%
Latino (N=371) — 33.7%
White (N=627) — 14.4%
Other/Two or more (N=82) — 31.7%

Under 18 years (N=124) — 10.5%
18-24 years (N=118) — 18.6%
25-44 years (N=696) — 31.2%
45-64 years (N=421) — 20.2%
65+ years (N=159) — 10.7%

Female (N=1,175) — 25.0%
Male (N=316) — 15.8%
Non-binary/transgender (N=25) — 32.0%

HS graduate or less (N=368) — 21.5%
Some college/certificate program (N=302) — 38.1%
College graduate or more (N=819) — 18.8%

Heterosexual/non-transgender (N=1,184) — 21.7%
LGBTQ (N=222) — 29.7%

Parent of child under 18 (N=498) — 30.1%
Not parent of child under 18 (N=1,034) — 20.1%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups ($p < 0.05$): race/ethnicity, age, gender identity, educational attainment, sexual orientation, and parent status

Food Insecurity

Figure 201. Percent Boston CHNA Survey Respondents Reporting They Chose Fast Food Because It Was Cheaper Than Other Options in Past Month (N=1,796), by Frequency, 2019

Never/rarely — 84.0%
Sometimes — 9.4%
Often — 6.7%
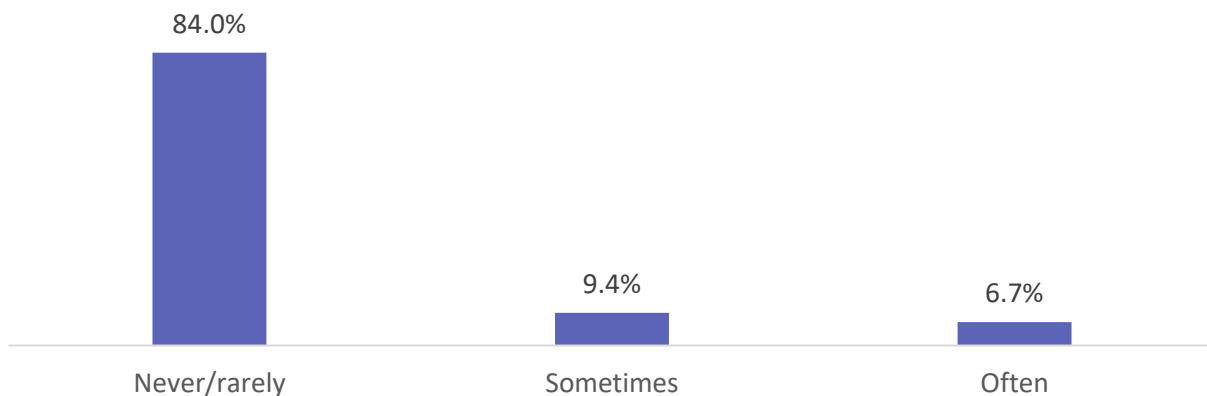
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Never/rarely includes respondents who selected "never/rarely' or "1-3 times per month (less than once per week)," Sometimes includes respondents who selected "1-2 times per week," and Often includes respondents who selected "3-4 times per week," "5-6 times per week," or "1+ times per day;" Question was worded: "In the past month, how often did you choose fast food (such as McDonalds, KFC, or Wendy's) because it was cheaper than other options?"; Percentage calculations do not include respondents who selected "prefer not to answer"

Figure 202. Percent Adults Reporting Food Purchased Did Not Last and Did Not Have Money to Get More, by Boston and Over Time, 2010–2017
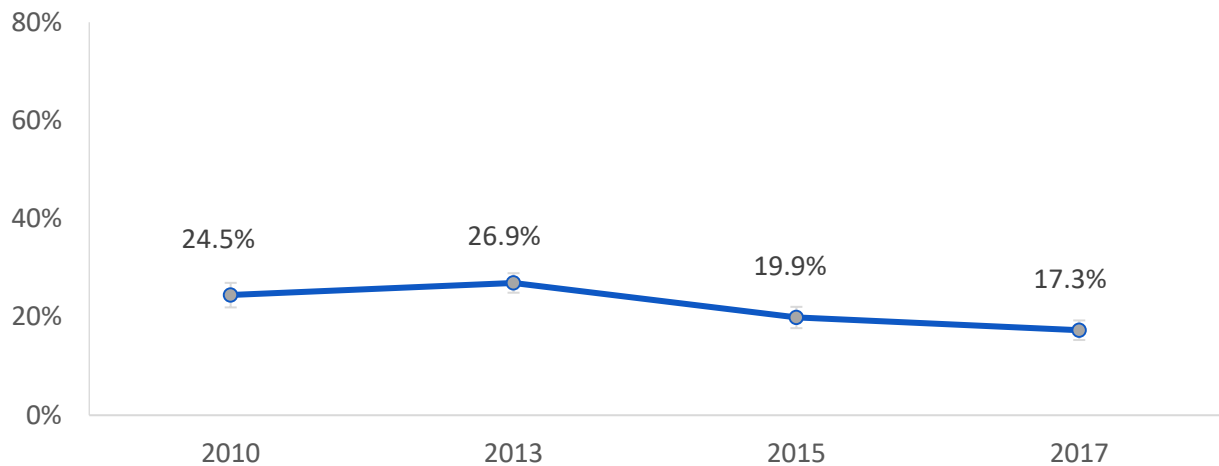
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Data show percentage of adults reporting it was sometimes or often true that the food didn't last and they did not have money to get more; Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

Figure 203. Percent Adults Reporting Food Purchased Did Not Last and Did Not Have Money to Get More, by Boston and Neighborhood, 2013, 2015 and 2017 Combined
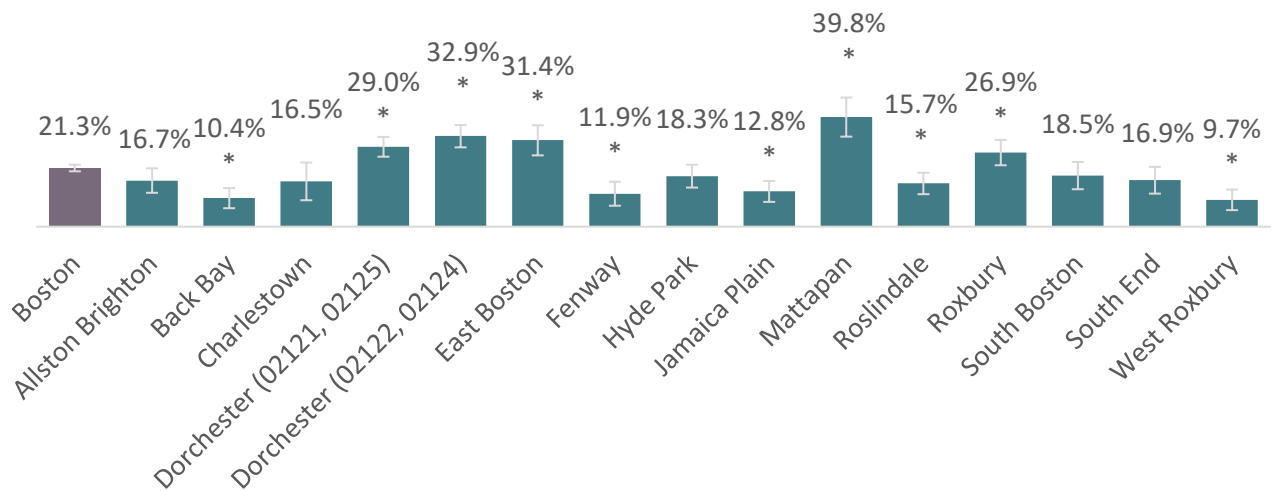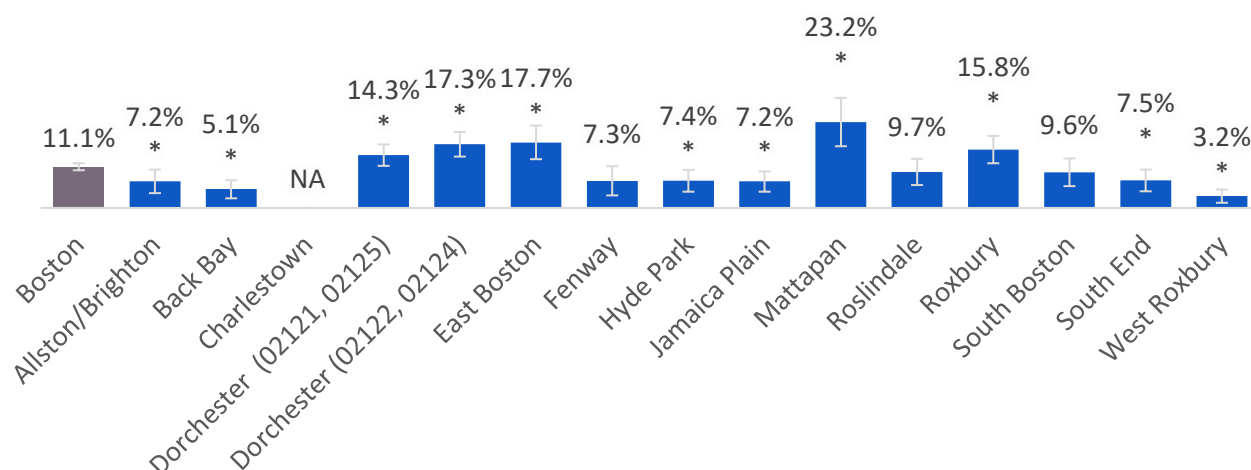

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Data show percentage of adults reporting it was sometimes or often true that the food didn't last and they did not have money to get more; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 204. Percent Population Food Insecure, by Boston and Neighborhoods, 2016
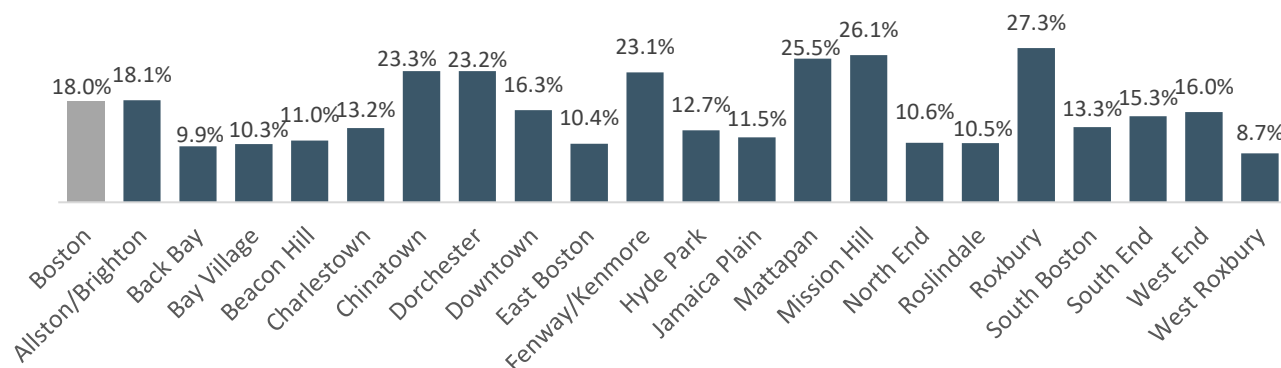
DATA SOURCE: Gundersen, C., A. Dewey, A. Crumbaugh, M. Kato & E. Engelhard. Map the Meal Gap 2018: A Report on County and Congressional District Food Insecurity and County Food Cost in the United States in 2016, Feeding America, Courtesy of The Greater Boston Food Bank, 2016
NOTE: Neighborhoods are defined per Boston Planning & Development Authority definitions; Food insecurity is defined as the household-level economic and social condition of limited or uncertain access to adequate food. Data from the Current Population Survey and Bureau of Labor Statistics (e.g., unemployment, poverty, homeownership, and other demographic variables) are assessed in relation to food insecurity to produce state-level estimates of food insecurity, from which county-level estimates are derived.

Figure 205. Percent Boston CHNA Survey Respondents Reporting That It Was Sometimes or Often True That They Worried That Their Food Would Run Out Before They Got Money to Buy More in Past 12 Months, by All Respondents and Primary Language Spoken, 2019

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Question was worded: "In the last 12 months, have you worried that your food would run out before you got money to buy more?" and respondents were asked to select one of the following response options: often true, sometimes true, never true, and prefer not to answer; Percentage calculations do not include respondents who selected "prefer not to answer"

Figure 206. Percent Boston CHNA Survey Respondents Reporting That They Worried That Their Food Would Run Out Before They Got Money to Buy More in Past 12 Months (N=1,893), 2019
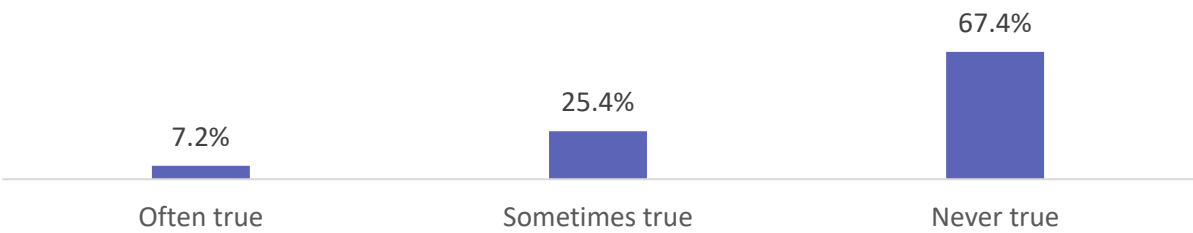
DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Question was worded: "In the last 12 months, have you worried that your food would run out before you got money to buy more?" and respondents were asked to select one of the following response options: often true, sometimes true, never true, and prefer not to answer; Percentage calculations do not include respondents who selected "prefer not to answer"

Figure 207. Percent Adults Reporting Feeling Hungry But Did Not Eat Because Could Not Afford Food, by Boston and Neighborhood, 2010–2017
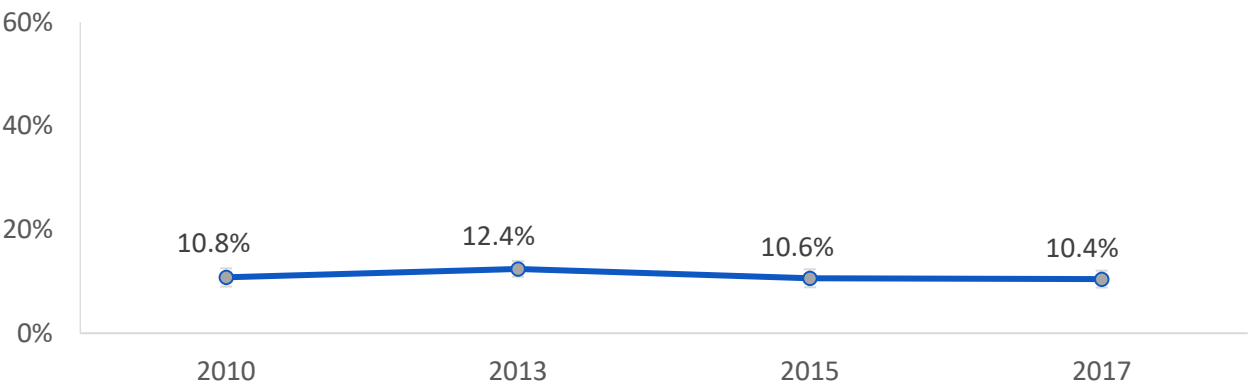
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Data show percentage of adults reporting it was sometimes or often true in the past 12 months they remained hungry because they could not afford food; Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 208. Percent Adults Reporting Feeling Hungry But Did Not Eat Because Could Not Afford Food, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined
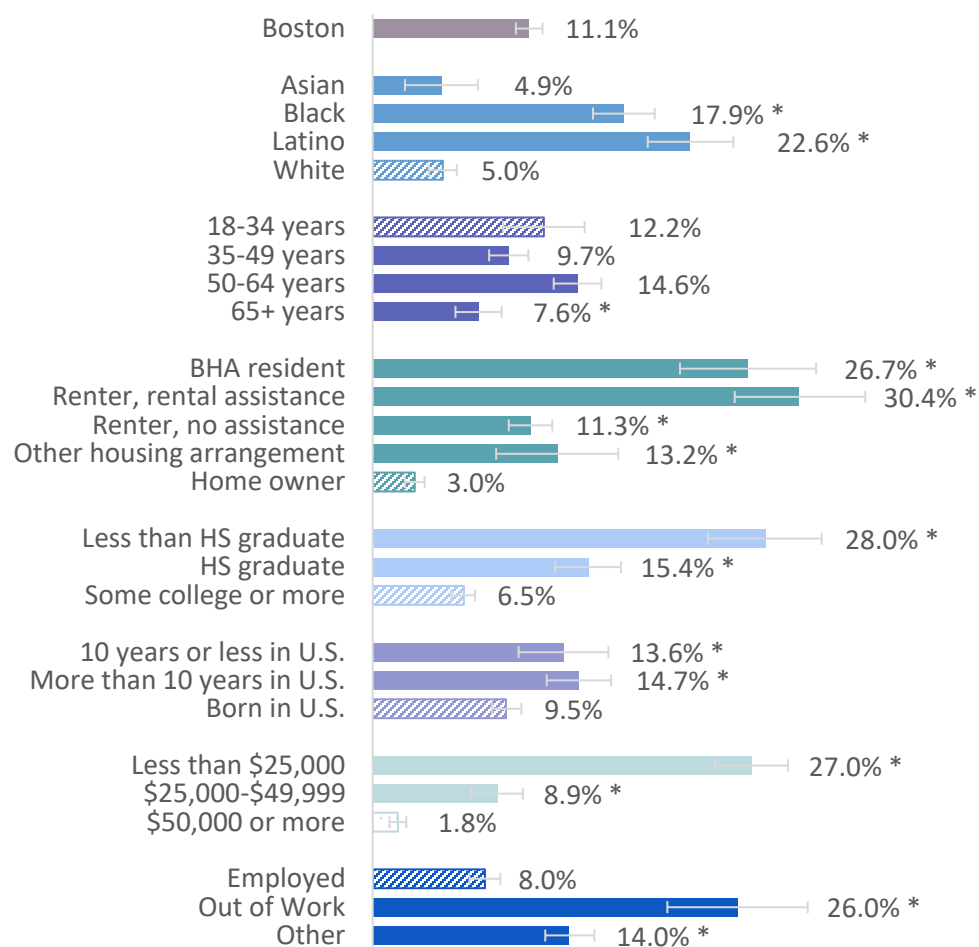
Category	Percent
Boston	11.1%
Asian	4.9%
Black	17.9% *
Latino	22.6% *
White	5.0%
18-34 years	12.2%
35-49 years	9.7%
50-64 years	14.6%
65+ years	7.6% *
BHA resident	26.7% *
Renter, rental assistance	30.4% *
Renter, no assistance	11.3% *
Other housing arrangement	13.2% *
Home owner	3.0%
Less than HS graduate	28.0% *
HS graduate	15.4% *
Some college or more	6.5%
10 years or less in U.S.	13.6% *
More than 10 years in U.S.	14.7% *
Born in U.S.	9.5%
Less than $25,000	27.0% *
$25,000-$49,999	8.9% *
$50,000 or more	1.8%
Employed	8.0%
Out of Work	26.0% *
Other	14.0% *

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data show percentage of adults reporting it was sometimes or often true in the past 12 months they remained hungry because they could not afford food; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Figure 209. Percent Adults Reporting Feeling Hungry But Did Not Eat Because Could Not Afford Food, by Boston and Neighborhood, 2013, 2015, and 2017 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Data show percentage of adults reporting it was sometimes or often true in the past 12 months they remained hungry because they could not afford food; NA denotes where data not presented due to insufficient sample size; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Housing

Figure 210. Housing Tenure, by Boston and Neighborhood, 2013–2017
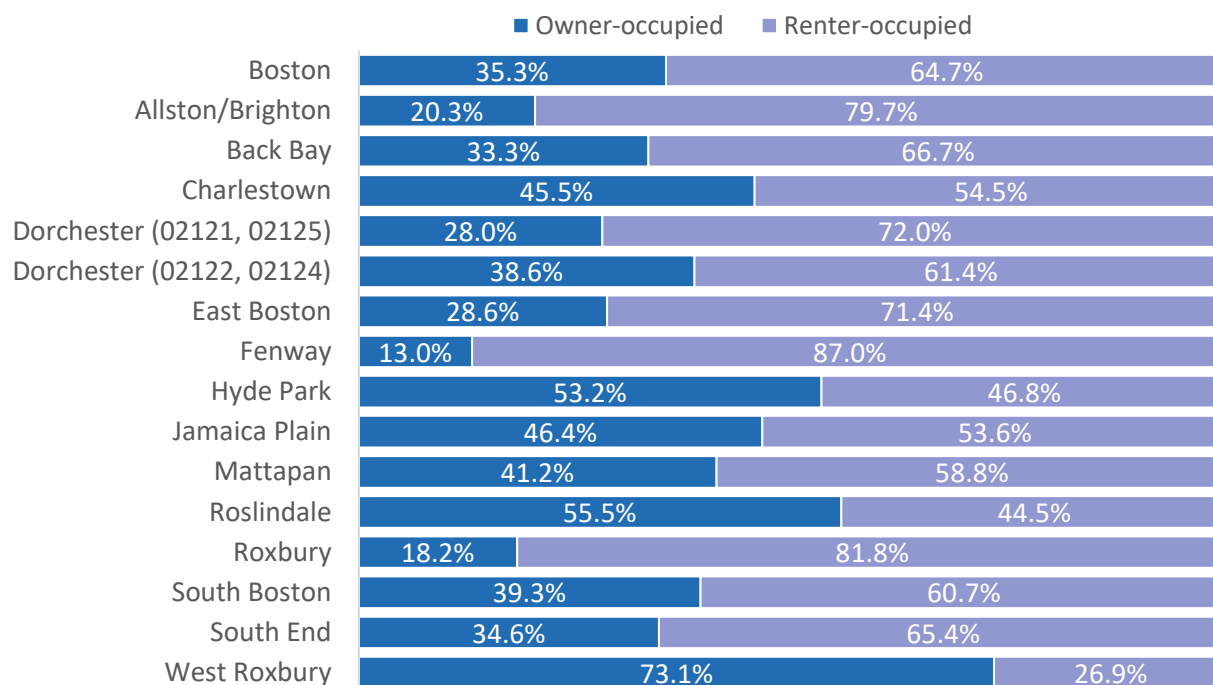
	Owner-occupied	Renter-occupied
Boston	35.3%	64.7%
Allston/Brighton	20.3%	79.7%
Back Bay	33.3%	66.7%
Charlestown	45.5%	54.5%
Dorchester (02121, 02125)	28.0%	72.0%
Dorchester (02122, 02124)	38.6%	61.4%
East Boston	28.6%	71.4%
Fenway	13.0%	87.0%
Hyde Park	53.2%	46.8%
Jamaica Plain	46.4%	53.6%
Mattapan	41.2%	58.8%
Roslindale	55.5%	44.5%
Roxbury	18.2%	81.8%
South Boston	39.3%	60.7%
South End	34.6%	65.4%
West Roxbury	73.1%	26.9%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

Figure 211. Housing Tenure, by Boston and Race/Ethnicity of Householder, 2017

■ Owner-occupied ■ Renter-occupied

	Boston	Asian	Black	Latino	White
Renter-occupied	68.4%	67.8%	71.4%	84.0%	54.9%
Owner-occupied	35.2%	32.2%	28.6%	16.0%	45.1%
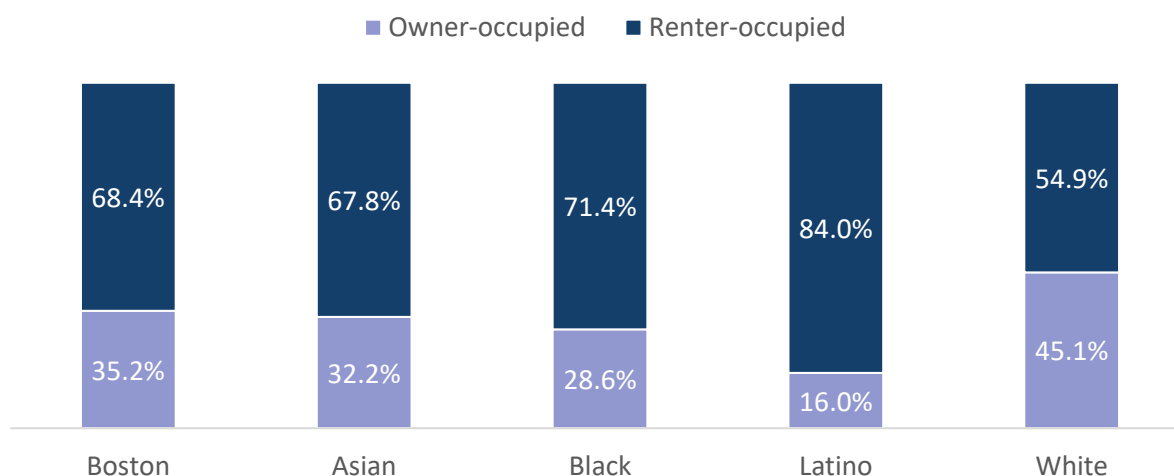
DATA SOURCE: U.S. Census, American Community Survey 1-Year Estimates, 2017

Table 45. Median Monthly Housing Costs, by Boston and Zip Code, 2013–2017

	Neighborhood	Owner with Mortgage	Owner without Mortgage	Renter
Boston	Boston	$2,293	$776	$1,445
02134	Allston/Brighton	$2,103	$689	$1,660
02135	Allston/Brighton	$2,205	$786	$1,652
02163	Allston/Brighton	NA	NA	$2,380
02108	Back Bay	$2,947	$1,500†	$2,480
02109	Back Bay	$3,953	$1,500†	$2,680
02110	Back Bay	$3,602	$1,500†	$2,211
02113	Back Bay	$2,615	$758	$1,848
02114	Back Bay	$3,157	$1,427	$2,128
02116	Back Bay	$3,615	$1,500†	$1,800
02199	Back Bay	NA	$1,500†	$2,860
02129	Charlestown	$2,803	$1,021	$1,153
02121	Dorchester	$2,076	$789	$812
02125	Dorchester	$2,106	$700	$1,273
02122	Dorchester	$2,153	$572	$1,370
02124	Dorchester	$2,250	$657	$1,314
02128	East Boston	$1,990	$577	$1,249
02115	Fenway	$2,778	$1,312	$1,563
02215	Fenway	$2,404	$1,158	$1,778
02136	Hyde Park	$2,097	$560	$1,178
02130	Jamaica Plain	$2,313	$879	$1,518

	Neighborhood	Owner with Mortgage	Owner without Mortgage	Renter
02126	Mattapan	$1,826	$608	$1,354
02131	Roslindale	$2,118	$644	$1,365
02119	Roxbury	$2,051	$683	$917
02120	Roxbury	$1,733	$638	$1,074
02127	South Boston	$2,439	$852	$1,485
02210	South Boston	$3,341	NA	$3,072
02111	South End	$3,108	$1,500†	$1,425
02118	South End	$2,975	$1,132	$1,196
02132	West Roxbury	$2,273	$600	$1,539

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: NA denotes where data are suppressed due to insufficient sample size; † indicates where the median estimate falls in the upper interval of an open-ended distribution

Table 46. Median Single–Family Home Price (in US Dollars), by Boston and Neighborhood, 2011, 2015, and 2016

	2011	2015	2016
Boston	$359,000	$475,000	$530,000
Allston	$432,212	$773,000	$745,000
Back Bay Village/South End	$3,800,000	$6,350,000	$4,285,000
Beacon Hill	$2,200,000	NA	$3,050,000
Brighton	$370,000	$582,500	$687,500
Charlestown	$635,000	$895,000	$1,200,000
Chinatown/Leather District	NA	NA	$1,225,000
Dorchester	$241,000	$400,000	$440,000
East Boston	$160,000	$331,750	$402,500
Fenway	$1,125,000	$2,112,500	NA
Hyde Park	$240,000	$359,000	$385,500
Jamaica Plain	$577,500	$820,000	$782,500
Mattapan	$200,000	$291,500	$336,500
North End/West End	$600,000	NA	NA
Roslindale	$338,000	$450,000	$500,500
Roxbury	$230,000	$307,500	$476,250
South Boston	$400,000	$577,000	$700,000
West Roxbury	$385,000	$465,000	$525,000

DATA SOURCE: Massachusetts Association of Realtors and MLS Property Information Network, as cited by Boston Magazine, https://www.bostonmagazine.com/best-places-to-live-2017-single-family-homes/, 2011, 2015, and 2016
NOTES: Neighborhoods as defined by Boston Planning and Development Agency; NA denotes where data were not available

Figure 212. Percent Boston CHNA Survey Respondents Reported Main Reasons for Most Recent Move in Past Five Years If They Have Moved (N=977), 2019

Reason	Percent
Wanted to be closer to work/school/family	19.5%
Issues related to paying rent or mortgage	16.3%
Wanted a bigger/nicer house	12.1%
Got/wanted own place	11.2%
Change in family	11.0%
Issues related to poor housing conditions	7.0%
Other	6.6%
Wanted a safer neighborhood	5.8%
Evicted/wanted to avoid an eviction	3.0%
Issues related to risk of domestic violence	2.8%
(Renters) Landlord went into foreclosure	1.4%
Landlord sold apartment/building	1.4%
Housing subsidy funding ran out/budget cuts	1.0%
(Homeowners) Went through a foreclosure	0.5%
Moved in/out of shelter	0.5%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Data arranged in descending order; Percentage calculations do not include respondents who selected "did not move" or "prefer not to answer/don't know"

Table 47. Number of Non–Permanent Housing in Boston, by Bed Type, 2018

| Housing Type | Bed Type | | | |
	Family Beds	Adult–Only Beds	Child–Only Beds	Total Year–round Beds
Emergency, Safe Haven, and Transitional Housing	3,939	2,045	4	5,988
Emergency Shelter	3,758	1,603	4	5,365
Safe Haven	NA	60	NA	60
Transitional Housing	181	382	0	563
Total	7,878	4,090	8	11,976

DATA SOURCE: U.S. Department of Housing and Urban Development, Continuums of Care, Continuum of Care Homeless Assistance Programs Housing Inventory Count Report, 2018
NOTES: HUD's point-in-time count does not include persons or beds in Permanent Supportive Housing as currently homeless; Family Beds include beds for households with one adult and at least one child under age 18; NA denotes where data were not available

Figure 213. Number of Homeless Individuals Living in Boston, by Race and Over Time, 2015–2018
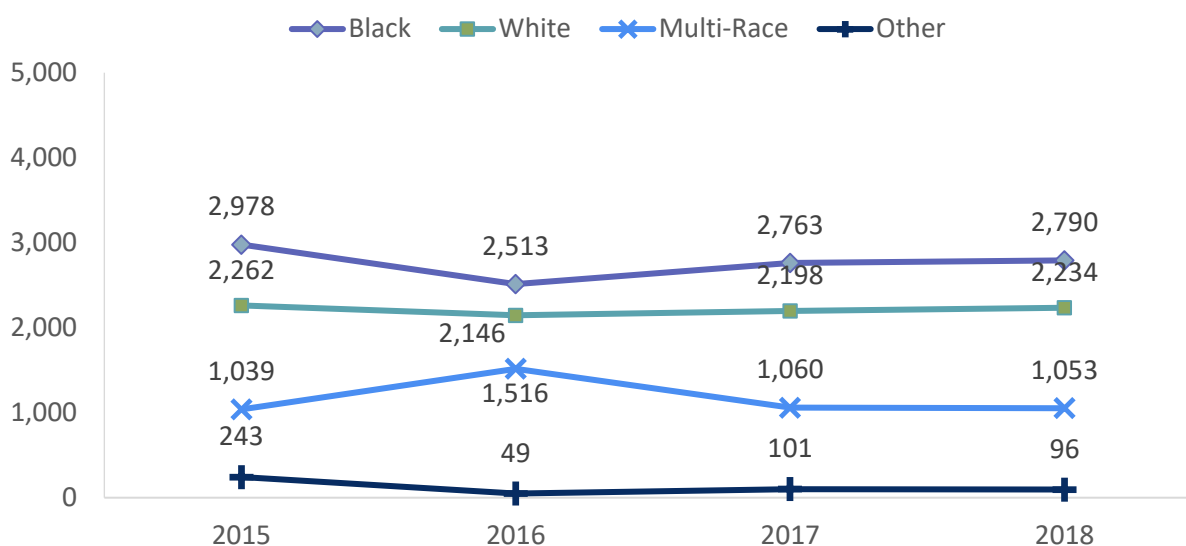
DATA SOURCE: U.S. Department of Housing and Urban Development, Continuums of Care, HUD Continuum of Care Homeless Assistance Programs Homeless Populations and Sub Populations, 2015-2018
NOTES: Data include counts of homeless individuals in emergency shelters, transitional housing, and unsheltered; Safe Haven programs are included in the Transitional Housing category; Asian, American Indian or Alaska Native, and Native Hawaiian or Other Pacific Islander categories were collapsed into the Other category due to counts of less than 100 in each category at each time point

Figure 214. Number of Homeless Individuals Living in Boston, by Ethnicity and Over Time, 2015–2018
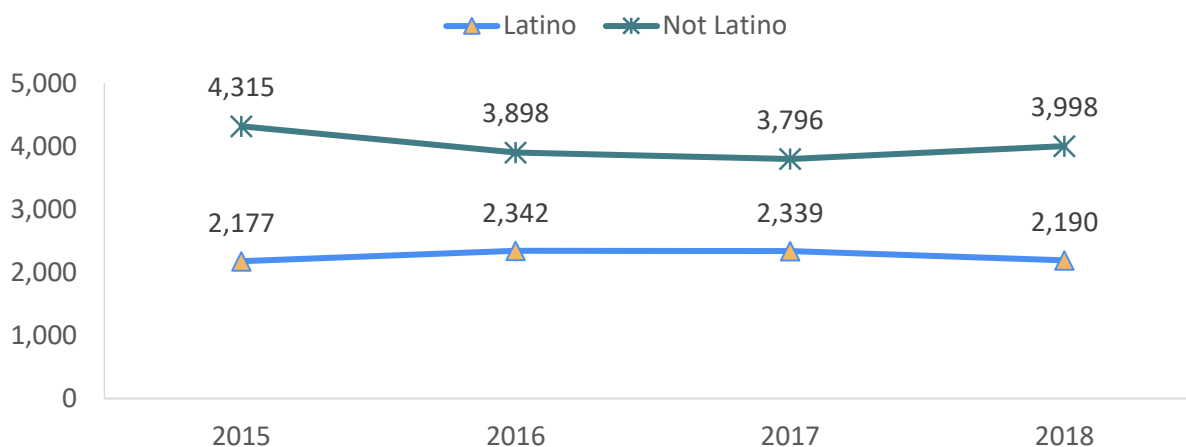
DATA SOURCE: U.S. Department of Housing and Urban Development, Continuums of Care, HUD Continuum of Care Homeless Assistance Programs Homeless Populations and Sub Populations, 2015-2018
NOTES: Data include counts of homeless individuals in emergency shelters, transitional housing, and unsheltered; Safe Haven programs are included in the Transitional Housing category

Figure 215. Percent Boston CHNA Survey Respondents Reported Having Trouble Paying Monthly Utilities, by All Respondents and Selected Indicators, 2019
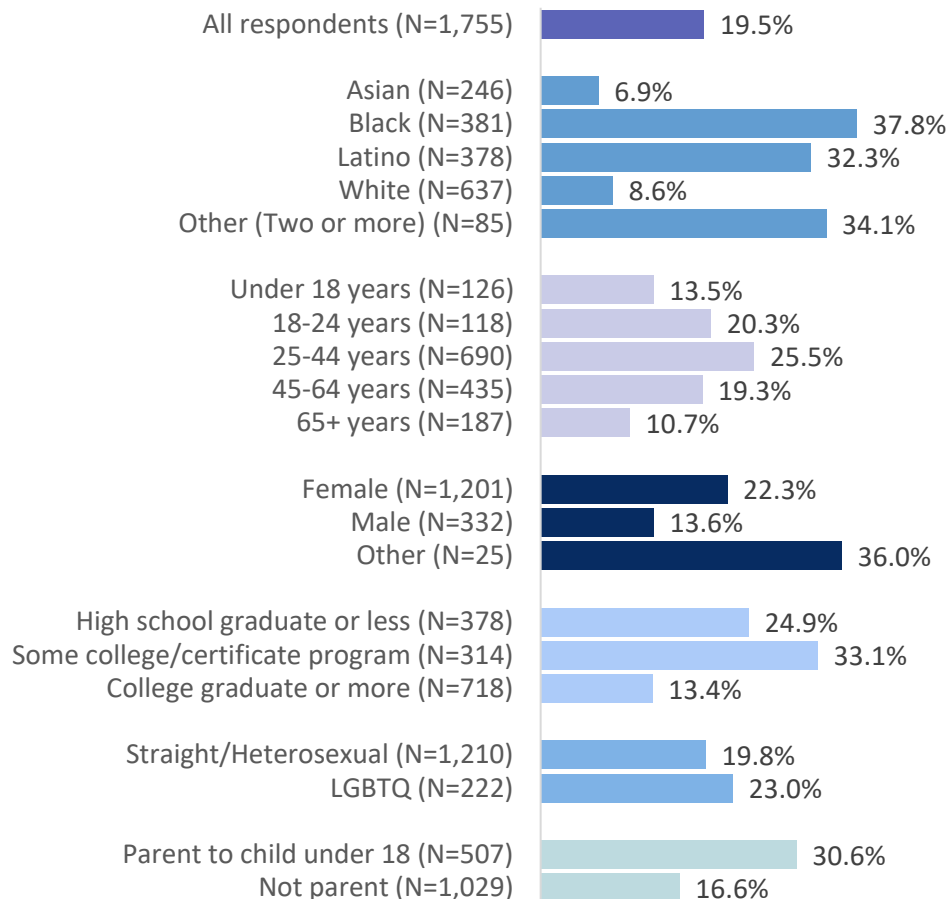
All respondents (N=1,755) — 19.5%

Asian (N=246) — 6.9%
Black (N=381) — 37.8%
Latino (N=378) — 32.3%
White (N=637) — 8.6%
Other (Two or more) (N=85) — 34.1%

Under 18 years (N=126) — 13.5%
18-24 years (N=118) — 20.3%
25-44 years (N=690) — 25.5%
45-64 years (N=435) — 19.3%
65+ years (N=187) — 10.7%

Female (N=1,201) — 22.3%
Male (N=332) — 13.6%
Other (N=25) — 36.0%

High school graduate or less (N=378) — 24.9%
Some college/certificate program (N=314) — 33.1%
College graduate or more (N=718) — 13.4%

Straight/Heterosexual (N=1,210) — 19.8%
LGBTQ (N=222) — 23.0%

Parent to child under 18 (N=507) — 30.6%
Not parent (N=1,029) — 16.6%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Chi-square analyses were conducted and there were statistically significant differences within the following groups (p < 0.05): race/ethnicity, age, gender identity, educational attainment, and parent status

Transportation

Table 48. Means of Transportation to Work for Population 16 Years and Over, by Boston and Neighborhood, 2013–2017

	Car, truck, van – alone	Car, truck, van – carpool	Public transportation	Walked	Other
Boston	39.0%	5.8%	33.6%	14.6%	6.9%
Allston/Brighton	41.7%*	4.8%	35.0%	8.1%*	10.5%*
Back Bay	20.9%*	1.9%*	22.7%*	45.7%*	8.8%*
Charlestown	46.1%*	4.1%*	27.0%*	13.5%	9.3%*
Dorchester (02121, 02125)	44.5%*	8.0%*	38.2%*	5.5%*	3.8%*
Dorchester (02122, 02124)	47.4%*	7.7%*	36.5%*	4.2%*	4.2%*

	Car, truck, van – alone	Car, truck, van – carpool	Public transportation	Walked	Other
East Boston	26.5%*	7.7%*	57.7%*	5.0%*	3.1%*
Fenway	14.4%*	2.2%*	28.0%*	46.5%*	8.9%*
Hyde Park	63.3%*	8.3%*	23.0%*	2.2%*	3.2%*
Jamaica Plain	36.6%	4.3%*	42.5%*	5.0%*	11.6%*
Mattapan	51.2%*	11.7%*	31.9%	NA	3.3%*
Roslindale	57.8%*	7.0%	27.6%*	1.3%*	6.2%
Roxbury	32.6%*	5.2%	40.3%*	16.8%*	5.1%*
South Boston	40.3%	5.2%	36.3%	11.3%*	6.9%
South End	24.1%*	4.8%	28.0%*	31.1%*	12.0%*
West Roxbury	68.2%*	7.6%	17.1%*	1.5%*	5.5%

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, 2013-2017
NOTE: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; NA denotes where data are suppressed due to insufficient sample size; Asterisk (*) denotes neighborhood estimate was significantly different compared to the Boston estimate within specific mode of transportation category (p < 0.05)

Table 49. Average Annual Premium Car Insurance Rate, by Zip Code

Zip Code	Neighborhood	Annual Rate
02134	Allston/Brighton	$1,396
02135	Allston/Brighton	$1,396
02163	Allston/Brighton	$1,396
02108	Back Bay	$1,385
02109	Back Bay	$1,385
02110	Back Bay	$1,385
02113	Back Bay	$1,385
02114	Back Bay	$1,385
02116	Back Bay	$1,385
02199	Back Bay	$1,385
02129	Charlestown	$1,590
02121	Dorchester	$2,074
02125	Dorchester	$2,026
02122	Dorchester	$2,026
02124	Dorchester	$2,026
02128	East Boston	$1,658
02115	Fenway	$1,385

Zip Code	Neighborhood	Annual Rate
02215	Fenway	$1,316
02136	Hyde Park	$1,733
02130	Jamaica Plain	$1,489
02126	Mattapan	$2,026
02131	Roslindale	$1,627
02119	Roxbury	$2,074
02120	Roxbury	$2,074
02127	South Boston	$1,473
02210	South Boston	$1,385
02111	South End	$1,385
02118	South End	$1,385
02132	West Roxbury	$1,336

DATA SOURCE: Carinsurance.com
NOTES: CarInsurance.com commissioned Quadrant Information Services to provide a report of average auto insurance rates for a 2016 Honda Accord for nearly every ZIP code in the United States. We calculated rates using data for up to six large carriers (Allstate, Farmers, GEICO, Nationwide, Progressive and State Farm); Averages for the default result are based on insurance for a married 40-year-old male who commutes 12 miles to work each day, with policy limits of 100/300/100 ($100,000 for injury liability for one person, $300,000 for all injuries and $100,000 for property damage in an accident) and a $500 deductible on collision and comprehensive coverage. The rate includes uninsured motorist coverage. Averages for customized rates are based on drivers ages 20, 30, 40, 50, 60 and 70 for the following coverage levels: state minimum liability, liability of 50/100/50 and 100/300/100 with $500 deductible on comprehensive and collision. These hypothetical drivers have clean records and good credit. Average rates are for comparative purposes.

Table 50. Percent Boston CHNA Survey Respondents Reported Transportation Barriers to Getting to Medical Appointments, Meetings, Work, or Getting Things Needed for Daily Living, By Selected Neighborhoods, 2019

Allston/ Brighton (N=202)	Chinatown (N=64)	Dorchester (N=460)	East Boston (N=174)	Hyde Park (N=84)	Jamaica Plain (N=76)	Mattapan (N=81)	Roslindale (N=127)	Roxbury (N=150)	South End (N=99)
Availability of public transportation									
26.7%	10.9%	20.4%	25.9%	19.1%	15.3%	16.1%	20.5%	20.7%	14.1%
Cost of transportation									
15.4%	6.3%	16.1%	25.3%	15.5%	11.9%	19.8%	16.5%	18.7%	10.1%
Clear and understandable transportation signs and directions									
8.9%	9.4%	3.5%	5.2%	3.6%	3.4%	4.9%	1.6%	4.0%	2.0%
Limited street parking, traffic-related noise, or traffic									
26.2%	10.9%	24.8%	28.2%	20.2%	22.7%	14.8%	26.8%	20.0%	23.2%
Limited opportunities for safe bicycle riding									
12.9%	1.6%	6.7%	7.5%	6.0%	14.8%	8.6%	8.7%	7.3%	9.1%
None of the above									
48.5%	76.6%	53.0%	43.1%	58.3%	56.3%	58.0%	56.7%	55.3%	63.6%

DATA SOURCE: Boston CHNA Community Survey, 2019

Figure 216. Percent of Household Income Spent on Transportation, by Boston Metropolitan Statistical Area, FY2001–2014
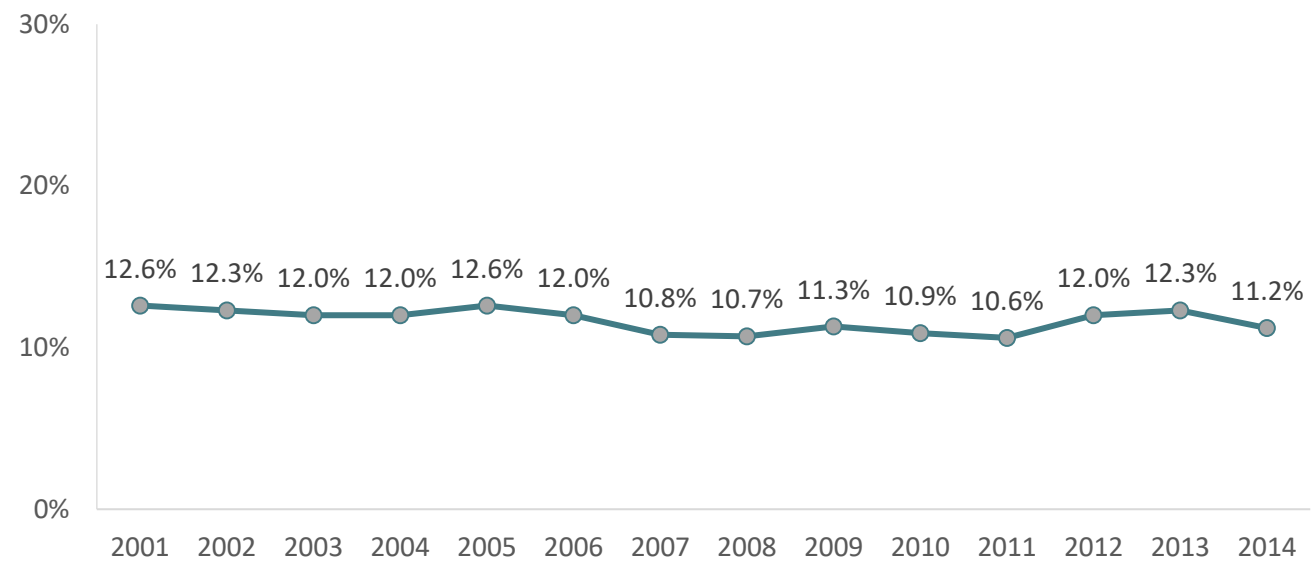
DATA SOURCE: Bureau of Labor Statistics, Consumer Expenditure Survey, as cited by Metropolitan Area Planning Council, Regional Indicators, http://www.regionalindicators.org/topic_areas/2#household-transportation-cost-burden, FY2001-FY2014
NOTES: Modes of transportation include vehicles and public transit

Social Environment

Table 51. Boston CHNA Survey Respondents' Reported Perceptions of Community Cohesion in Their Neighborhood, by Selected Neighborhoods, 2019

	Allston/ Brighton	Chinatown	Dorchester	East Boston	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South End
My neighbors and I want the same thing for our neighborhood.	N=141	N=58	N=354	N=136	N=68	N=151	N=68	N=114	N=108	N=88
Strongly agree/agree	72.3%	72.4%	74.6%	72.8%	86.8%	79.5%	73.5%	79.0%	79.6%	79.6%
Strongly disagree/disagree	27.7%	27.6%	25.4%	27.2%	13.2%	20.5%	26.5%	21.1%	20.4%	20.5%
I expect to live in my neighborhood for a long time.	N=192	N=62	N=407	N=150	N=78	N=155	N=75	N=124	N=130	N=100
Strongly agree/agree	67.7%	83.9%	66.6%	83.3%	76.9%	72.3%	69.3%	70.2%	69.2%	79.0%
Strongly disagree/disagree	32.3%	16.1%	33.4%	16.7%	23.1%	27.7%	30.7%	29.8%	30.8%	21.0%
People in my neighborhood help each other out.	N=180	N=66	N=415	N=146	N=74	N=168	N=79	N=124	N=132	N=90
Strongly agree/agree	59.4%	72.7%	64.8%	55.5%	75.7%	79.2%	68.4%	75.0%	62.1%	70.0%
Strongly disagree/disagree	40.6%	27.3%	35.2%	44.5%	24.3%	20.8%	31.7%	25.0%	37.9%	30.0%
I can recognize most of the people who live in my neighborhood.	N=192	N=66	N=451	N=165	N=84	N=177	N=84	N=127	N=146	N=97
Strongly agree/agree	50.0%	43.9%	60.1%	53.3%	64.3%	46.9%	66.7%	55.1%	56.2%	53.6%
Strongly disagree/disagree	50.0%	56.1%	39.9%	46.7%	35.7%	53.1%	33.3%	44.9%	43.8%	46.4%
I have a lot of influence over what my neighborhood is like.	N=164	N=61	N=384	N=124	N=67	N=151	N=68	N=115	N=127	N=91
Strongly agree/agree	24.4%	26.2%	38.3%	43.6%	41.8%	29.8%	44.1%	30.4%	37.8%	35.2%
Strongly disagree/disagree	75.6%	73.8%	61.7%	56.5%	58.2%	70.2%	55.9%	69.6%	62.2%	64.8%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "not applicable/don't know"

Table 52. Boston CHNA Survey Respondents' Reported Perceptions of Discrimination, 2019

	Almost every day	At least once a week	A few times a month	A few times a year	Less than once a year	Never
You are treated with less courtesy than other people are (N=1,809)	4.9%	8.8%	12.7%	22.4%	16.3%	34.8%
People act as if they're better than you are (N=1,803)	6.9%	6.5%	12.1%	22.7%	16.0%	35.7%
You are treated with less respect than other people are (N=1,806)	4.2%	8.2%	12.3%	22.2%	17.2%	35.9%
You receive poorer service than other people at restaurants or stores (N=1,789)	2.8%	3.6%	6.3%	16.1%	22.4%	48.7%
You are called names or insulted (N=1,795)	2.3%	2.5%	4.5%	14.8%	19.6%	56.3%
You are threatened or harassed (N=1,801)	1.0%	2.0%	3.4%	12.4%	16.4%	64.7%
People act as if they are afraid of you (N=1,799)	2.4%	2.9%	3.7%	9.0%	12.5%	69.6%
You receive poorer service than others when receiving medical care (N=1,786)	1.4%	1.8%	2.9%	7.3%	15.0%	71.7%

DATA SOURCE: Boston CHNA Community Survey, 2019

Table 53. Percent Boston CHNA Survey Respondents Reporting Their Own Perceived Reasons for Their Experiences of Discrimination If They Reported Experiencing Discrimination a Few Times a Year or More, by Race/Ethnicity, 2019

	White (N=302)	Black (N=214)	Latino (N=194)	Asian (N=91)	Other/Two or more (N=57)	p-value
Ancestry or national origins	8.0%	24.3%	41.8%	51.7%	45.6%	<0.001*
Gender	64.6%	46.3%	42.3%	46.2%	47.4%	<0.001*
Race	12.6%	77.6%	53.1%	72.5%	66.7%	<0.001*
Age	41.7%	25.2%	39.7%	42.9%	33.3%	0.001*
Religion	5.0%	6.1%	9.3%	11.0%	5.3%	0.177
Height	7.0%	9.8%	19.1%	17.6%	10.5%	<0.001*
Weight	17.2%	17.3%	19.1%	14.3%	21.1%	0.828
Some other aspect of physical appearance	26.2%	16.4%	18.6%	24.2%	24.6%	0.065
Sexual orientation	21.2%	6.1%	8.3%	6.6%	10.5%	<0.001*
Education or income level	15.2%	20.6%	26.3%	13.2%	33.3%	0.001*
A physical disability	4.6%	4.2%	5.7%	5.5%	5.3%	0.963

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%; Percentage calculations include respondents who selected "almost every day," "at least once a week," "a few times a month," and "a few times a year" to the previous question on experiences of discrimination; Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 54. Percent Boston CHNA Survey Respondents Reporting Their Own Perceived Reasons for Their Experiences of Discrimination If They Reported Experiencing Discrimination a Few Times a Year or More, by Age, 2019

	Under 18 years (N=92)	18-24 years (N=73)	25-44 years (N=421)	45-64 years (N=201)	65+ years (N=59)	p-value
Ancestry or national origins	28.3%	26.0%	29.5%	24.9%	13.6%	0.122
Gender	47.8%	61.6%	57.7%	42.8%	32.2%	<0.001*
Race	58.7%	52.1%	47.7%	47.3%	33.9%	0.051
Age	52.2%	35.6%	32.5%	30.4%	62.7%	<0.001*
Religion	12.0%	6.9%	5.9%	5.5%	8.5%	0.266
Height	25.0%	19.2%	9.0%	9.0%	8.5%	<0.001*
Weight	25.0%	21.9%	16.9%	16.4%	10.2%	0.136
Some other aspect of physical appearance	32.6%	30.1%	23.0%	14.9%	10.2%	0.001*
Sexual orientation	7.6%	13.7%	13.5%	12.4%	10.2%	0.587
Education or income level	22.8%	19.2%	20.9%	18.4%	15.3%	0.763
A physical disability	5.4%	1.4%	3.6%	6.0%	8.5%	0.207

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%; Percentage calculations include respondents who selected "almost every day," "at least once a week," "a few times a month," and "a few times a year" to the previous question on experiences of discrimination; Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 55. Percent Boston CHNA Survey Respondents Reporting Their Own Perceived Reasons for Their Experiences of Discrimination If They Reported Experiencing Discrimination a Few Times a Year or More, by Gender Identity, 2019

	Male (N=155)	Female (N=660)	Non-binary/ transgender (N=24)	p-value
Ancestry or national origins	31.6%	25.9%	33.3%	0.281
Gender	20.7%	58.3%	58.3%	<0.001*
Race	48.4%	48.8%	41.7%	0.790
Age	36.8%	36.7%	25.0%	0.502
Religion	8.4%	6.7%	8.3%	0.729
Height	13.6%	11.2%	12.5%	0.712
Weight	14.2%	18.2%	20.8%	0.456
Some other aspect of physical appearance	25.2%	20.9%	29.2%	0.353
Sexual orientation	25.8%	7.6%	62.5%	<0.001*
Education or income level	17.4%	20.9%	12.5%	0.401
A physical disability	4.5%	4.4%	12.5%	0.179

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%; Percentage calculations include respondents who selected "almost every day," "at least once a week," "a few times a month," and "a few times a year" to the previous question on experiences of discrimination; Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 56. Percent Boston CHNA Survey Respondents Reporting Their Own Perceived Reasons for Their Experiences of Discrimination If They Reported Experiencing Discrimination a Few Times a Year or More, by Sexual Orientation, 2019

	Heterosexual/ non-transgender (N=654)	LGBTQ (N=168)	p-value
Ancestry or national origins	26.7%	26.4%	0.946
Gender	51.9%	54.6%	0.531
Race	53.0%	31.9%	<0.001*
Age	37.7%	31.3%	0.129
Religion	6.6%	4.9%	0.432
Height	12.0%	9.8%	0.430
Weight	16.7%	19.6%	0.377
Some other aspect of physical appearance	21.4%	23.9%	0.479
Sexual orientation	2.4%	54.0%	<0.001*
Education or income level	22.6%	11.7%	0.002*
A physical disability	4.5%	4.3%	0.912

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%; Percentage calculations include respondents who selected "almost every day," "at least once a week," "a few times a month," and "a few times a year" to the previous question on experiences of discrimination; Percentage calculations do not include respondents who selected "prefer not to answer/don't know;" Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 57. Number of Hospitals, by Boston and Neighborhood, 2019

	Number
Boston	22
Allston/Brighton	2
Back Bay	4
Charlestown	0
Dorchester (02121, 02125)	0
Dorchester (02122, 02124)	1
East Boston	0
Fenway	4
Hyde Park	0
Jamaica Plain	4
Mattapan	0
North End	0
Roslindale	1
Roxbury	1
South Boston	0
South End	4
West Roxbury	1

DATA SOURCE: American Hospital Directory, https://www.ahd.com, 2019
NOTES: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

Table 58. Number of Community Health Centers, by Boston and Neighborhood, 2019

	Number
Boston	33
Allston/Brighton	1
Back Bay	3
Charlestown	2
Dorchester (02121, 00125)	6
Dorchester (02122, 00124)	4
East Boston	2
Fenway	1
Hyde Park	0
Jamaica Plain	2
Mattapan	1
North End	0
Roslindale	1
Roxbury	3
South Boston	3
South End	4
West Roxbury	0

DATA SOURCE: Massachusetts League of Community Health Centers, http://www.massleague.org/, 2019
NOTES: Neighborhoods as defined by Boston Public Health Commission; Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown

Community Perceptions of Health

Table 59. Percent Boston CHNA Survey Respondents Reporting The Five Most Important Factors That Define a "Healthy Community," by Selected Neighborhoods, 2019

	Allston/ Brighton (N=206)	Chinatown (N=67)	Dorchester (N=463)	East Boston (N=175)	Hyde Park (N=85)	Jamaica Plain (N=179)	Mattapan (N=90)	Roslindale (N=131)	Roxbury (N=148)	South End (N=104)
Access to health care	62.6%	82.1%	63.9%	73.1%	52.9%	58.1%	62.2%	55.0%	71.6%	67.3%
Access to healthy food	46.1%	16.4%	51.4%	54.9%	52.9%	57.0%	55.6%	49.6%	54.7%	52.9%
Access to public transportation	56.8%	53.7%	44.9%	58.3%	47.1%	54.8%	48.9%	55.0%	53.4%	47.1%
Access to good jobs	23.3%	28.4%	40.0%	36.6%	30.6%	33.0%	44.4%	33.6%	46.0%	38.5%
Affordable housing	65.1%	71.6%	64.4%	58.3%	61.2%	72.6%	60.0%	62.6%	75.0%	65.4%
Access to good education	31.1%	50.8%	50.1%	52.6%	48.2%	50.3%	33.3%	45.8%	50.7%	35.6%
Arts and cultural events	17.0%	13.4%	12.5%	15.4%	11.8%	7.8%	7.8%	13.7%	12.8%	13.5%
Clean environment	28.6%	43.3%	32.2%	36.0%	41.2%	24.6%	31.1%	34.4%	23.0%	36.5%
Effective city services	31.1%	11.9%	30.5%	32.6%	38.8%	25.7%	26.7%	37.4%	21.6%	37.5%
Good roads/ infrastructure	8.7%	3.0%	11.2%	15.4%	21.2%	7.3%	12.2%	8.4%	10.1%	12.5%
Good sidewalks and trails	10.7%	20.9%	9.3%	10.3%	12.9%	8.4%	15.6%	8.4%	9.5%	17.3%
Healthy behaviors and lifestyles	22.8%	7.5%	22.7%	18.9%	21.2%	16.8%	20.0%	21.4%	25.0%	27.9%
Low death and disease rates	7.3%	1.5%	12.1%	6.9%	10.6%	8.9%	11.1%	8.4%	5.4%	10.6%

	Allston/ Brighton (N=206)	Chinatown (N=67)	Dorchester (N=463)	East Boston (N=175)	Hyde Park (N=85)	Jamaica Plain (N=179)	Mattapan (N=90)	Roslindale (N=131)	Roxbury (N=148)	South End (N=104)
Low crime and low violence/safe neighborhoods	42.2%	49.3%	43.0%	36.6%	56.5%	43.6%	37.8%	43.5%	43.9%	44.2%
Low infant deaths	3.4%	0.0%	7.8%	9.1%	9.4%	5.6%	5.6%	3.8%	5.4%	5.8%
Low level of child abuse	7.3%	0.0%	10.8%	9.1%	10.6%	8.9%	7.8%	6.1%	5.4%	8.7%
Parks and recreation	18.9%	32.8%	15.8%	24.6%	18.8%	17.9%	22.2%	23.7%	15.5%	18.3%
Respect and inclusion for diverse members of the community	27.7%	9.0%	21.8%	21.1%	30.6%	33.5%	16.7%	30.5%	15.5%	26.9%
Strong community leadership	13.1%	3.0%	14.9%	10.9%	24.7%	5.0%	12.2%	6.9%	14.9%	11.5%
Strong sense of community	20.9%	7.5%	20.7%	18.3%	23.5%	19.6%	14.4%	13.7%	18.2%	17.3%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTES: Percentage calculations do not include respondents who selected "none of the above"

Table 60. Percent Boston CHNA Survey Respondents Reporting Topmost Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Selected Neighborhoods, 2019

	Allston/ Brighton (N=206)	Chinatown (N=68)	Dorchester (N=470)	East Boston (N=174)	Hyde Park (N=85)	Jamaica Plain (N=177)	Mattapan (N=91)	Roslindale (N=125)	Roxbury (N=154)	South End (N=103)
Heart disease and stroke	17.5%	54.4%	17.5%	11.5%	15.3%	9.6%	22.0%	12.0%	16.9%	18.5%
Cancer	15.1%	45.6%	18.7%	26.4%	12.9%	7.9%	23.1%	21.6%	13.0%	23.3%
Asthma	6.8%	26.5%	17.9%	30.5%	16.5%	10.7%	19.8%	16.8%	18.2%	11.7%
Diabetes	16.0%	35.3%	27.7%	33.3%	21.2%	12.4%	39.6%	14.4%	30.5%	16.5%
Obesity	15.1%	2.9%	26.2%	41.4%	23.5%	20.9%	40.7%	25.6%	25.3%	26.2%
Hunger/food insecurity	15.1%	1.5%	19.2%	18.4%	22.4%	24.3%	20.9%	30.4%	22.1%	9.7%
Elder/aging health issues	26.7%	30.9%	14.3%	13.2%	31.8%	17.5%	18.7%	23.2%	18.8%	24.3%
Infant and child health	2.9%	10.3%	4.9%	7.5%	8.2%	4.0%	2.2%	3.2%	5.8%	0.0%
Mental health	43.2%	17.7%	38.3%	36.2%	43.5%	51.4%	37.4%	44.0%	50.7%	40.8%
Alcohol/drug abuse/ addiction/overdose	37.4%	26.5%	5.4%	59.2%	41.2%	45.8%	38.5%	36.8%	61.7%	56.3%
Smoking	27.2%	55.9%	22.6%	24.7%	16.5%	7.9%	19.8%	16.0%	23.4%	26.2%
Vaping	9.7%	4.4%	6.2%	16.7%	8.2%	5.7%	5.5%	7.2%	4.6%	4.9%
Sexually transmitted infections	7.8%	1.5%	10.2%	8.1%	5.9%	2.8%	9.9%	1.6%	9.1%	2.9%
Teenage pregnancy	1.0%	0.0%	6.0%	8.6%	5.9%	4.5%	6.6%	2.4%	5.8%	2.9%
Environment	31.1%	41.2%	18.5%	28.2%	22.4%	33.9%	18.7%	36.8%	22.7%	27.2%
Community violence	8.3%	1.5%	48.1%	28.2%	27.1%	43.5%	52.8%	20.8%	48.1%	30.1%
Domestic violence	6.3%	1.5%	13.4%	10.3%	9.4%	6.2%	20.9%	6.4%	9.7%	6.8%

	Allston/ Brighton (N=206)	Chinatown (N=68)	Dorchester (N=470)	East Boston (N=174)	Hyde Park (N=85)	Jamaica Plain (N=177)	Mattapan (N=91)	Roslindale (N=125)	Roxbury (N=154)	South End (N=103)
Child abuse and neglect	1.9%	1.5%	6.0%	4.0%	7.1%	2.8%	6.6%	2.4%	2.0%	3.9%
Rape/sexual assault	7.3%	1.5%	7.0%	6.9%	5.9%	2.8%	5.5%	2.4%	5.2%	2.9%
Homelessness	15.1%	22.1%	27.7%	21.3%	18.8%	24.9%	24.2%	10.4%	33.8%	40.8%
Housing quality or affordability	56.8%	35.3%	42.6%	46.0%	57.7%	69.5%	38.5%	59.2%	52.6%	45.6%
Poverty	20.9%	10.3%	26.4%	21.3%	20.0%	35.0%	24.2%	21.6%	24.0%	16.5%
Employment/job opportunities	28.2%	8.8%	23.0%	13.2%	25.9%	26.0%	23.1%	32.0%	23.4%	18.5%
Access to health care or other services	14.6%	2.9%	8.5%	12.6%	16.5%	9.6%	17.6%	16.8%	8.4%	14.6%

DATA SOURCE: Boston CHNA Community Survey, 2019

Table 61. Percent Boston CHNA Survey Respondents Reporting Top Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Race/Ethnicity, 2019

	Asian (N=310)	Black (N=457)	Latino (N=468)	White (N=678)	Other/ Two or more (N=94)	p-value
Heart disease and stroke	27.1%	20.4%	14.1%	13.6%	19.2%	<0.001*
Cancer	25.2%	19.0%	21.8%	15.9%	24.5%	0.006*
Asthma	13.6%	20.6%	22.0%	9.1%	16.0%	<0.001*
Diabetes	21.0%	35.2%	31.8%	9.4%	21.3%	<0.001*
Obesity	10.3%	29.5%	36.5%	18.6%	25.5%	<0.001*
Hunger/food insecurity	12.6%	21.0%	18.4%	21.5%	20.2%	0.049*
Elder/aging health issues	32.3%	19.9%	10.9%	26.7%	19.2%	<0.001*
Infant and child health	5.8%	4.8%	5.8%	3.0%	2.1%	0.084
Mental health	31.3%	43.1%	37.2%	48.8%	48.9%	<0.001*
Alcohol/drug abuse	35.8%	47.7%	52.8%	53.5%	52.1%	<0.001*
Smoking	36.5%	22.5%	27.1%	16.2%	14.9%	<0.001*
Vaping	8.4%	4.6%	11.5%	8.4%	6.4%	0.004*
Sexually transmitted infections	6.8%	9.4%	8.8%	4.4%	6.4%	0.010*
Teenage pregnancy	3.6%	6.8%	8.3%	1.3%	3.2%	<0.001*
Environment	31.9%	16.9%	19.7%	39.4%	22.3%	<0.001*
Community violence	21.3%	41.8%	36.3%	23.9%	38.3%	<0.001*
Domestic violence	7.4%	11.6%	12.4%	4.6%	12.8%	<0.001*
Child abuse and neglect	3.2%	4.6%	6.0%	1.9%	6.4%	0.005*
Rape/sexual assault	6.5%	4.8%	7.7%	4.0%	8.5%	0.047*
Homelessness	21.0%	31.7%	24.6%	20.2%	27.7%	0.0002*
Housing quality or affordability	36.1%	45.5%	46.8%	62.5%	54.3%	<0.001*
Poverty	17.4%	20.6%	24.4%	26.4%	24.5%	0.018*
Employment/job opportunities	17.4%	25.2%	22.2%	21.7%	27.7%	0.086
Access to health care or other services	11.6%	11.4%	9.8%	13.0%	8.5%	0.465
Other	6.3%	3.5%	4.1%	3.9%	3.2%	--

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 62. Percent Boston CHNA Survey Respondents Reporting Top Five Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Gender Identity, 2019

	Male (N=398)	Female (N=1,314)	Non-binary/ transgender (N=29)	p-value
Heart disease and stroke	23.1%	16.2%	3.5%	0.001*
Cancer	23.1%	19.3%	6.9%	0.05
Asthma	10.8%	15.5%	20.7%	0.041*
Diabetes	20.6%	23.3%	6.9%	0.069
Obesity	20.1%	24.2%	34.5%	0.088
Hunger/food insecurity	14.1%	20.3%	44.8%	<0.001*
Elder/aging health issues	21.6%	23.3%	10.3%	0.217
Infant and child health	3.5%	4.7%	0.0%	0.301
Mental health	39.2%	41.9%	69.0%	0.007*
Alcohol/drug abuse/ addiction/overdose	47.0%	49.5%	41.4%	0.483
Smoking	28.9%	20.8%	10.3%	0.001*
Vaping	9.8%	6.7%	20.7%	0.004*
Sexually transmitted infections	6.8%	5.9%	13.8%	0.186
Teenage pregnancy	4.3%	4.0%	0.0%	0.523
Environment	31.2%	27.9%	24.1%	0.398
Community violence	29.2%	32.0%	24.1%	0.404
Domestic violence	6.3%	9.1%	13.8%	0.130
Child abuse and neglect	3.5%	4.0%	0.0%	0.497
Rape/sexual assault	4.3%	5.3%	6.9%	0.639
Homelessness	22.4%	24.2%	10.3%	0.18
Housing quality or affordability	42.7%	53.7%	58.6%	0.0004*
Poverty	26.4%	22.6%	20.7%	0.279
Employment/job opportunities	23.6%	23.0%	10.3%	0.258
Access to health care or other services	13.3%	11.1%	24.1%	0.058

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 63. Percent Boston CHNA Survey Respondents Reporting Top Five Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Age, 2019

	Under 18 years (N=197)	18-24 years (N=143)	25-44 years (N=725)	45-64 years (N=470)	65+ years (N=207)	p-value
Heart disease and stroke	10.2%	16.8%	11.9%	22.3%	34.8%	<0.001*
Cancer	21.8%	15.4%	13.5%	28.1%	27.5%	<0.001*
Asthma	15.7%	11.2%	12.7%	16.8%	18.4%	0.01*
Diabetes	18.3%	25.2%	19.5%	24.5%	30.4%	0.005*
Obesity	13.7%	28.0%	26.8%	26.4%	14.5%	<0.001*
Hunger/food insecurity	14.2%	30.1%	20.7%	19.8%	11.6%	0.0001*
Elder/aging health issues	14.2%	10.5%	13.8%	31.1%	49.8%	<0.001*
Infant and child health	2.0%	3.5%	5.2%	4.3%	3.4%	0.317
Mental health	38.6%	42.0%	46.9%	40.9%	28.5%	<0.001*
Alcohol/drug abuse	44.7%	55.9%	52.8%	48.5%	36.7%	0.0003*
Smoking	42.1%	25.2%	21.5%	17.5%	18.4%	<0.001*
Vaping	25.4%	9.8%	5.1%	5.7%	2.9%	<0.001*
Sexually transmitted infections	4.6%	14.0%	6.1%	5.3%	4.8%	0.002*
Teenage pregnancy	5.6%	8.4%	3.0%	3.8%	2.4%	0.019*
Environment	23.4%	22.4%	27.2%	31.3%	37.7%	0.003*
Community violence	30.0%	25.9%	37.4%	28.7%	20.3%	<0.001*
Domestic violence	5.1%	10.5%	10.1%	7.9%	5.8%	0.084
Child abuse and neglect	3.1%	3.5%	4.0%	4.5%	1.5%	0.382
Rape/sexual assault	7.1%	9.8%	5.4%	3.8%	2.9%	0.021*
Homelessness	23.4%	29.4%	25.4%	22.6%	15.5%	0.019*
Housing quality or affordability	37.1%	46.9%	57.7%	53.2%	39.6%	<0.001*
Poverty	31.0%	29.4%	27.7%	16.4%	13.0%	<0.001*
Employment/job opportunities	31.5%	18.2%	24.4%	22.3%	14.5%	0.001*
Access to health care or other services	12.7%	11.2%	10.6%	12.1%	15.9%	0.337
Other	3.6%	2.8%	4.0%	6.0%	6.8%	--

DATA SOURCE: Boston CHNA Community Survey, 2019

NOTE: Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 64. Percent Boston CHNA Survey Respondents Reporting Top Five Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Sexual Orientation, 2019

	Heterosexual/ non-transgender (N=1,348)	LGBTQ (N=238)	p-value
Heart disease and stroke	18.6%	9.7%	0.001*
Cancer	21.1%	12.2%	0.002*
Asthma	15.8%	9.2%	0.009*
Diabetes	23.5%	13.5%	0.001*
Obesity	24.4%	21.0%	0.311
Hunger/food insecurity	19.1%	26.1%	0.013*
Elder/aging health issues	22.7%	17.7%	0.083
Infant and child health	4.1%	5.5%	0.332
Mental health	40.6%	54.6%	<0.001*
Alcohol/drug abuse	48.2%	55.0%	0.052
Smoking	24.2%	13.0%	0.0001*
Vaping	7.8%	8.8%	0.587
Sexually transmitted infections	5.6%	8.8%	0.059
Teenage pregnancy	4.2%	3.4%	0.567
Environment	27.8%	35.3%	0.019*
Community violence	32.3%	29.4%	0.383
Domestic violence	7.6%	9.7%	0.268
Child abuse and neglect	3.5%	2.5%	0.445
Rape/sexual assault	4.8%	6.7%	0.199
Homelessness	24.6%	20.6%	0.186
Housing quality or affordability	50.8%	63.5%	0.0003*
Poverty	23.4%	28.2%	0.112
Employment/job opportunities	23.5%	22.3%	0.675
Access to health care or other services	11.1%	16.8%	0.013*
Other	4.7%	6.3%	--

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Table 65. Percent Boston CHNA Survey Respondents Reporting Top Five Most Important Concerns in Their Community or Neighborhood That Affect Their Community's Health, by Parent Status, 2019

	Parent of child under 18 (N=544)	Not parent of child under 18 (N=1,211)	p-value
Heart disease and stroke	16.4%	17.6%	0.528
Cancer	20.4%	19.7%	0.715
Asthma	19.5%	12.6%	<0.001*
Diabetes	25.4%	21.1%	0.050
Obesity	30.2%	20.9%	<0.001*
Hunger/food insecurity	22.4%	18.2%	0.046*
Elder/aging health issues	17.5%	24.3%	0.002*
Infant and child health	6.8%	3.0%	<0.001*
Mental health	40.6%	42.6%	0.436
Alcohol/drug abuse	50.7%	48.4%	0.363
Smoking	24.1%	21.1%	0.169
Vaping	6.3%	8.6%	0.092
Sexually transmitted infections	6.3%	6.2%	0.964
Teenage pregnancy	4.4%	3.8%	0.544
Environment	23.2%	31.5%	<0.001*
Community violence	40.3%	27.7%	<0.001*
Domestic violence	10.7%	7.8%	0.046*
Child abuse and neglect	5.5%	3.1%	0.017*
Rape/sexual assault	4.6%	5.5%	0.415
Homelessness	25.0%	23.1%	0.392
Housing quality or affordability	53.1%	50.7%	0.348
Poverty	20.4%	24.6%	0.054*
Employment/job opportunities	23.9%	22.6%	0.559
Access to health care or other services	9.9%	13.1%	0.064
Other	3.1%	5.3%	--

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Asterisk (*) denotes statistically significant difference in distribution across groups (p < 0.05)

Overall Morbidity and Mortality

Figure 217. Premature Mortality Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2014–2016 Combined
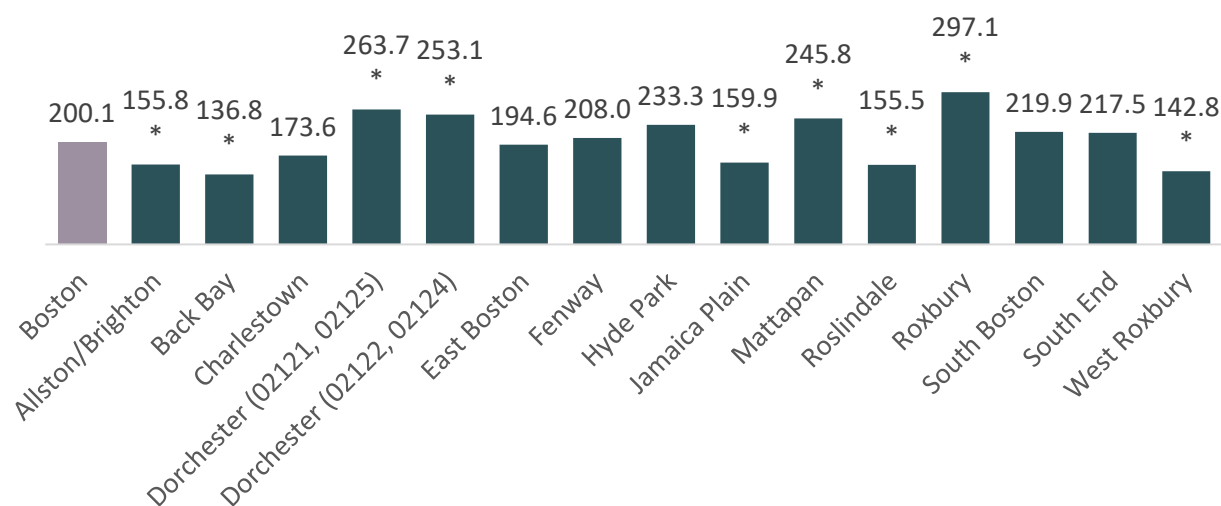
DATA SOURCE: Boston Public Health Commission, Boston resident deaths, 2014-2016 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Obesity, Nutrition, and Physical Activity

Figure 218. Percent Adults Reporting Obesity or Overweight, by Boston and Over Time, 2010–2017
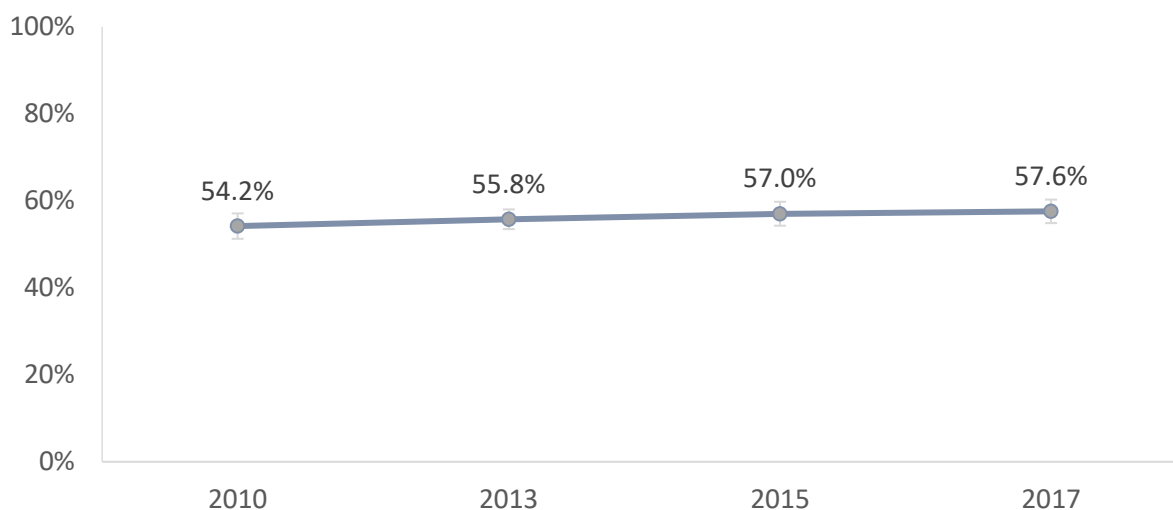
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 219. Percent Boston Public High School Youth Reporting Obesity or Overweight, by Boston and Over Time, 2011–2017
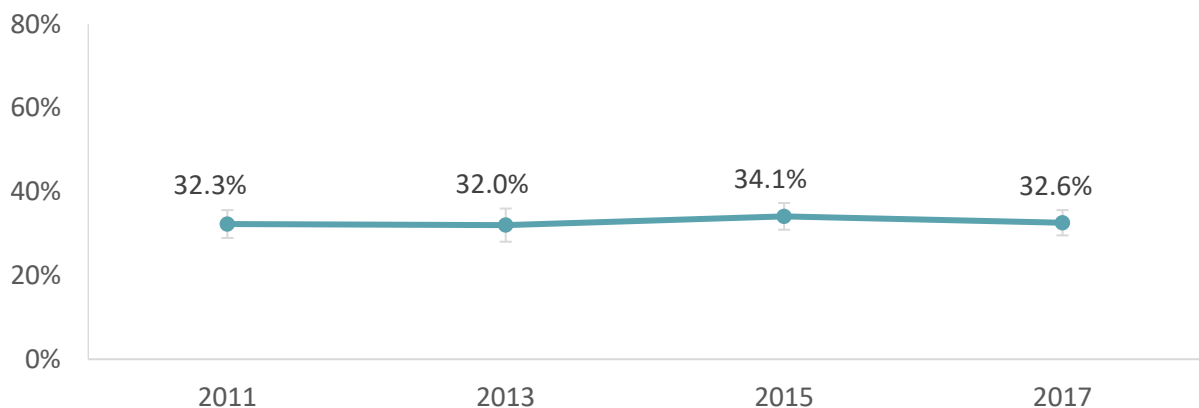
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 220. Percent Boston Public High School Youth Reporting Engagement in Regular Physical Activity, by Boston and Over Time, 2011–2017
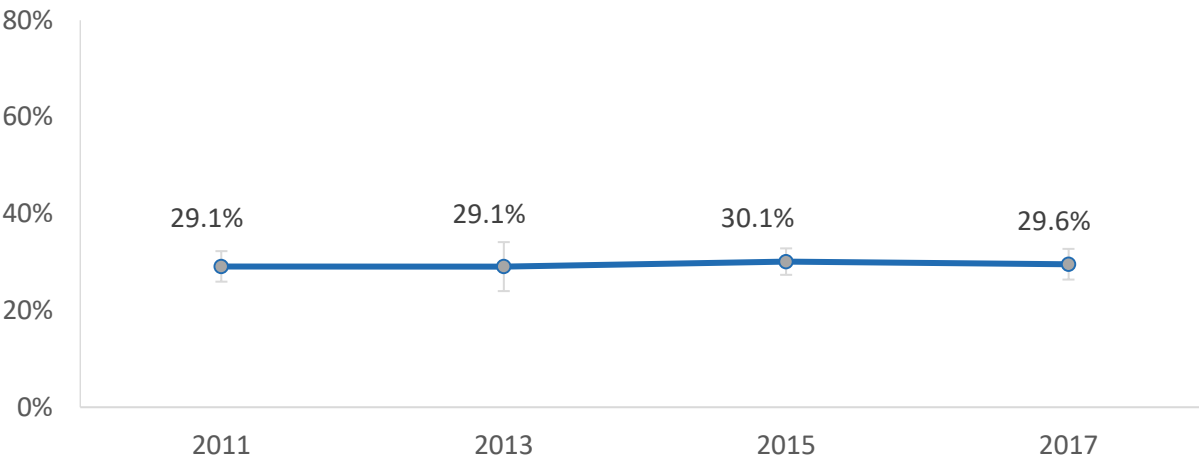
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Regular physical activity is defined as at least 60 minutes per day for at least 5 of the past 7 days; Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 221. Percent Adults Reporting Fruit Consumption of Less Than Once per Day, by Boston and Neighborhood, 2013 and 2015 Combined
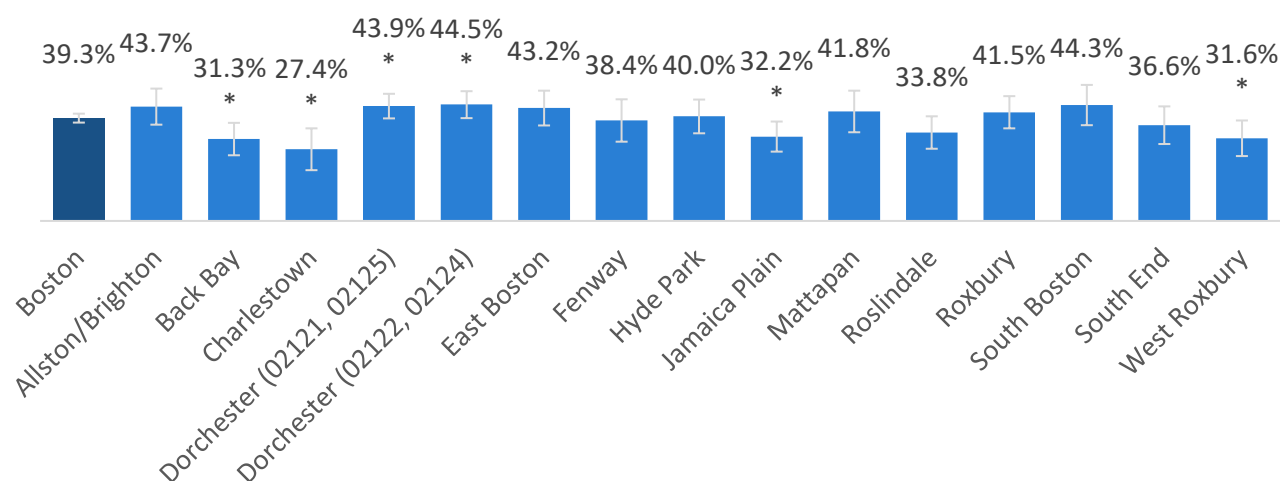
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, and 2015 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 222. Percent Adults Reporting Vegetable Consumption of Less Than Once per Day, by Boston and Neighborhood, 2013 and 2015 Combined
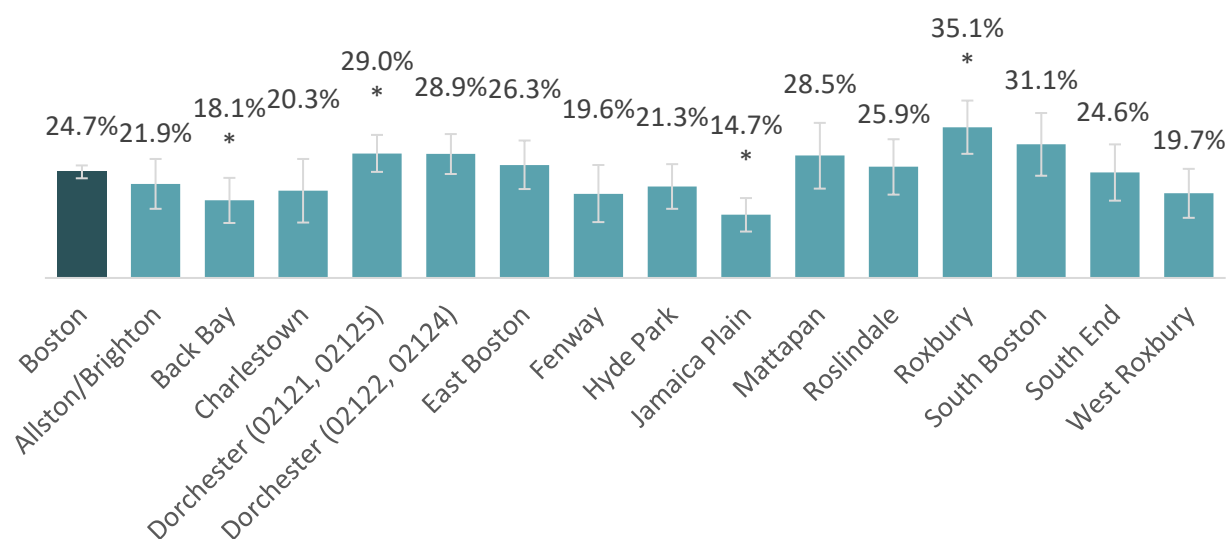
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, and 2015 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 223. Percent Boston Public High School Youth Reporting Fruit Consumption Less Than Once per Day, by Boston and Over Time, 2011–2017
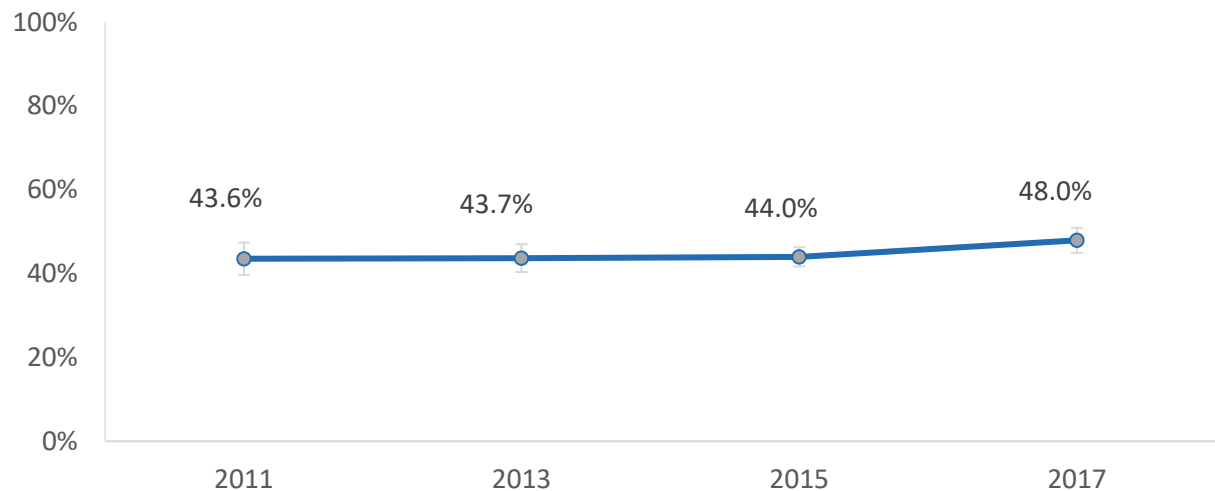
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 224. Percent Boston Public High School Youth Reporting Vegetable Consumption Less Than Once per Day, by Boston and Over Time, 2011–2017
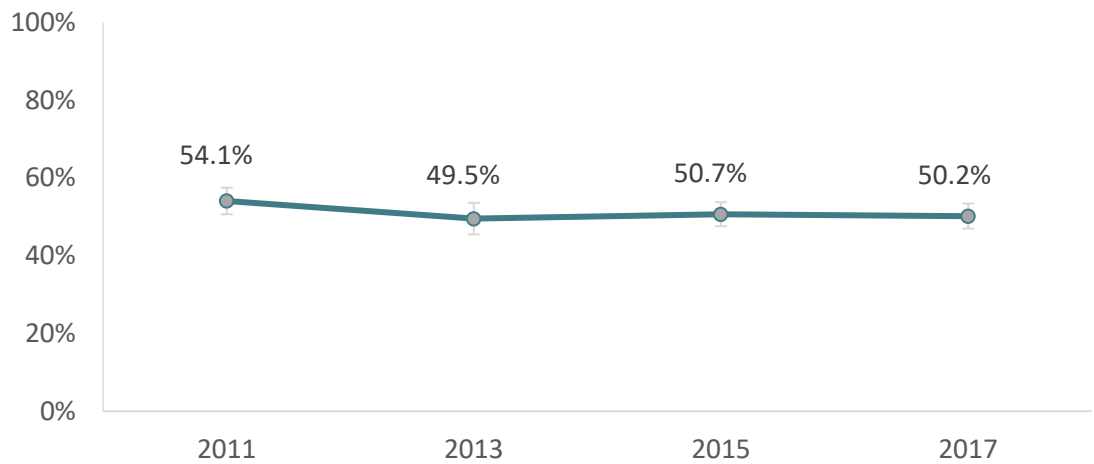
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Error bars show 95% confidence interval

Figure 225. Percent Boston Public School Youth Reporting Sugar Sweetened Beverage Consumption At Least One per Day, by Boston and Selected Indicators, 2015 and 2017 Combined
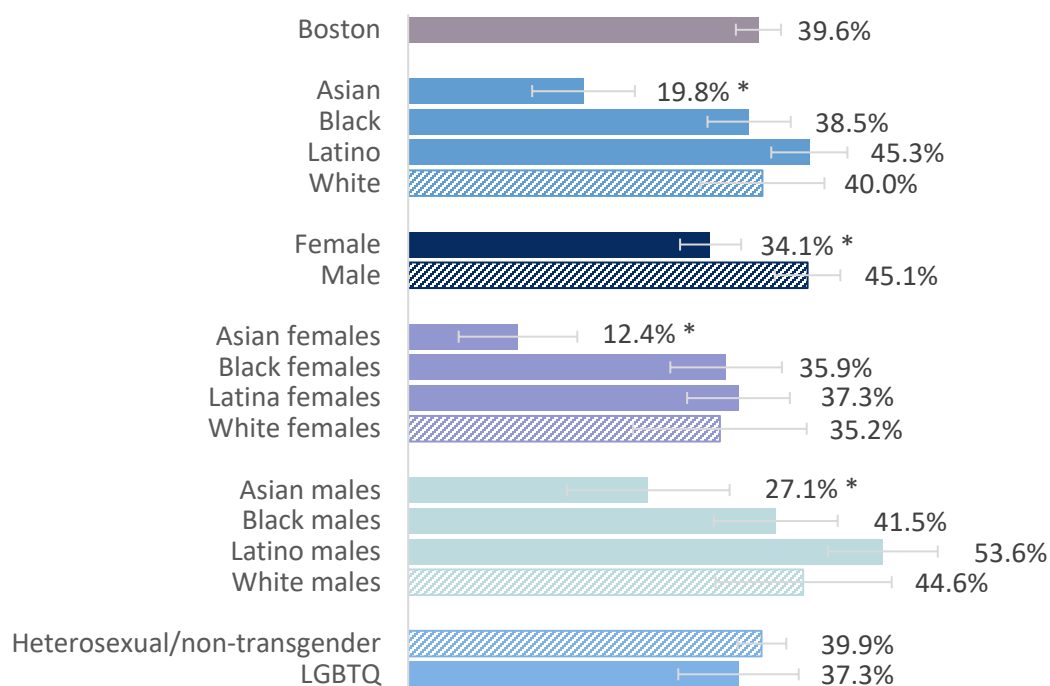
Category	Percent
Boston	39.6%
Asian	19.8% *
Black	38.5%
Latino	45.3%
White	40.0%
Female	34.1% *
Male	45.1%
Asian females	12.4% *
Black females	35.9%
Latina females	37.3%
White females	35.2%
Asian males	27.1% *
Black males	41.5%
Latino males	53.6%
White males	44.6%
Heterosexual/non-transgender	39.9%
LGBTQ	37.3%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2015 and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Chronic Disease

Figure 226. Diabetes Hospitalization Rate, by Boston and Neighborhood, Age–Adjusted Rate per 10,000 Residents, 2016–2017 Combined

Neighborhood	Rate
Boston	22.4
Allston/Brighton	11.6 *
Back Bay	10.9 *
Charlestown	15.3 *
Dorchester (02121, 02125)	29.0 *
Dorchester (02122, 02124)	32.9 *
East Boston	16.0 *
Fenway	18.5 *
Hyde Park	30.9 *
Jamaica Plain	24.4
Mattapan	34.7 *
Roslindale	17.6 *
Roxbury	44.4 *
South Boston	17.9 *
South End	27.9 *
West Roxbury	14.1 *
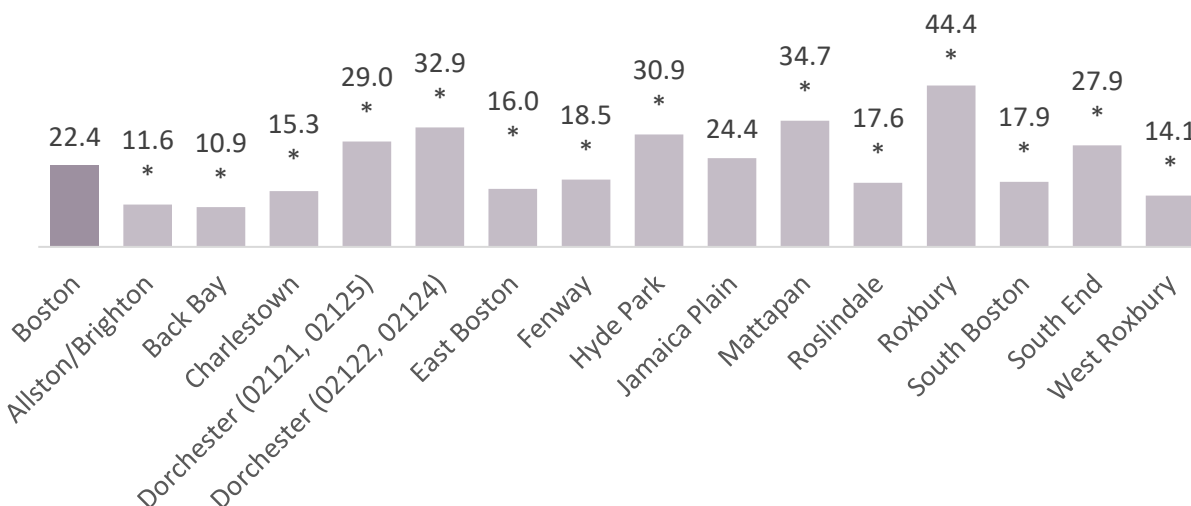
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 227. Diabetes Mortality Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2016–2017 Combined
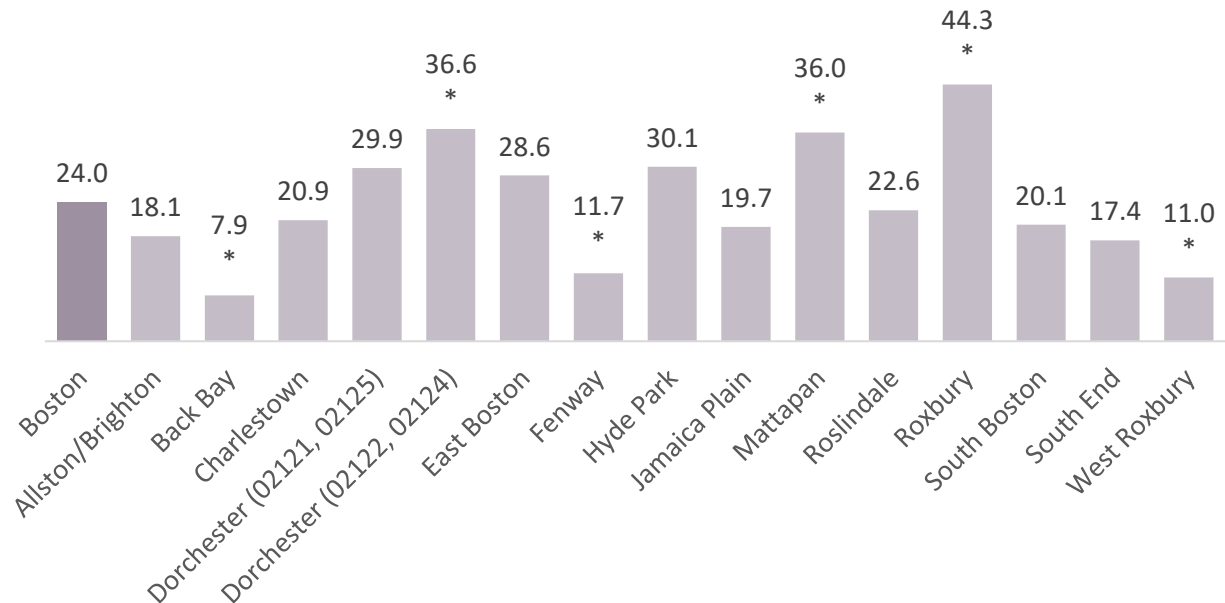
DATA SOURCE: Boston Public Health Commission, Boston resident deaths, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Allston/Brighton, Dorchester (02121, 02125), Dorchester (02122, 02124), East Boston, Hyde Park, Mattapan, Roslindale, and Roxbury are ≤ 20 and rates should be interpreted with caution; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 228. Asthma Emergency Department Visit Rate, by Boston and Over Time, Age–Adjusted Rate per 10,000 Residents, 2016–2017
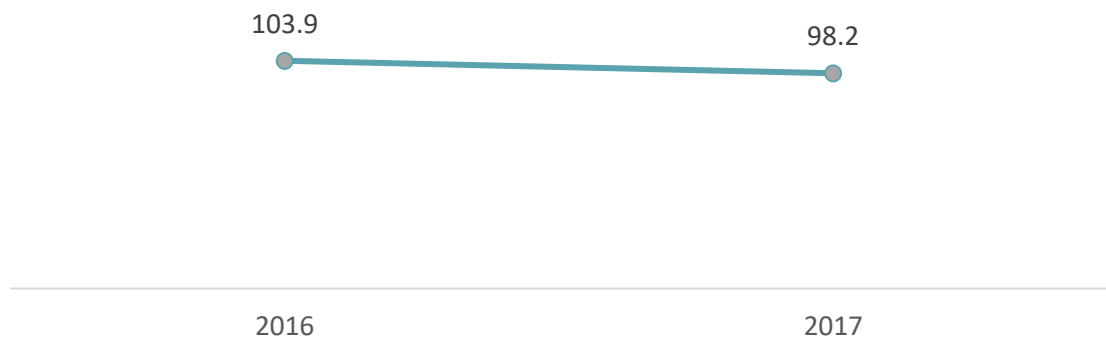
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was statistically significant (decrease over time)

Figure 229. Asthma Emergency Department Rate in Boston, by Age and Over Time, Age–Specific Rate per 10,000 Residents, 2016–2017
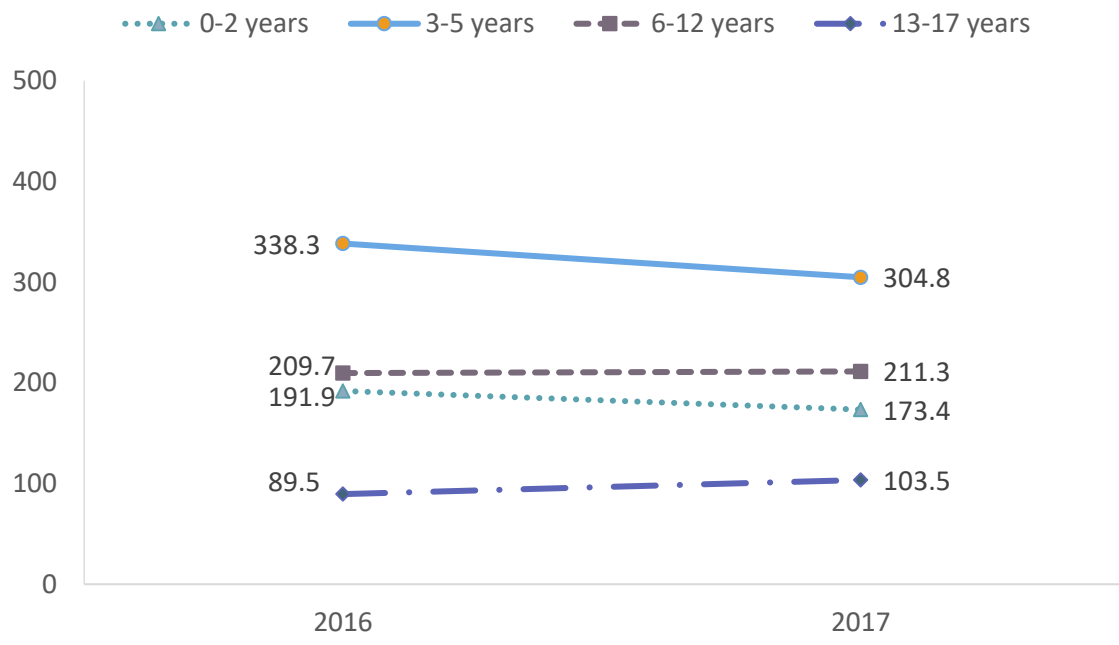
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016 and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was not statistically significant for any of the age groups

Figure 230. Asthma Hospitalization Rate, by Boston and Over Time, Age–Adjusted Rate per 10,000 Residents, 2016–2017

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was statistically significant (decrease over time)

Figure 231. Asthma Emergency Department Visit Rate in Boston, by Age, Age–Specific Rate per 10,000 Residents, 2016–2017 Combined
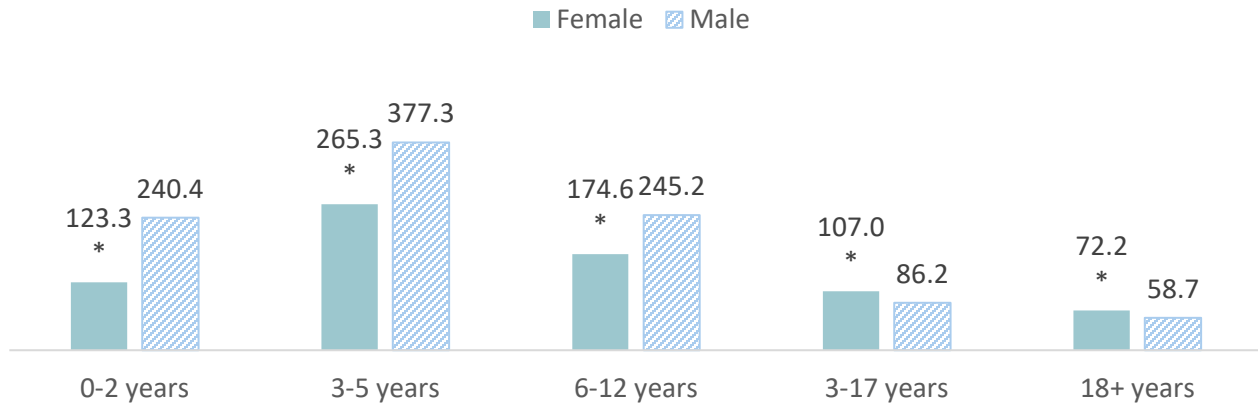
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group within each age category; Asterisk (*) denotes where estimate was significantly different compared to reference group within each specific age category (p <0.05)

Figure 232. Asthma Hospitalization Rate in Boston, by Age and Over Time, Age–Specific Rate per 10,000 Residents, 2016– 2017
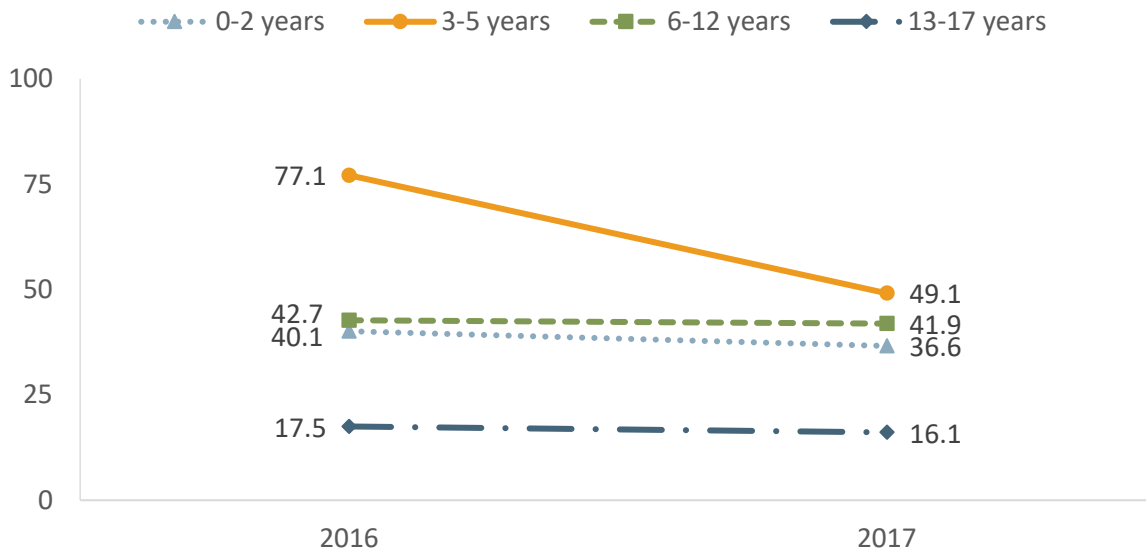
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016 and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time for the 3-5 years age group was statistically significant

Figure 233. Asthma Hospitalization Rate in Boston, by Age, Age–Specific Rate per 10,000 Residents, 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group within each age category; Asterisk (*) denotes where estimate was significantly different compared to reference group within each specific age category (p <0.05)

Figure 234. Percent Female Adults (Aged 50–74 Years) Reporting Having Had a Mammogram in Past Two Years, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
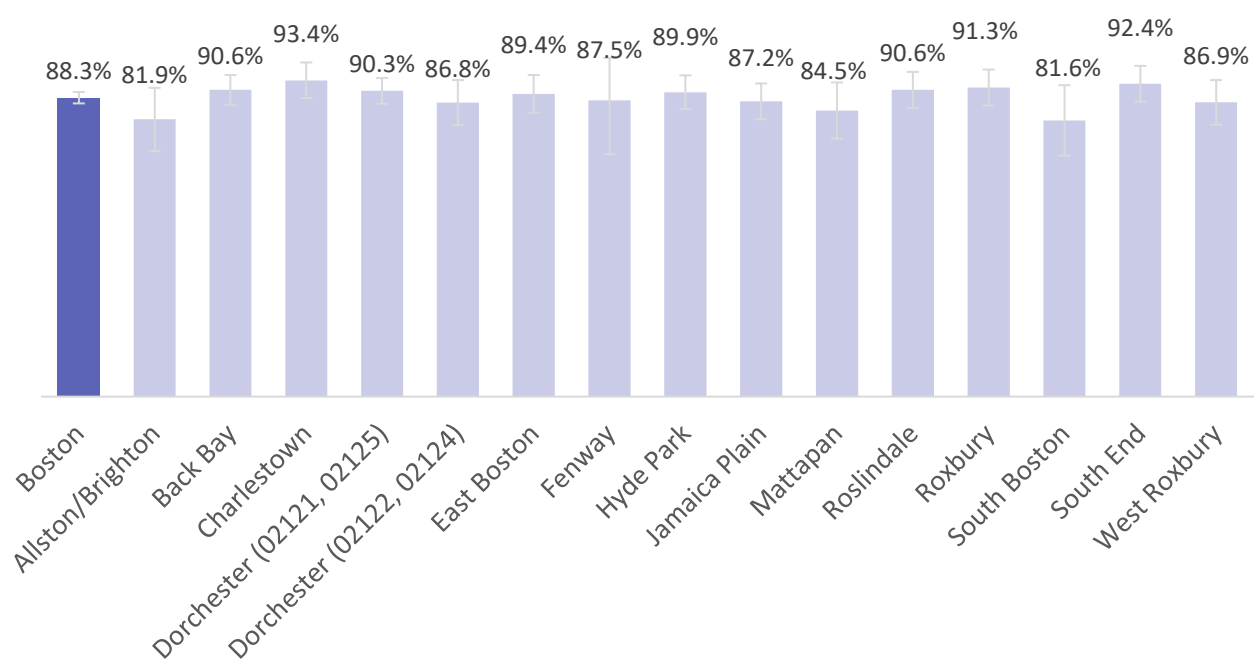
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 235. Percent Adults (Aged 50–75 Years) Reporting Having Ever Had a Colonoscopy or Sigmoidoscopy, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
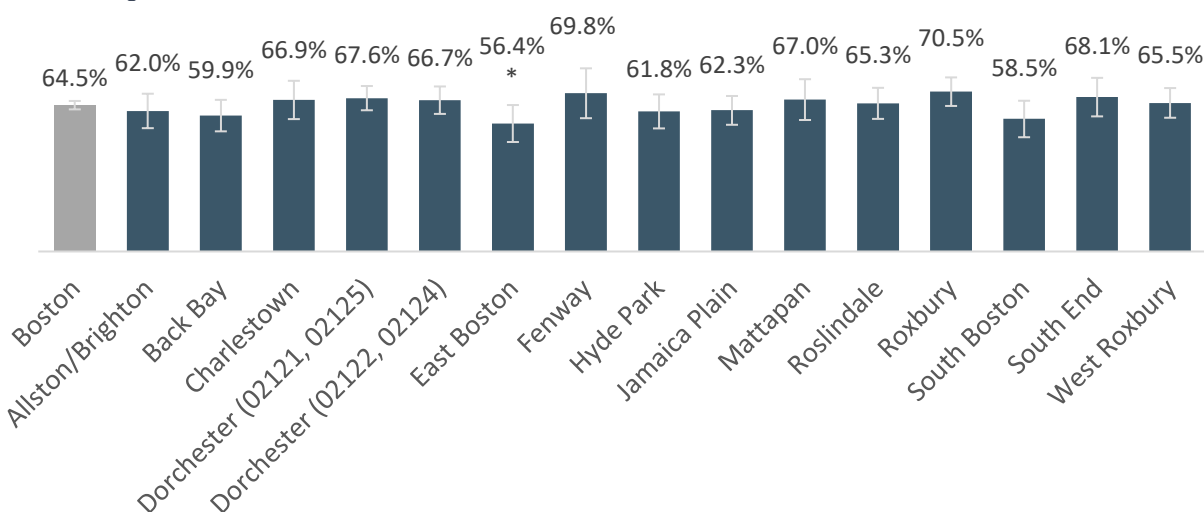
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Table 66. Invasive Cancer Incidence Rate, by Boston, Race/Ethnicity, and Over Time, Age–Adjusted Rate per 100,000 Population, 2001–2015

Year	Boston	Asian	Black	Latino	White
2001	535.1	301.2	563.5	402.2	585.8
2002	557.8	398.4	574.6	352.5	618.1
2003	530.9	358.9	520	324.2	599.7
2004	529.4	347.2	523.9	409.9	596.6
2005	509.9	312.1	523.5	329.5	583.9
2006	525.8	353.6	552.6	403.8	580.7
2007	531.4	377.9	548.2	375.3	594.6
2008	515.4	378.1	569.6	399.3	553.5
2009	500.3	317.2	533.1	396	553.9
2010	496.7	370.8	550	433.9	530.9
2011	503.7	402.5	568.7	391.1	530.6
2012	480.7	321.5	528.7	431.4	510.1
2013	492.5	372.9	539.5	363.1	545
2014	468.5	333.9	502.6	352.4	535.5
2015	492.5	390.5	527.9	349.4	546.7

DATA SOURCE: Massachusetts Department of Public Health, Cancer Registry, 2001-2015
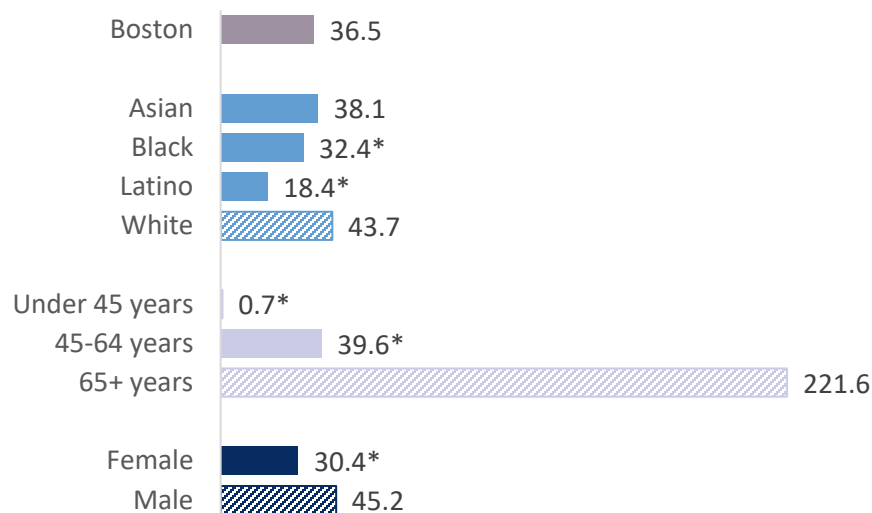DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Statistical testing was conducted for 2015 data, where rates for Asian and Latino residents were statistically lower compared to rate for White residents (p<0.05); Change over time was statistically significant for Boston (decrease over time) and White residents (decrease over time)

Table 67. Colorectal Cancer Incidence Rate, by Boston, Race/Ethnicity, and Over Time, Age–Adjusted Rate per 100,000 Residents, 2001–2003 – 2013–2015

Year	Boston	Asian	Black	Latino	White
2001–2003	63.9	51.1	65.5	34.1	70.1
2004–2006	53.2	45.2	54.4	39.2	58.0
2007–2009	49.0	43.2	51.2	34.5	52.2
2010–2012	42.8	41.7	49.7	36.6	42.3
2013–2015	40.9	32.4	51.6	28.9	41.3

DATA SOURCE: Massachusetts Department of Public Health, Cancer Registry, 2001-2003, 2004-2006, 2007-2009, 2010-2012, and 2013-2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Statistical testing was conducted for 2013-2015 data, where rate for Black residents was statistically higher and Latino residents was statistically lower compared to rate for White residents (p<0.05); Change over time was statistically significant for Boston (decrease over time), Asian (decrease over time), Black (decrease over time), and White residents (decrease over time)

Table 68. Lung Cancer Incidence Rate, by Boston, Race/Ethnicity, and Over Time, Age–Adjusted Rate per 100,000 Residents, 2001–2003 – 2013–2015

Year	Boston	Asian	Black	Latino	White
2001–2003	77.9	53.6	73.8	19.9	91.4
2004–2006	75.2	49.4	74.4	21.9	89.3
2007–2009	67.7	46.1	65.2	39.7	80
2010–2012	67.9	52.7	68.1	33.9	80.3
2013–2015	64.7	65.7	62.8	30.9	77.2

DATA SOURCE: Massachusetts Department of Public Health, Cancer Registry, 2001-2003, 2004-2006, 2007-2009, 2010-2012, and 2013-2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Statistical testing was conducted for 2013-2015 data, where rate for Black and Latino residents was statistically lower compared to rate for White residents (p<0.05); Change over time was statistically significant for Boston (decrease over time), Black (decrease over time), Latino (decrease over time), and White residents (decrease over time)

Table 69. Female Breast Cancer Incidence Rate, by Boston, Race/Ethnicity, and Over Time, Age–Adjusted Rate per 100,000 Residents, 2001–2003 – 2013–2015

Year	Boston	Asian	Black	Latino	White
2001–2003	131.6	67.7	127.8	79.1	154.4
2004–2006	119.9	59.9	123.1	75.2	144.9
2007–2009	127.1	66.1	140.0	74.3	151.6
2010–2012	123.7	110.5	124.5	95.6	142.1
2013–2015	132.7	80.3	140.1	90.0	160.1

DATA SOURCE: Massachusetts Department of Public Health, Cancer Registry, 2001-2003, 2004-2006, 2007-2009, 2010-2012, and 2013-2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Statistical testing was conducted for 2013-2015 data, where rates for Asian, Black, and Latino residents were statistically lower compared to rate for White residents (p<0.05); Change over time was statistically significant for Boston residents (increase over time)

Table 70. Prostate Cancer Incidence Rate, by Boston, Race/Ethnicity, and Over Time, Age-Adjusted Rate per 100,000 Residents, 2001–2003 – 2013–2015

Year	Boston	Asian	Black	Latino	White
2001–2003	192.3	101.8	315.3	156.1	170.4
2004–2006	171.9	89.8	274.8	173.7	148.4
2007–2009	174.0	91.6	243.3	203.0	156.5
2010–2012	159.7	59.2	277.2	185.7	121.5
2013–2015	126.7	74.5	190.0	111.8	110.8

DATA SOURCE: Massachusetts Department of Public Health, Cancer Registry, 2001-2003, 2004-2006, 2007-2009, 2010-2012, and 2013-2015
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Statistical testing was conducted for 2013-2015 data, where rate for Black residents was statistically higher and Asian residents was statistically lower compared to rate for White residents (p<0.05); Change over time was statistically significant for Boston (decrease over time), Asian (decrease over time), Black (decrease over time), Latino (decrease over time), and White residents (decrease over time)

Figure 236. Cancer Mortality Rate, by Boston and Neighborhood, Age-Adjusted Rate per 100,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
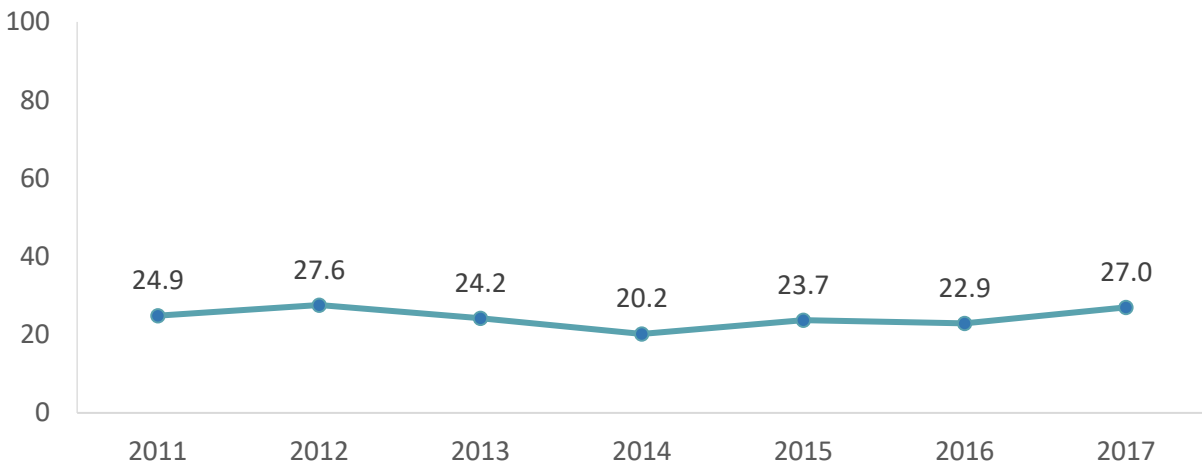DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p <0.05)

Figure 237. Colorectal Cancer Mortality Rate, by Boston and Selected Indicators, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

Boston	12.1
Asian	8.7
Black	15.6
Latino	6.4*
White	12.2
Under 45 years	0.5*
45-64 years	14.6*
65+ years	70.9
Female	8.8*
Male	16.5

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Figure 238. Colorectal Cancer Mortality Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

Boston	Allston/Brighton	Back Bay	Charlestown	Dorchester (02121, 02125)	Dorchester (02122, 02124)	East Boston	Fenway	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South Boston	South End	West Roxbury
12.1	13.5	8.4	22.5*	13.1	14.7	7.7	9.5	7.6	11.6	14.4	10.8	16.3	12.7	9.4	13.5

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p <0.05)

Figure 239. Colorectal Cancer Mortality Rate, by Boston and Over Time, Age–Adjusted Rate per 100,000 Residents, 2011–2017
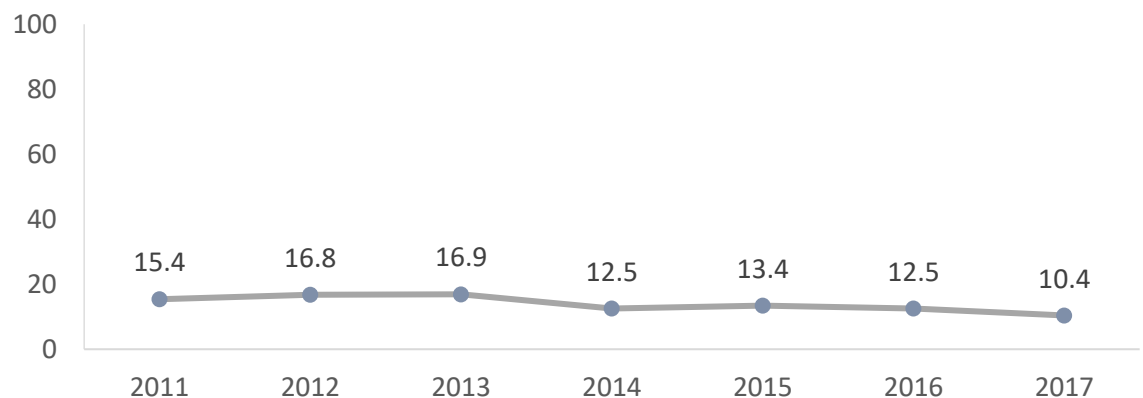
DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Change over time was statistically significant (decrease over time)

Figure 240. Lung Cancer Mortality Rate, by Boston and Selected Indicators, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

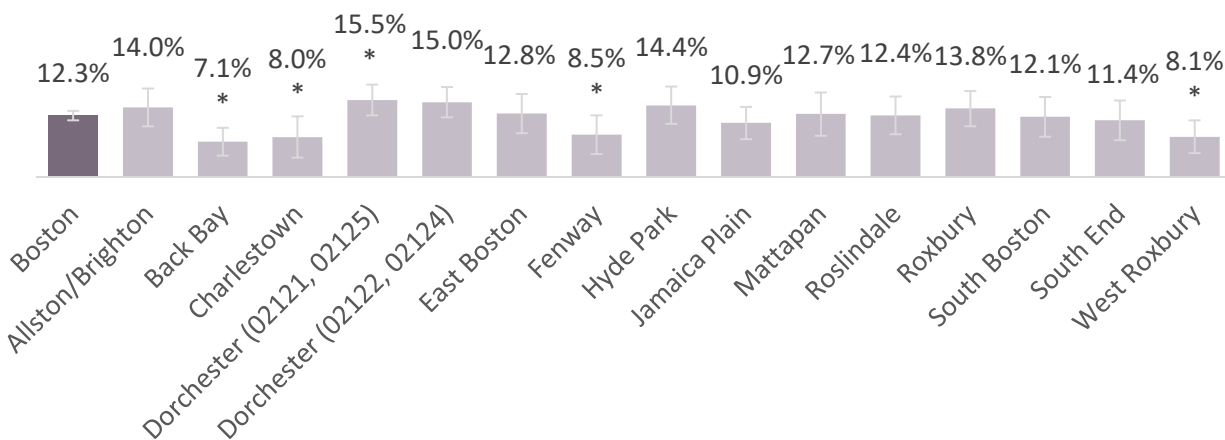DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Figure 241. Lung Cancer Mortality Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p <0.05)

Figure 242. Lung Cancer Mortality Rate, by Boston and Over Time, Age–Adjusted Rate per 100,000 Residents, 2011–2017
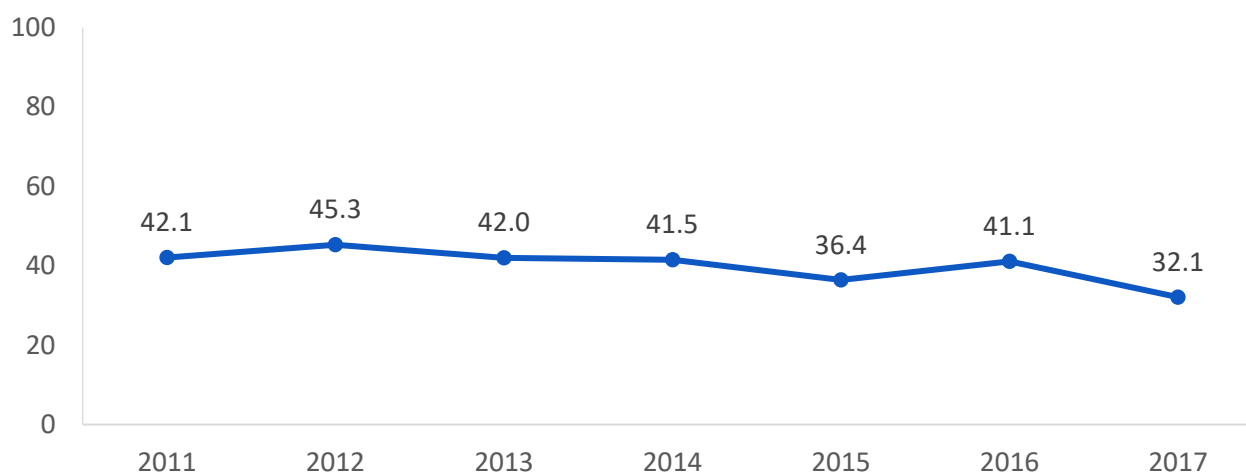
DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Change over time was statistically significant (decrease over time)

Figure 243. Female Breast Cancer Mortality Rate, by Boston and Selected Indicators, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

Category	Rate
Boston	19.9
Asian	9.9*
Black	26.2
Latino	8.2*
White	21.3
Under 45 years	1.8*
45-64 years	28.1*
65+ years	106.3

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Figure 244. Female Breast Cancer Mortality Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

Neighborhood	Rate
Boston	19.9
Allston/Brighton	13.6
Back Bay	17.0
Charlestown	18.4
Dorchester (02121, 02125)	9.6*
Dorchester (02122, 02124)	19.5
East Boston	24.6
Fenway	35.9*
Hyde Park	36.3*
Jamaica Plain	24.9
Mattapan	32.1
Roslindale	22.4
Roxbury	23.4
South Boston	25.9
South End	10.3
West Roxbury	16.2

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p <0.05)

Figure 245. Female Breast Cancer Mortality Rate, by Boston and Over Time, Age–Adjusted Rate per 100,000 Residents, 2011–2017
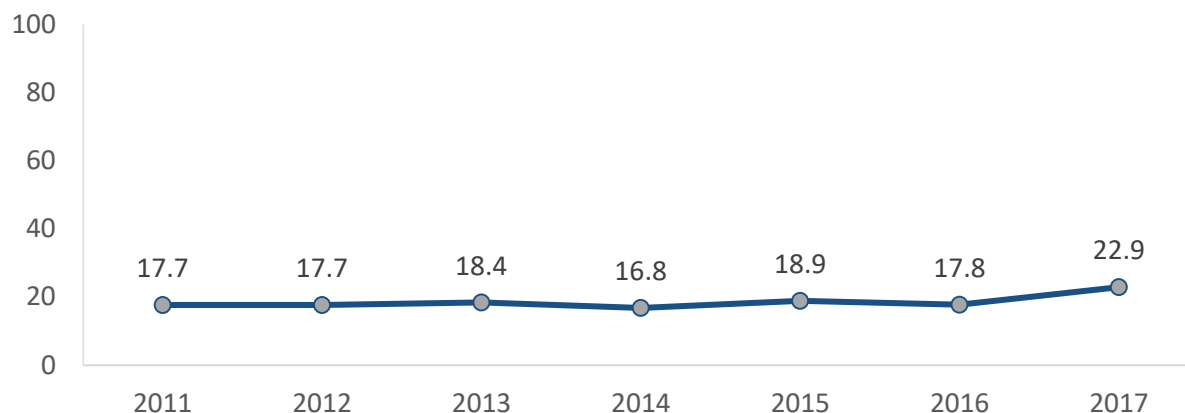
DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Change over time was not statistically significant

Figure 246. Prostate Cancer Mortality Rate, by Boston and Selected Indicators, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; NA denotes where data are suppressed due to insufficient sample size; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); For age stratifications, rates are age-specific rates per 100,000 residents

Figure 247. Prostate Cancer Mortality Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; NA denotes where data are suppressed due to insufficient sample size; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p <0.05)

Figure 248. Prostate Cancer Mortality Rate, by Boston and Over Time, Age–Adjusted Rate per 100,000 Residents, 2011–2017

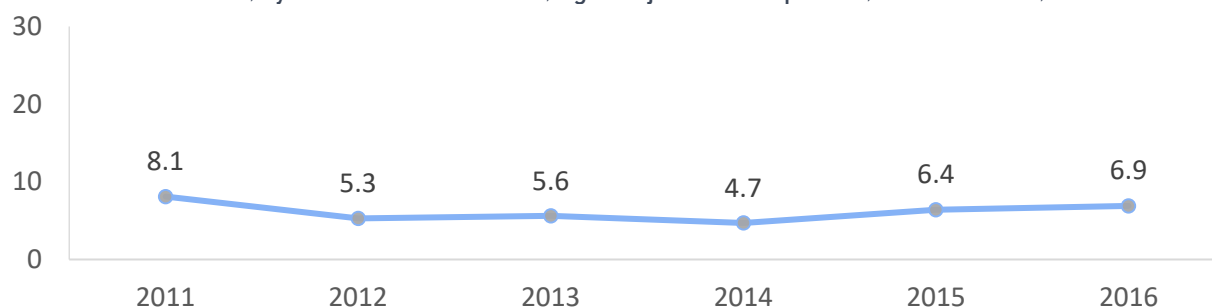DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Change over time was not statistically significant

Figure 249. Percent Adults Reporting Heart Attack, by Boston and Selected Indicators, 2017
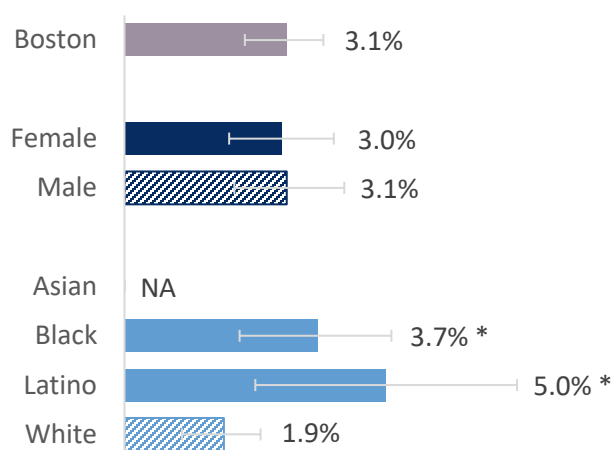
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Table 71. Heart Disease Mortality Rate in Boston, by Race/Ethnicity by Age, Age-Specific Rate per 100,000 Residents, 2016-2017 Combined

	Asian	Black	Latino	White
18-34 years	NA	10.0*	2.5	1.4
35-49 years	6.9*	47.5*	20.9	29.9
50-64 years	32.3*	144.9	79.8*	135.2
65+ years	398.9*	771.5*	480.9*	1,155.0

DATA SOURCE: Boston Public Health Commission, Boston resident deaths, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where estimate was significantly different compared to White (reference group in each age category) (p <0.05)

Figure 250. Stroke Hospitalization Rate, by Boston and Neighborhood, Age–Adjusted Rate per 10,000 Residents, 2016–2017 Combined
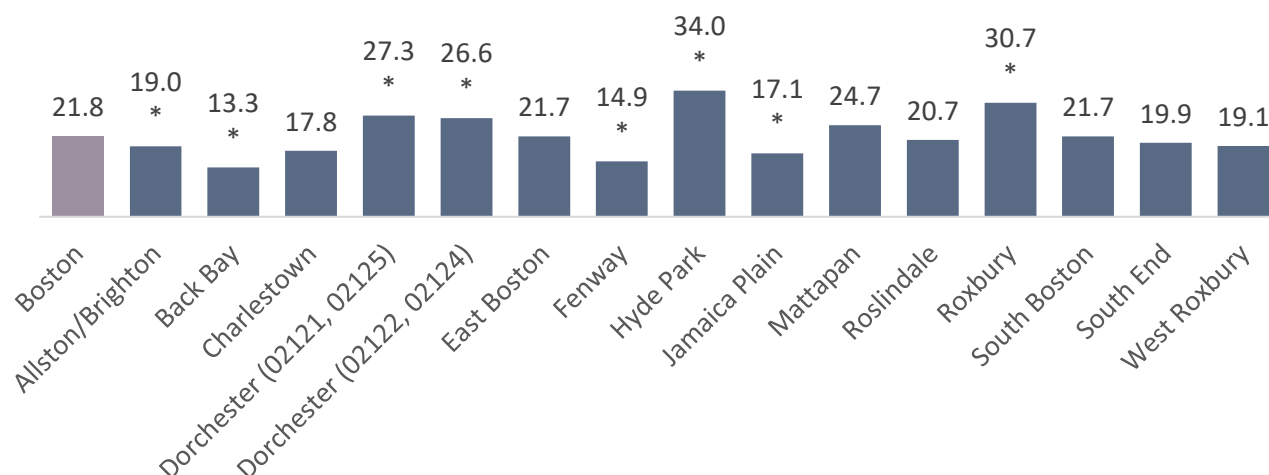
DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 251. Stroke Mortality Rate, by Boston and Neighborhood, Age–Adjusted Rate per 100,000 Residents, 2016–2017 Combined
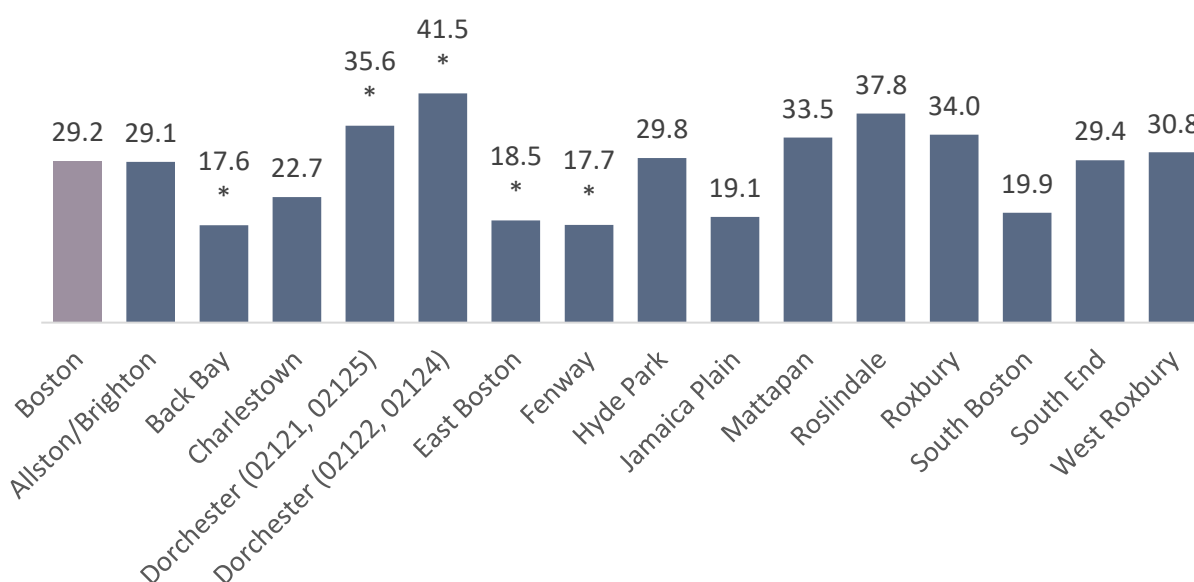
DATA SOURCE: Boston Public Health Commission, Boston resident deaths, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Back Bay, Dorchester (02121, 02125), Dorchester (02122, 02124), East Boston, and Fenway are ≤ 20 and rates should be interpreted with caution Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Mental Health

Figure 252. Percent Adults Reporting Persistent Sadness, by Boston and Neighborhood, 2013, 2015, and 2017 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Persistent sadness is defined as feeling sad, blue, or depressed for more than 15 days within the past 30 days; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval
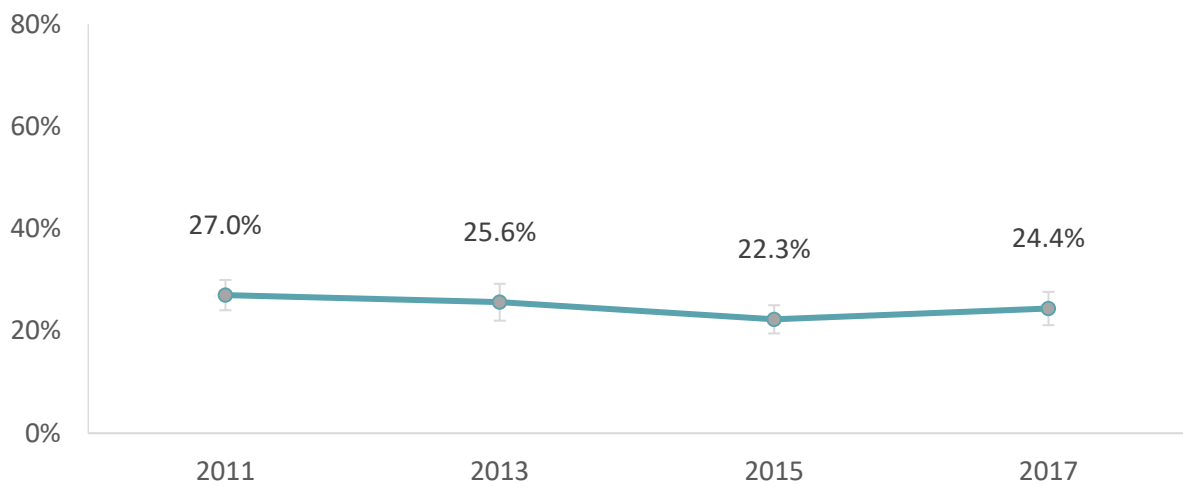
Figure 253. Percent Adults Reporting Persistent Sadness, by Boston and Over Time, 2010–2017
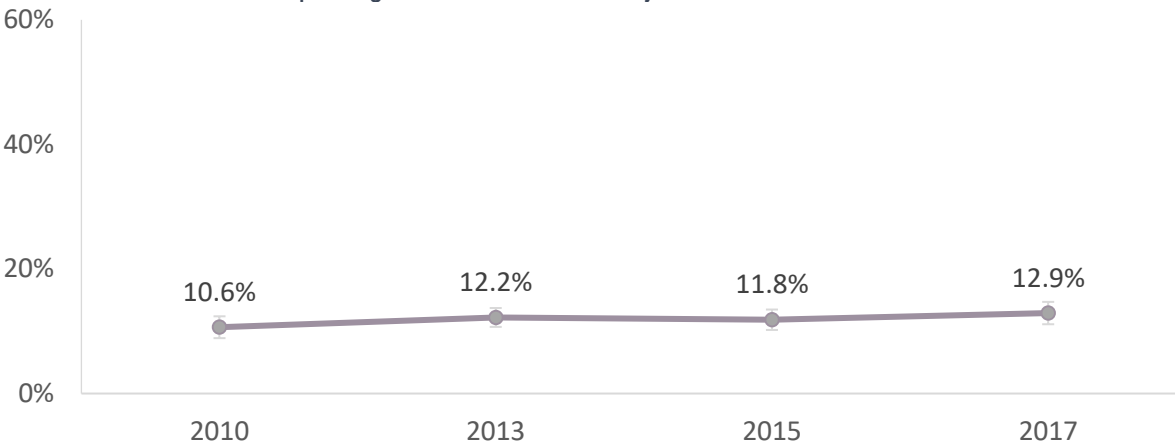
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Persistent sadness is defined as feeling sad, blue, or depressed for more than 15 days within the past 30 days; Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 254. Percent Adults Reporting Persistent Anxiety, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
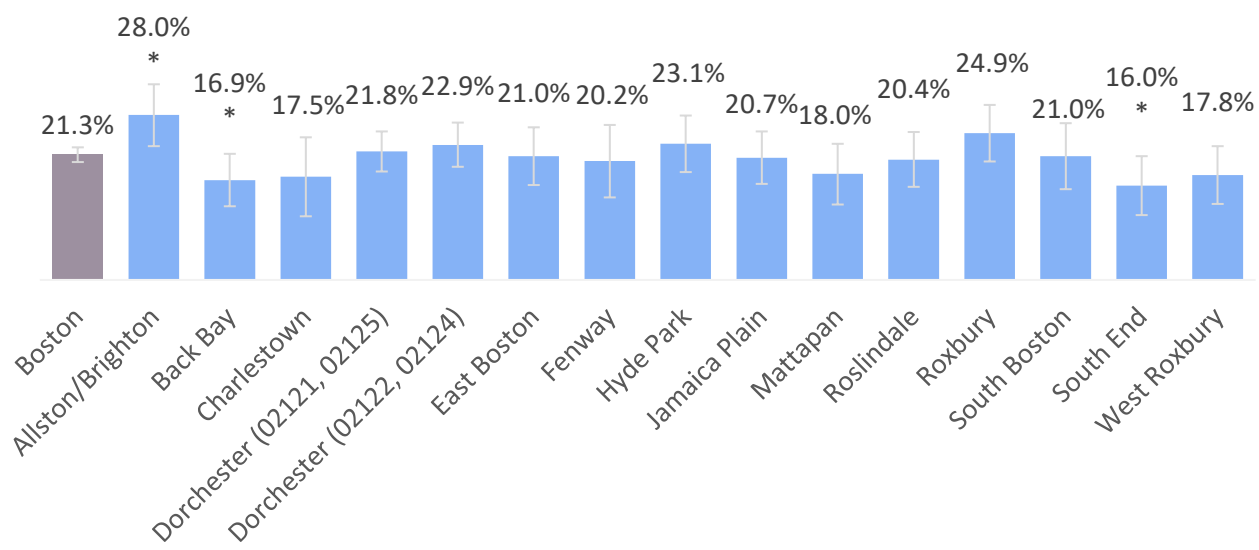
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Persistent anxiety is defined as feeling worried, tense, or anxious for more than 15 days within the past 30 days; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 255. Percent Adults Reporting Persistent Anxiety, by Boston and Over Time, 2010–2017
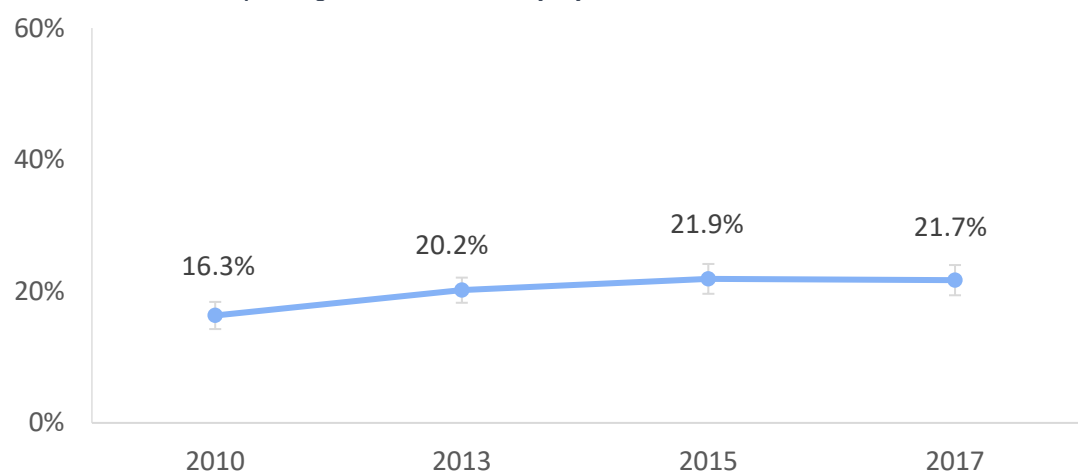
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Persistent Anxiety is defined as feeling worried, tense, or anxious for more than 15 days within the past 30 days; Error bars show 95% confidence interval; Change over time was statistically significant (increase over time)

**Figure 256. Percent Boston CHNA Survey Respondents Reporting Anxiety and Sadness in Past 30 Days, 2019**
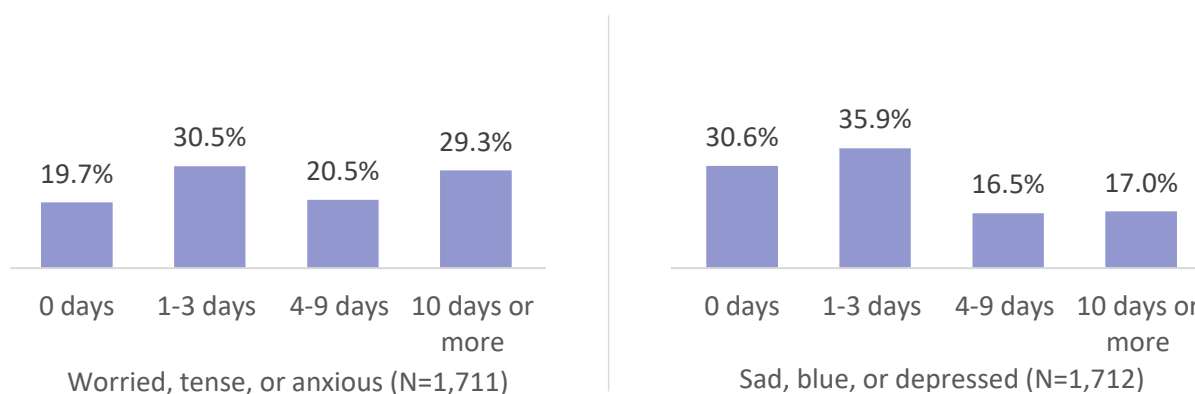
	0 days	1-3 days	4-9 days	10 days or more
Worried, tense, or anxious (N=1,711)	19.7%	30.5%	20.5%	29.3%
Sad, blue, or depressed (N=1,712)	30.6%	35.9%	16.5%	17.0%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "prefer not to answer/don't know"

Figure 257. Percent Boston CHNA Survey Respondents Reporting Feeling Worried, Tense, or Anxious For 10 Days or More in Past 30 Days, by All Respondents and Selected Indicators, 2019
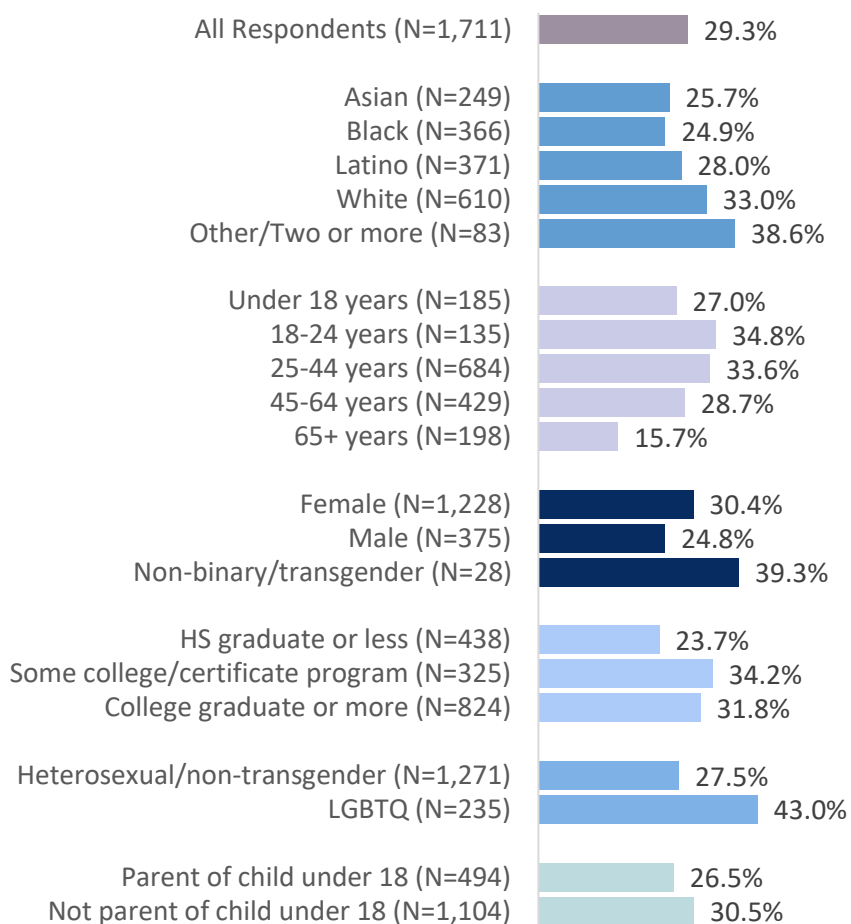
All Respondents (N=1,711)	29.3%
Asian (N=249)	25.7%
Black (N=366)	24.9%
Latino (N=371)	28.0%
White (N=610)	33.0%
Other/Two or more (N=83)	38.6%
Under 18 years (N=185)	27.0%
18-24 years (N=135)	34.8%
25-44 years (N=684)	33.6%
45-64 years (N=429)	28.7%
65+ years (N=198)	15.7%
Female (N=1,228)	30.4%
Male (N=375)	24.8%
Non-binary/transgender (N=28)	39.3%
HS graduate or less (N=438)	23.7%
Some college/certificate program (N=325)	34.2%
College graduate or more (N=824)	31.8%
Heterosexual/non-transgender (N=1,271)	27.5%
LGBTQ (N=235)	43.0%
Parent of child under 18 (N=494)	26.5%
Not parent of child under 18 (N=1,104)	30.5%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "not applicable/don't know"; Chi-square analyses were conducted and there were statistically significant differences within the following groups (p < 0.05): race/ethnicity, age, gender identity, educational attainment, and sexual orientation

Figure 258. Percent Boston CHNA Survey Respondents Reporting Feeling Sad, Blue, or Depressed For 10 Days or More in Past 30 Days, by All Respondents and Selected Indicators, 2019
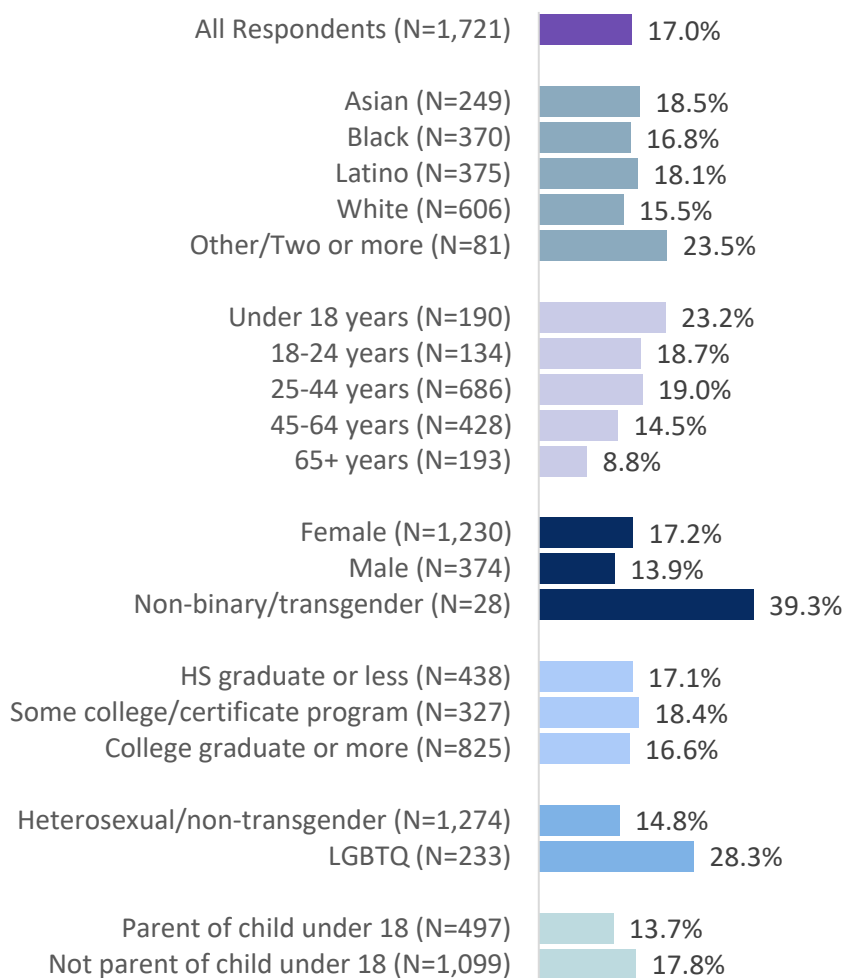
All Respondents (N=1,721)	17.0%
Asian (N=249)	18.5%
Black (N=370)	16.8%
Latino (N=375)	18.1%
White (N=606)	15.5%
Other/Two or more (N=81)	23.5%
Under 18 years (N=190)	23.2%
18-24 years (N=134)	18.7%
25-44 years (N=686)	19.0%
45-64 years (N=428)	14.5%
65+ years (N=193)	8.8%
Female (N=1,230)	17.2%
Male (N=374)	13.9%
Non-binary/transgender (N=28)	39.3%
HS graduate or less (N=438)	17.1%
Some college/certificate program (N=327)	18.4%
College graduate or more (N=825)	16.6%
Heterosexual/non-transgender (N=1,274)	14.8%
LGBTQ (N=233)	28.3%
Parent of child under 18 (N=497)	13.7%
Not parent of child under 18 (N=1,099)	17.8%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "not applicable/don't know"; Chi-square analyses were conducted and there were statistically significant differences within the following groups (p < 0.05): race/ethnicity, age, gender identity, and sexual orientation

Figure 259. Suicide Rate, by Boston and Neighborhood, Age-Adjusted Rate per 100,000 Residents, 2012–2016 Combined
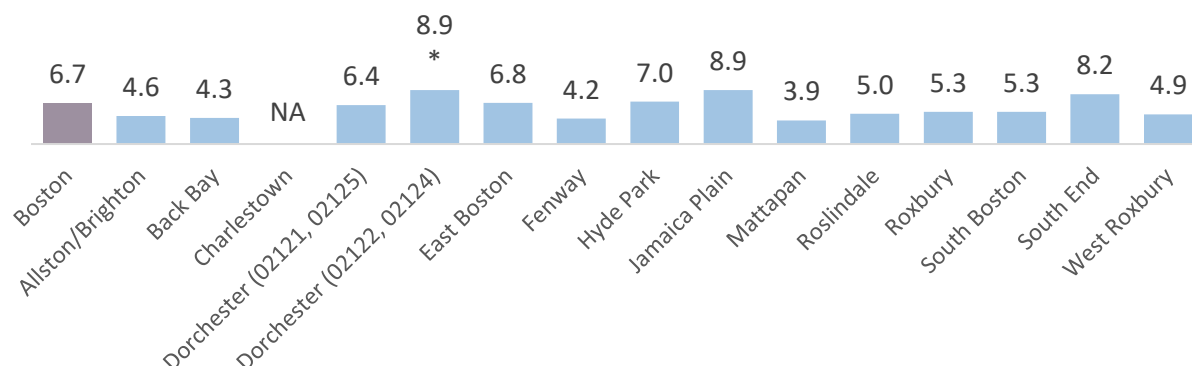
DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2012-2016 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Back Bay includes Back Bay, Beacon Hill, Downtown, North End, and West End; South End includes South End and Chinatown; NA denotes where data not presented due to insufficient sample size; All neighborhood sample sizes excluding Dorchester (02122, 02124) are < 20 and rates should be interpreted with caution; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p <0.05)
While the JP rate is the same as Dorchester, it is not statistically significant due to a wider variance.

Figure 260. Suicide Rate, by Boston and Over Time, Age-Adjusted Rate per 100,000 Residents, 2011–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was not statistically significant

Figure 261. Percent Boston Public School Students Reporting Feeling Connected to Adults at School (N=10,488), 2018
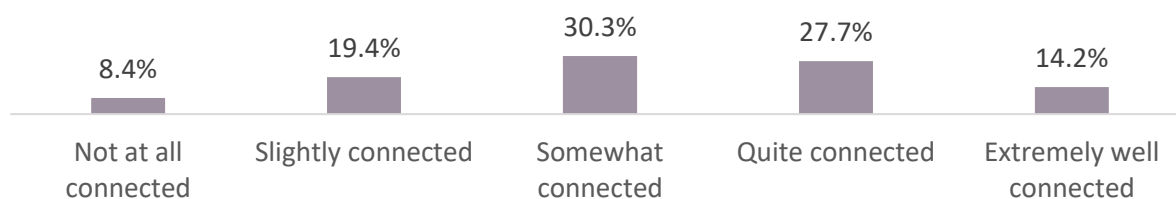
DATA SOURCE: Boston Public Schools, Office of Data and Accountability, Student Climate Survey, 2018

Figure 262. Percent Adults Reporting Receiving Treatment for Depression in the Past Year, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
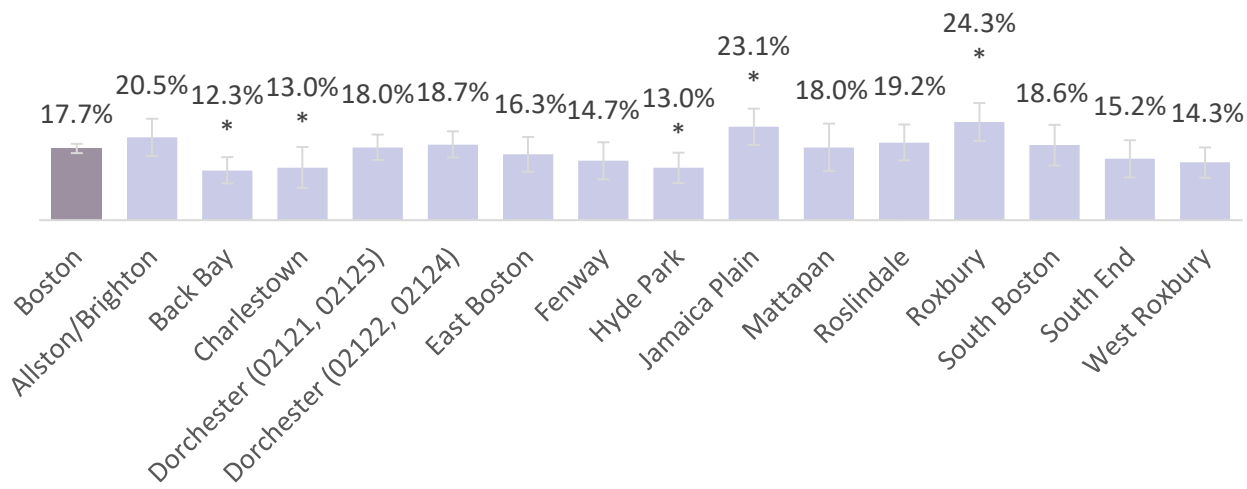
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Substance Use

Figure 263. Percent Boston Public High School Youth Reporting Current Electronic Cigarette Smoking, by Boston and Over Time, 2015–2017
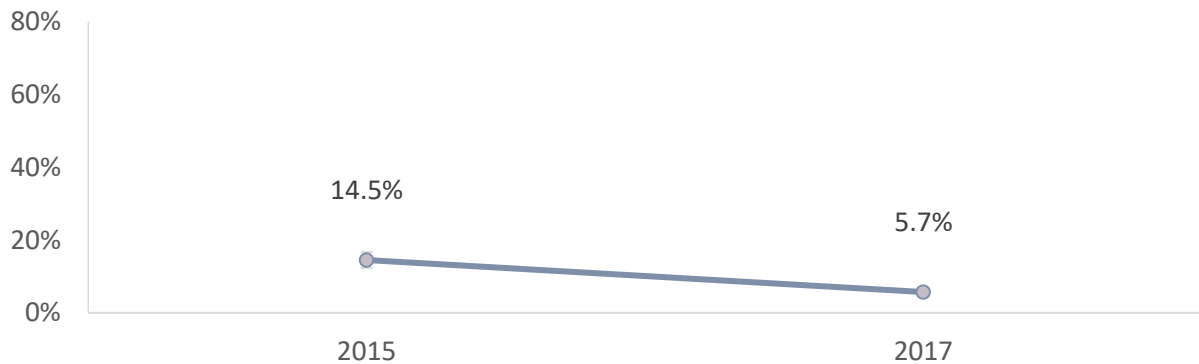
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2015 and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Current electronic cigarette use is defined as any use of electronic cigarettes in the past 30 days; Electronic cigarettes are not limited to tobacco consumption only; Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

Figure 264. Percent Boston Public High School Youth Reporting Current Marijuana Use, by Boston and Over Time, 2011–2017

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 265. Percent Adults Reporting Current Marijuana Use, by Boston and Neighborhood, 2017
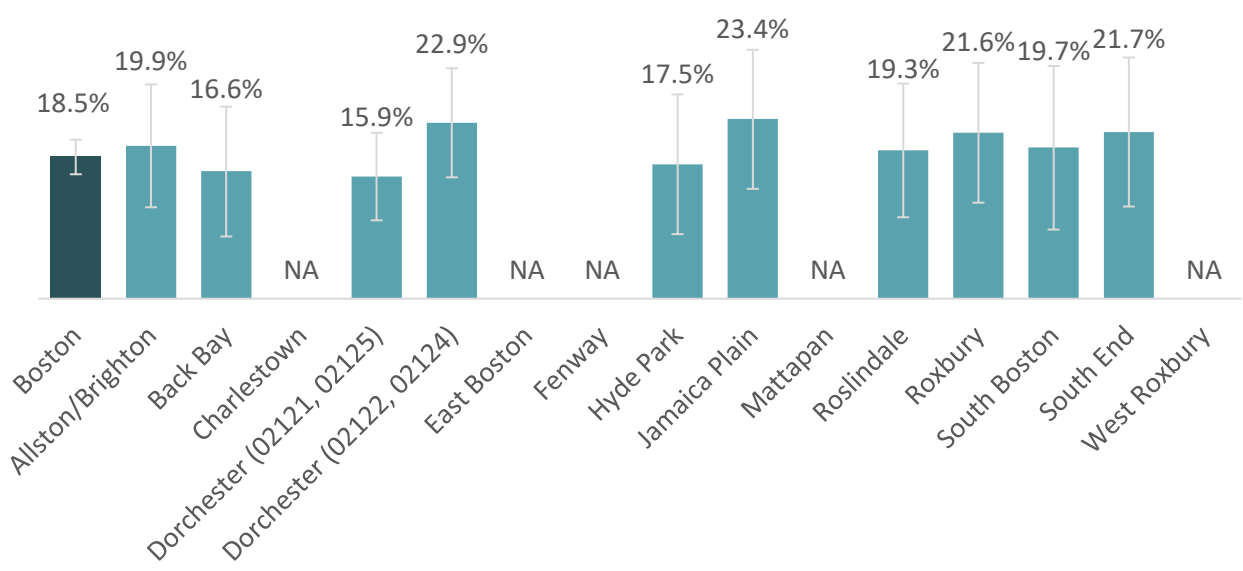
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval; NA denotes where data are suppressed due to insufficient sample size

Figure 266. Marijuana Dependence and Abuse Hospital Patient Encounters, by Boston and Selected Indicators, Age–Adjusted Rate per 10,000 Residents 12 Years and Over, 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 267. Percent Adults Reporting Current Heavy Drinking, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Category	Percent
Boston	8.7%
Asian	2.8% *
Black	6.3% *
Latino	4.5% *
White	12.5%
BHA resident	5.2% *
Renter, rental assistance	4.7% *
Renter, no assistance	9.5%
Other housing arrangement	7.1%
Home owner	10.1%
Less than HS graduate	4.8% *
HS graduate	5.6% *
Some college or more	10.6%
10 years or less in U.S.	4.6% *
More than 10 years in U.S.	4.9% *
Born in U.S.	10.9%
LGBTQ	11.7%
Heterosexual/non-transgender	8.5%
Less than $25,000	6.4% *
$25,000-$49,999	6.1% *
$50,000 or more	12.6%
Out of Work	6.6%*
Other	5.5% *
Employed	10.6%

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Figure 268. Percent Adults Reporting Current Heavy Drinking, by Boston and Neighborhood, 2013, 2015, and 2017 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval; NA denotes where data are suppressed due to insufficient sample size

Figure 269. Percent Adults Reporting Current Heavy Drinking, by Boston and Over Time, 2010–2017
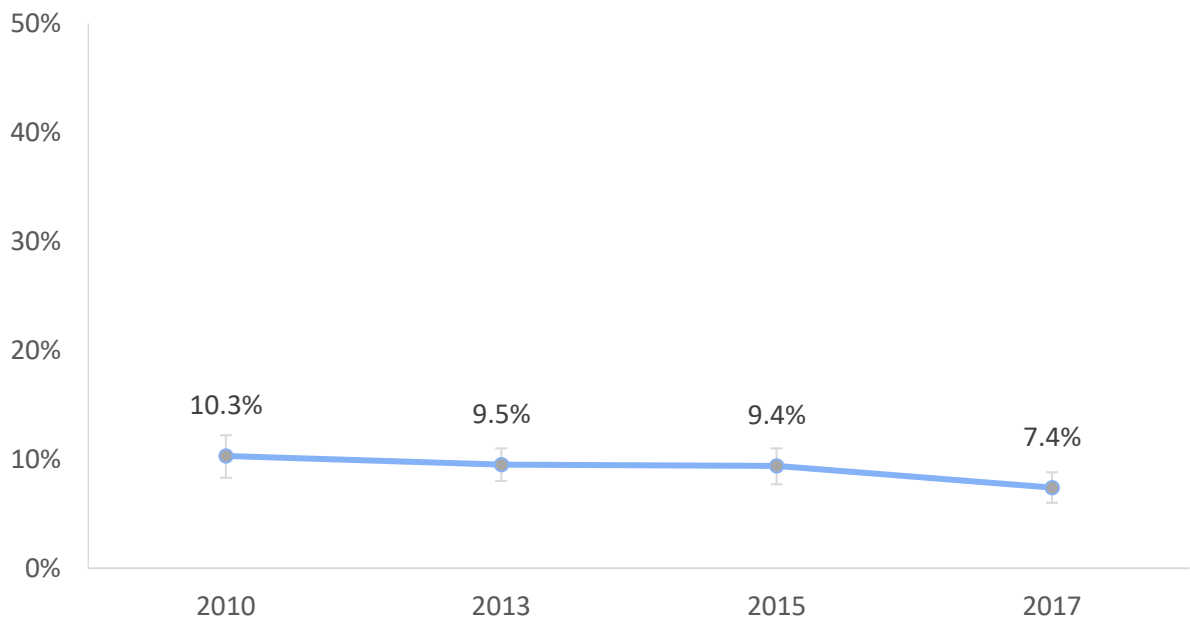
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Heavy drinking refers to >60 alcoholic drinks for males and >30 for females in past 30 days; Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

Figure 270. Percent Adults Reporting Binge Drinking, by Boston and Over Time, 2010–2017
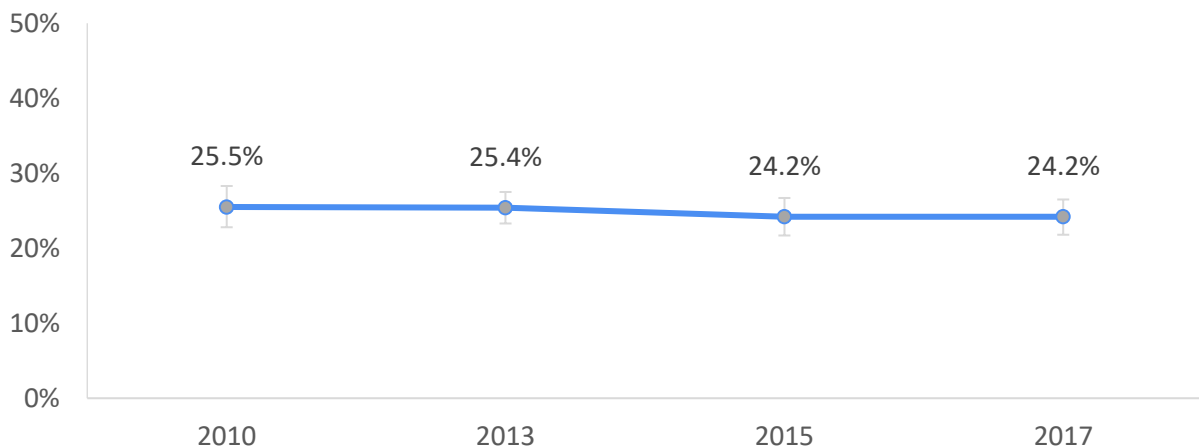
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Binge drinking is defined as having 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women; Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 271. Percent Adults Reporting Binge Drinking, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
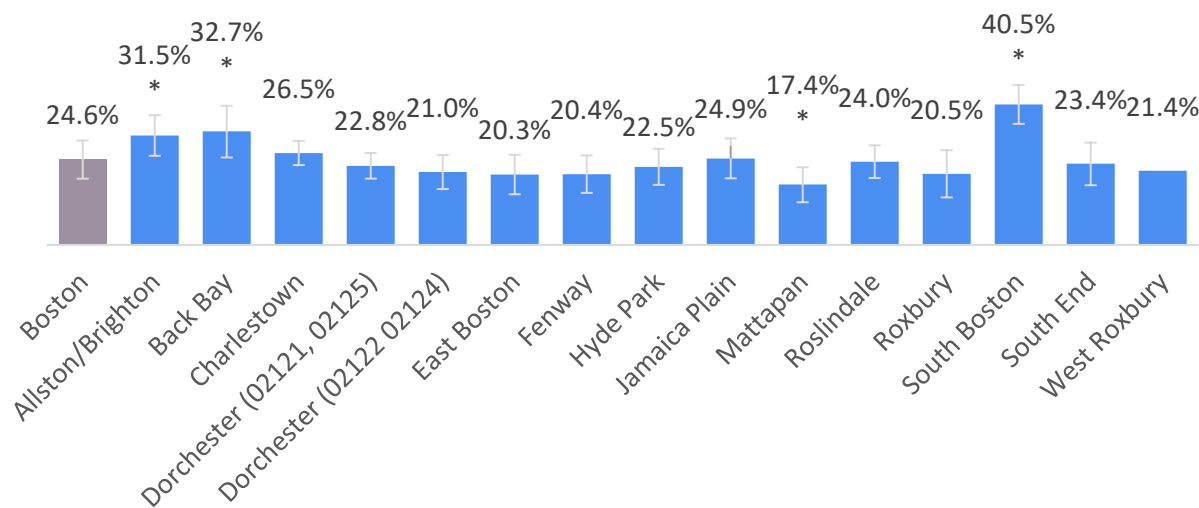
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Binge drinking is defined as having 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 272. Percent Boston High School Youth Reporting Current Alcohol Consumption, by Boston and Over Time, 2011–2017
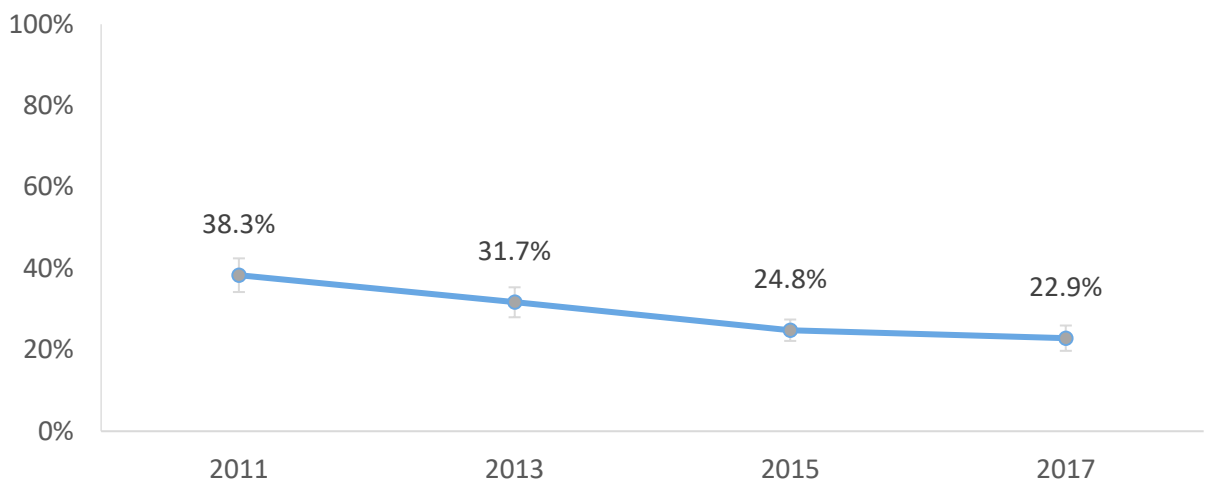
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Current alcohol consumption is defined as having an alcohol in the past 30 days; Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 273. Percent Boston High School Youth Reporting Binge Drinking, by Boston and Over Time, 2011–2017
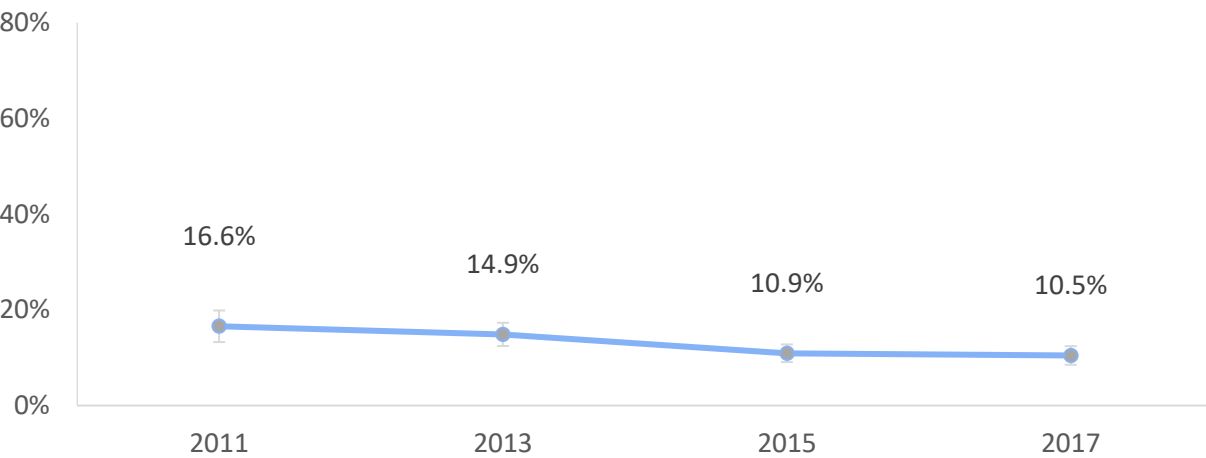
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Binge drinking is defined having 5 or more drinks of alcohol within a couple of hours at least once in the past 30 days; Error bars show 95% confidence interval; Change over time was statistically significant (decrease over time)

Figure 274. Alcohol Mortality Rate, by Boston and Gender, Age-Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016
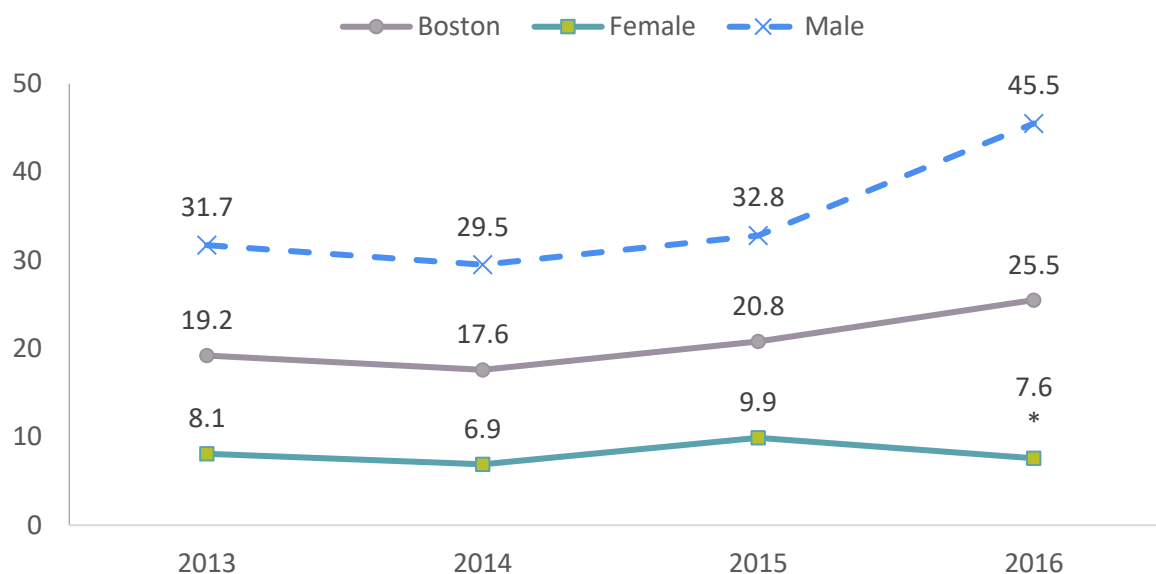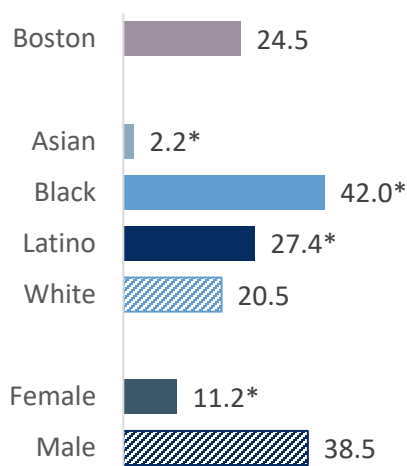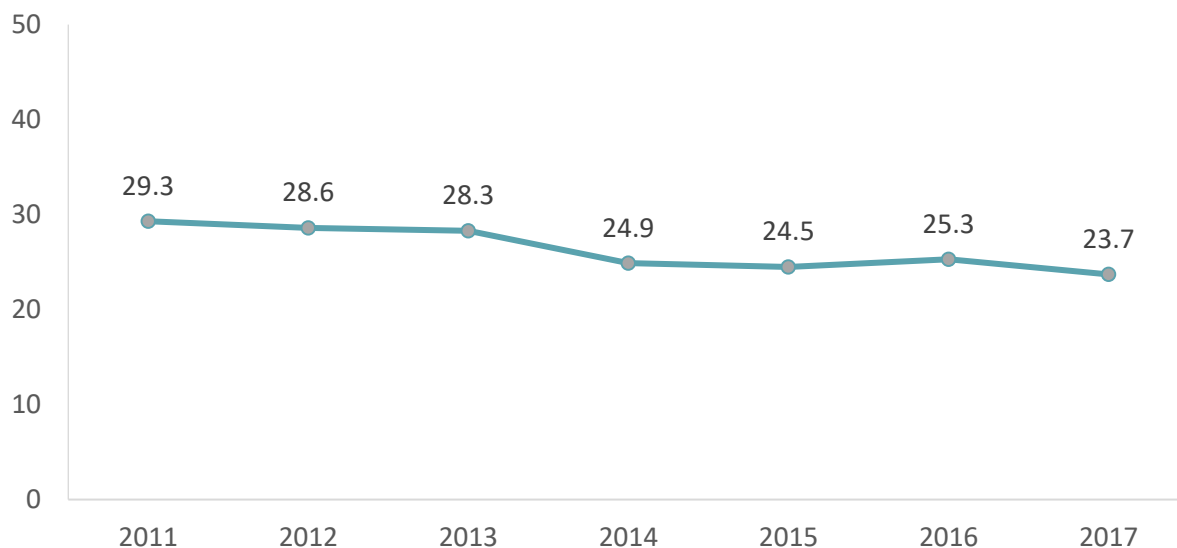

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Female for 2013 and 2014 are ≤ 20 and rates should be interpreted with caution; Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time) and Male (increase over time)

Figure 275. Unintentional Opioid Overdose Mortality Rate, by Boston and Gender, Age-Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time), Female (increase over time), and Male (increase over time)

Figure 276. Cocaine Overdose Hospital Patient Encounters, by Boston and Selected Indicators, Age–Adjusted Rate per 10,000 Residents 12 Years and Over, 2016–2017 Combined

DATA SOURCE: Massachusetts Center for Health Information and Analysis, Acute Hospital Case Mix Databases, 2016-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p<0.05); NA denotes insufficient sample size

Figure 277. Substance Misuse Mortality Rate, by Boston and Gender, Age–Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (increase over time), Female (increase over time), and Male (increase over time)

Figure 278. Substance Misuse (Excluding Fentanyl) Mortality Rate, by Boston and Gender, Age–Adjusted Rate per 100,000 Residents 12 Years and Over, 2013–2016

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2013-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Dashed line indicates reference group for statistical testing done for 2016 data; Asterisk (*) denotes where estimate was significantly different compared to reference group for 2016 data (p <0.05); Change over time was statistically significant for Boston (decrease over time) and Male (decrease over time)

Figure 279. Unique Alcohol Abuse Treatment Admission Rate, by Boston and Over Time, Age–Adjusted Rate per 10,000 Residents Aged 12+ Years, 2011–2017
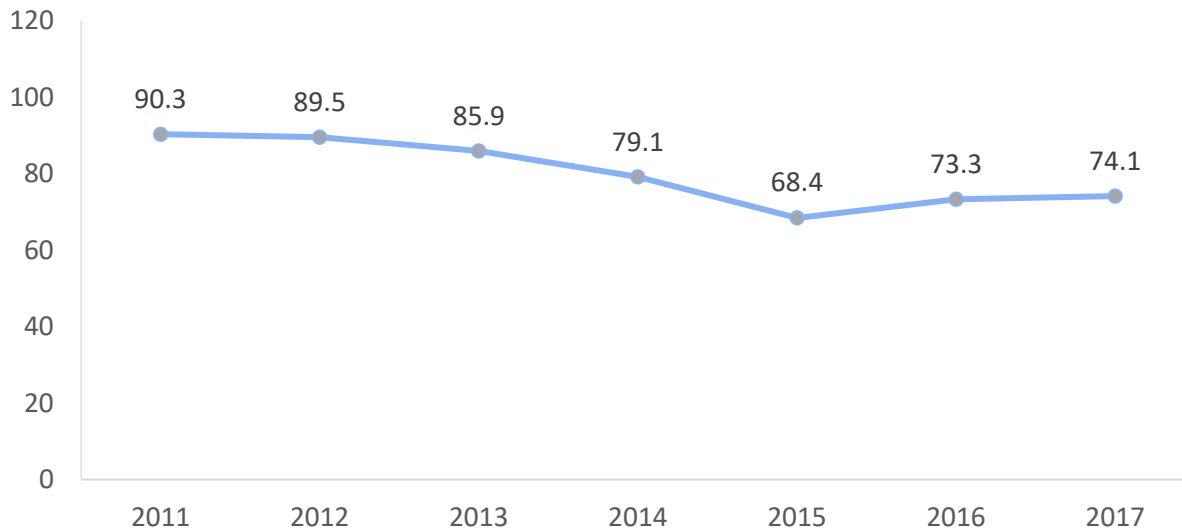
DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data represent treatment admissions for unique individuals; Change over time was statistically significant (decrease over time)

Figure 280. Unique Marijuana Abuse Treatment Admission Rate, by Boston and Selected Indicators, Age Adjusted Rate per 10,000 Residents, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2015-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data include admissions where marijuana was the primary, secondary, or tertiary drug; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 281. Unique Marijuana Abuse Treatment Admission Rate, by Boston and Over Time, Age–Adjusted Rate per 10,000 Residents Aged 12+ Years, 2011–2017


DATA SOURCE: Massachusetts Department of Public Health, Substance Abuse Services, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data represent treatment admissions for unique individuals; Change over time was statistically significant (decrease over time)

Violence and Trauma

Table 72. Percent Boston CHNA Survey Respondents Reporting Perceptions of Feeling Unsafe While Alone on Their Street at Night in Past 12 Months, by Selected Indicators, 2019

	Not a Problem	A Minor Problem	A Serious Problem
Race/Ethnicity			
Asian (N=297)	26.6%	53.9%	19.5%
Black (N=437)	37.8%	39.4%	22.9%
Latino (N=448)	29.9%	43.3%	26.8%
White (N=671)	40.5%	47.1%	12.4%
Other/Two or more (N=89)	40.5%	41.6%	18.0%
Age			
Under 18 years (N=198)	26.8%	49.5%	23.7%
18–24 years (N=138)	29.7%	47.8%	22.5%
25–44 years (N=708)	31.6%	49.0%	19.4%
45–64 years (N=456)	39.7%	44.5%	15.8%
65+ years (N=187)	50.8%	34.8%	14.4%
Gender Identity			
Female (N=1,271)	31.8%	48.6%	19.6%
Male (N=385)	46.8%	37.9%	15.3%
Non–binary/transgender (N=29)	34.5%	58.6%	6.9%
Educational Attainment			
HS graduate or less (N=464)	31.9%	42.9%	25.2%
Some college/certificate program (N=326)	34.7%	43.3%	22.1%
College graduate or more (N=842)	37.8%	48.8%	13.4%
Sexual Orientation			
Heterosexual/non–transgender (N=1,323)	35.5%	46.1%	18.4%
LGBTQ (N=233)	33.5%	49.4%	17.2%
Parent Status			
Parent of child under 18 (N=525)	34.1%	43.1%	22.9%
Not parent of child under 18 (N=1,176)	36.4%	46.9%	16.8%

DATA SOURCE: Boston CHNA Community Survey, 2019

Table 73. Percent Boston CHNA Survey Respondents Reporting Perceptions of Feeling Unsafe While Alone on Their Street at Night in Past 12 Months, by Selected Neighborhoods, 2019

	Not a Problem	A Minor Problem	A Serious Problem
Allston/Brighton (N=186)	54.3%	37.1%	8.6%
Chinatown (N=66)	19.7%	59.1%	21.2%
Dorchester (N=459)	24.8%	46.8%	28.3%
East Boston (N=166)	33.1%	43.4%	23.5%
Hyde Park (N=83)	38.6%	42.2%	19.3%
Jamaica Plain (N=178)	35.4%	50.0%	14.6%
Mattapan (N=85)	41.2%	35.3%	23.5%
Roslindale (N=128)	50.0%	43.8%	6.3%
Roxbury (N=147)	27.9%	41.5%	30.6%
South End (N=100)	23.0%	60.0%	17.0%

DATA SOURCE: Boston CHNA Community Survey, 2019

Table 74. Percent Boston CHNA Survey Respondents Reporting Perceptions of Gunshots in Their Neighborhood in Past 12 Months, by Selected Neighborhoods, 2019

	Not a Problem	A Minor Problem	A Serious Problem
Allston/Brighton (N=180)	85.0%	10.0%	5.0%
Chinatown (N=39)	35.9%	43.6%	20.5%
Dorchester (N=433)	28.2%	36.0%	35.8%
East Boston (N=147)	58.5%	28.6%	12.9%
Hyde Park (N=80)	61.3%	22.5%	16.3%
Jamaica Plain (N=177)	42.9%	37.3%	19.8%
Mattapan (N=83)	27.7%	28.9%	43.4%
Roslindale (N=127)	66.1%	31.5%	2.4%
Roxbury (N=147)	17.0%	38.8%	44.2%
South End (N=94)	45.7%	38.3%	16.0%

DATA SOURCE: Boston CHNA Community Survey, 2019

Table 75. Number of Violent and Property Crime Reported by the Boston Police Department, by BPD District, 2018

	Area	Violent Crime	Property Crime
A–1	Downtown	515	2,058
A–7	East Boston	219	436
A–15	Charlestown	103	225
B–2	Roxbury	789	1,713
B–3	Mattapan	534	965
C–6	South Boston	289	1,237
C–11	Dorchester	578	1,498
D–4	South End	462	3,122
D–14	Brighton	164	858
E–5	West Roxbury	115	396
E–13	Jamaica Plain	215	750
E–18	Hyde Park	176	547

DATA SOURCE: Boston Police Department, Crime Statistics, Part One Crime Data by District 12-31-2018, 2018
NOTES: Violent crime includes homicide, rape and attempted rape, robbery and attempted robbery, domestic and non-domestic aggravated assault; Property crime includes commercial burglary, residential burglary, other burglary, larceny from motor vehicle, other larceny, and auto theft

Figure 282. Homicide by Firearm Rate, by Boston and Over Time, Age–Adjusted Rate per 100,000 Residents, 2011–2016
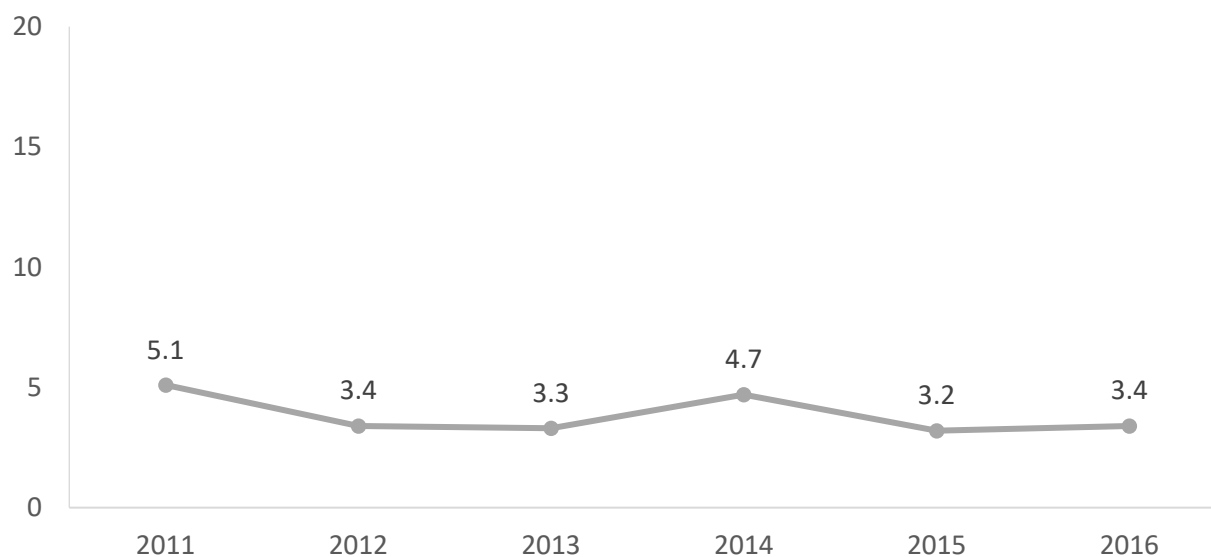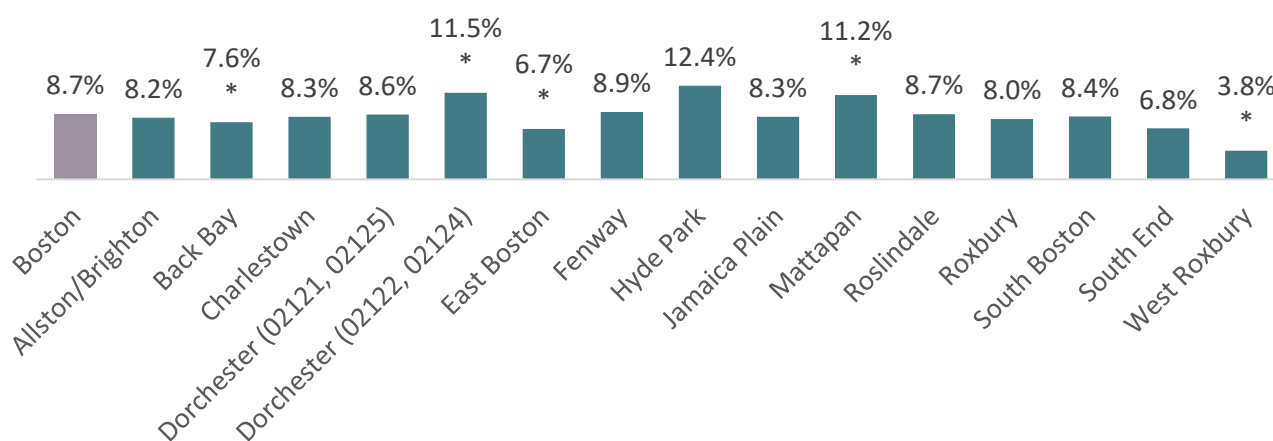

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2016
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was not statistically significant

Figure 283. Percent Adults Reporting Having Lived with a Caregiver with Substance Misuse as a Child (ACE), by Boston and Neighborhood, 2013, 2015, and 2017 Combined
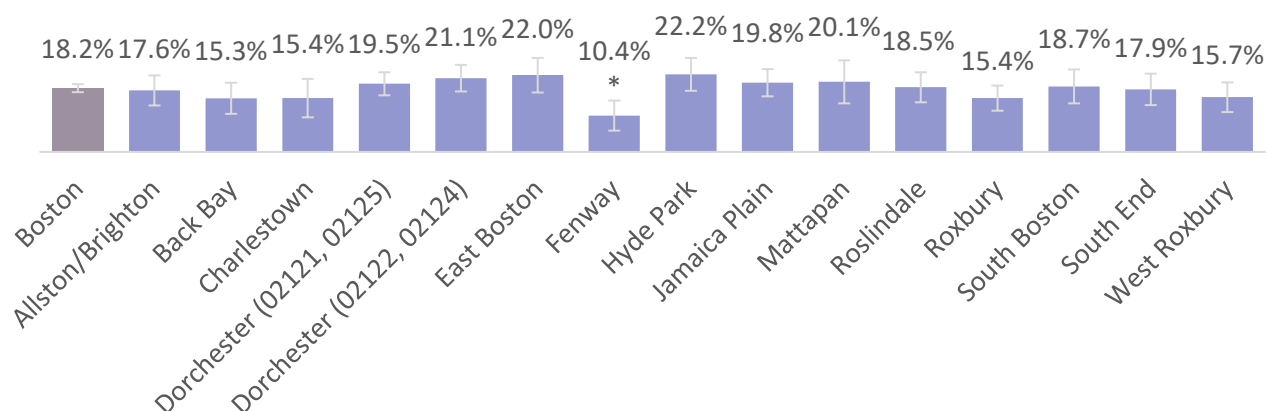
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 284. Percent Adults Reporting Having Lived with Someone Who Had Been in Prison (ACE), by Boston and Neighborhood, 2017
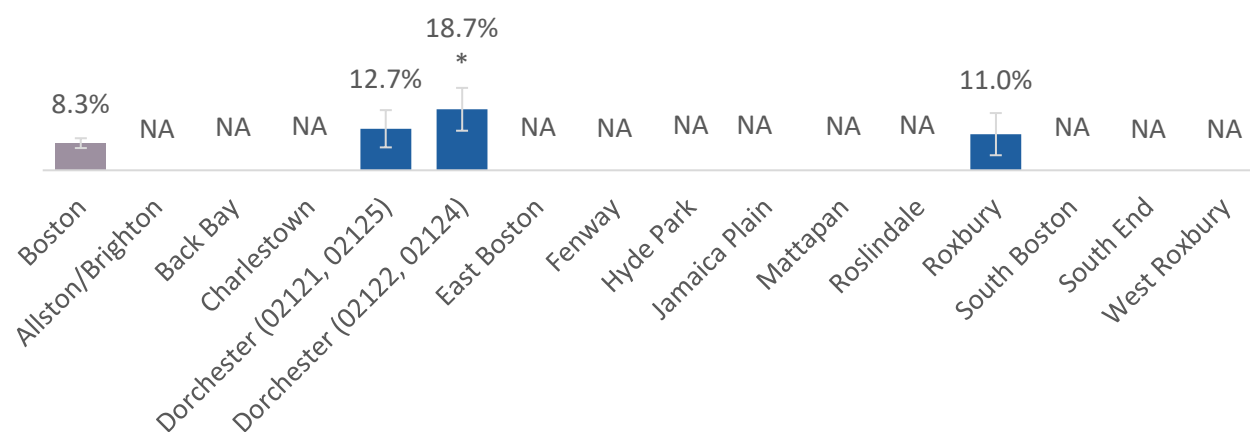
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval; NA denotes where data are suppressed due to insufficient sample size

Table 76. Percent Boston CHNA Survey Respondents Reporting Frequency of Adverse Childhood Experiences (ACEs) of Their Child, 2019

	Never	Rarely	Somewhat Often	Very Often
Financial strife (N=918)	37.0%	27.9%	23.6%	11.4%
Parental divorce/separation (N=909)	76.7%	6.1%	7.7%	9.6%
Parental death (N=909)	91.0%	3.6%	2.5%	2.9%
Parental incarceration (N=906)	90.6%	4.2%	3.2%	2.0%
Parental domestic violence (N=917)	86.2%	6.8%	5.2%	1.9%
Neighborhood violence (N=898)	61.4%	24.5%	9.5%	4.7%
Household mental illness (N=910)	82.2%	5.5%	8.1%	4.2%
Household substance abuse (N=915)	83.0%	8.9%	4.9%	3.3%
Bullying (N=897)	63.3%	22.2%	9.7%	4.8%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Percentage calculations do not include respondents who responded "don't know"

Figure 285. Boston Public High School Youth Reporting Being Electronically Bullied in the Past Year, by Boston and Over Time, 2011–2017

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months, they had been electronically bullied (including through texting, Instagram, Facebook, or other social media); Error bars show 95% confidence interval; Change over time was not statistically significant

Figure 286. Percent Boston Public High School Youth Reporting Being Bullied Because of Sexual Orientation in the Past Year, by Boston and Over Time, 2011–2017

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2011, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Students were asked if during the past 12 months, they had been electronically bullied (including through texting, Instagram, Facebook, or other social media); Error bars show 95% confidence interval; Change over time was not statistically significant

Maternal and Child Health

Figure 287. Birth Rate in Boston, by Age of Mother and Over Time, Age-Specific Rate per 1,000 Female Residents, 2011–2017
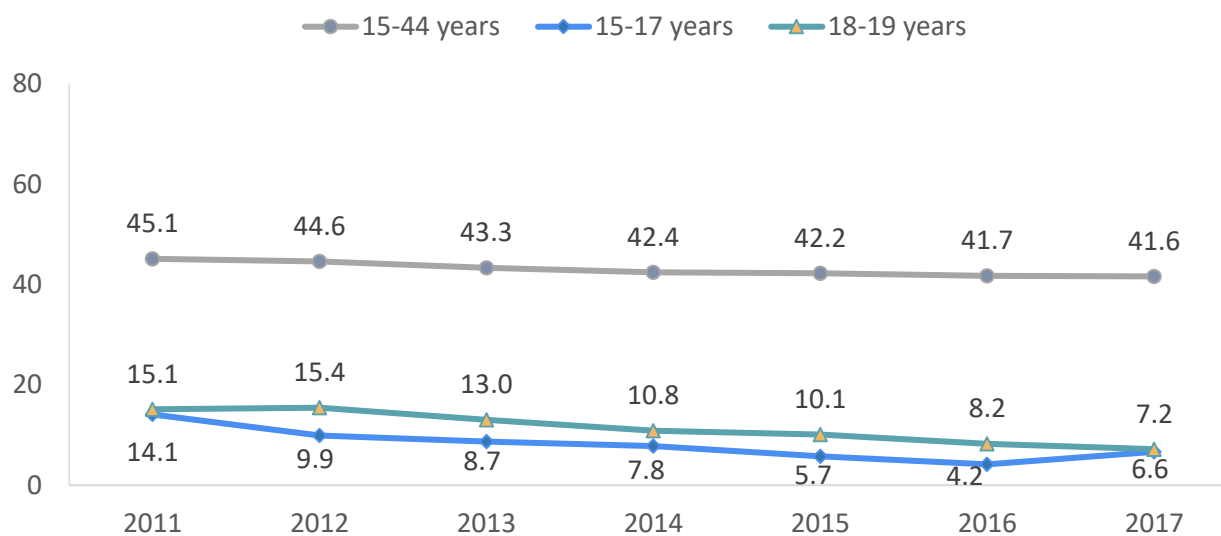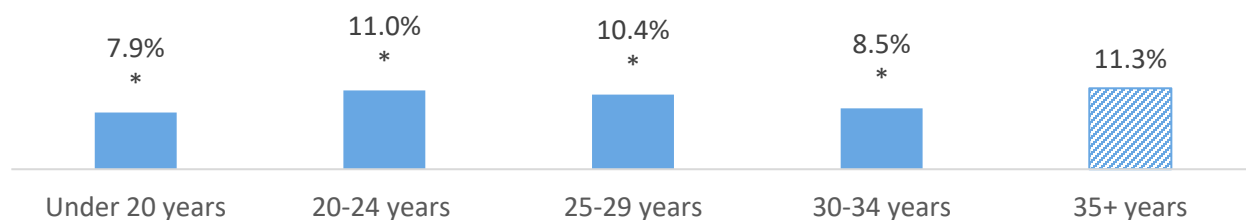

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was statistically significant for mothers aged 15-44 years (decrease over time), 15-17 years (decrease over time), and 18-19 years (decrease over time)

Figure 288. Birth Rate, by Boston and Race/Ethnicity, Age-Specific Rate per 1,000 Female Residents Aged 15–44 Years, 2017
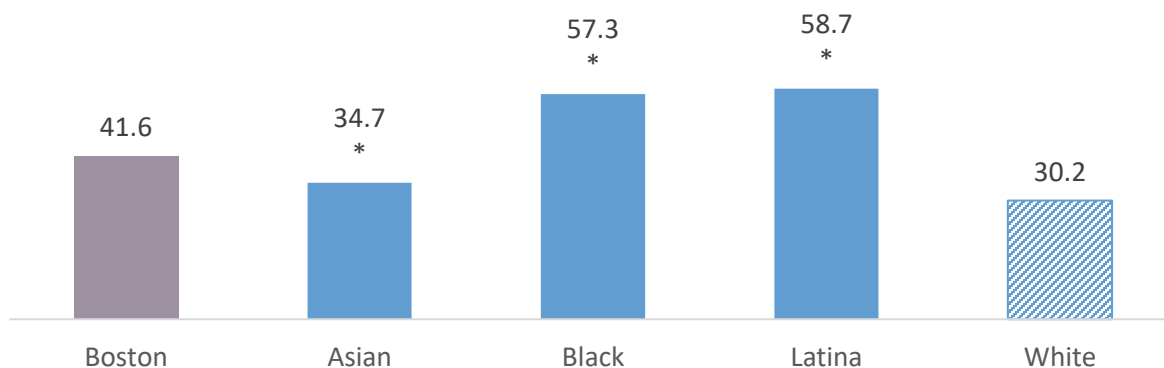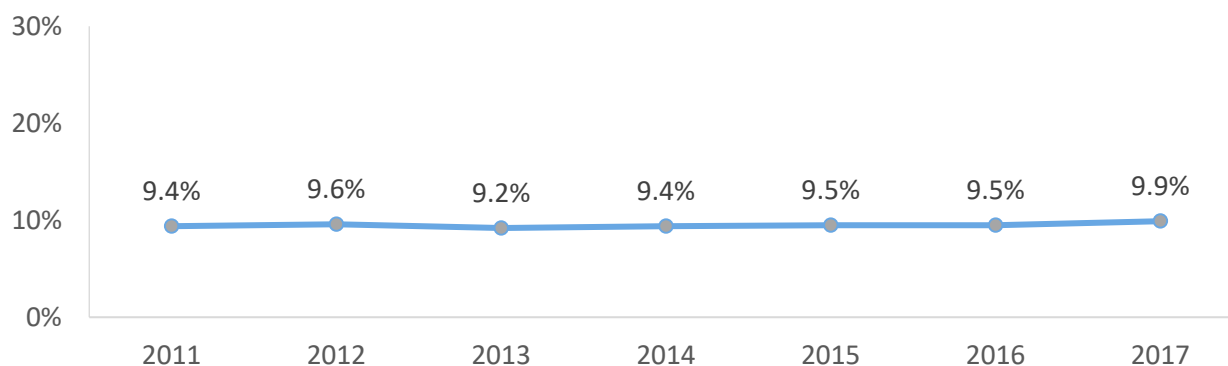

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

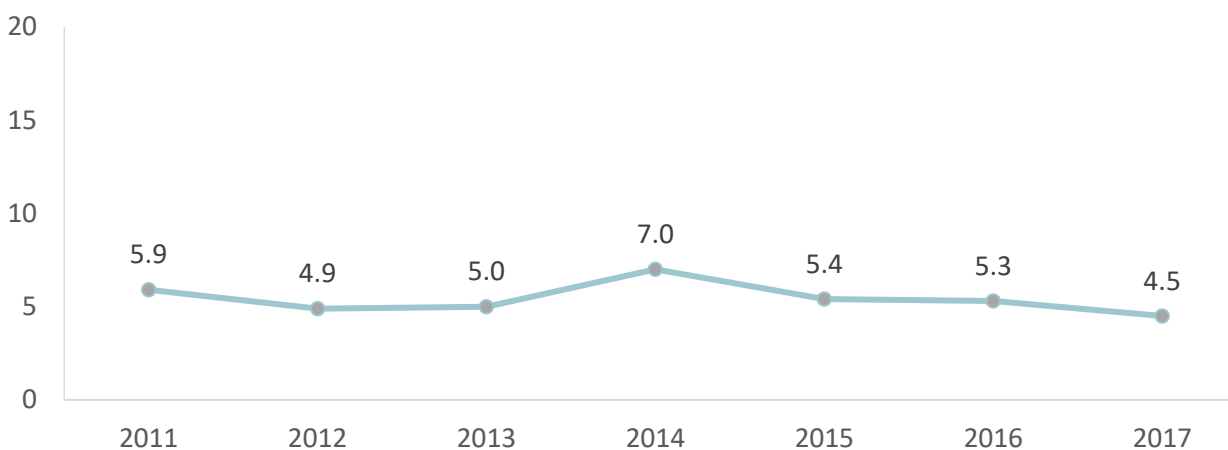Figure 289. Percent Low Birthweight Births, by Boston and Neighborhood, 2017

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Low birthweight is defined as weighing less than 5 pounds, 8 ounces; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 290. Percent Low Birthweight Births in Boston, by Age of Mother, 2017
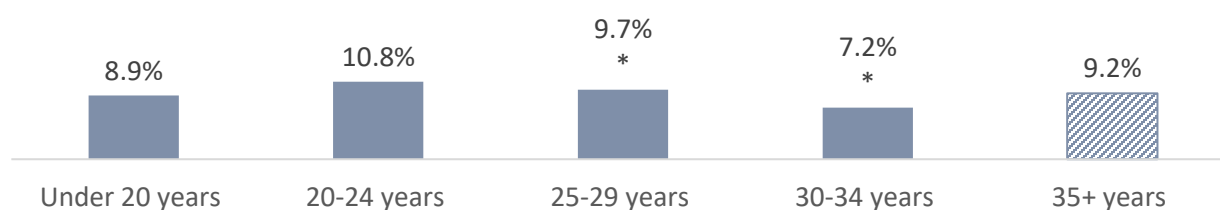
8.9%	10.8%	9.7% *	7.2% *	9.2%
Under 20 years	20-24 years	25-29 years	30-34 years	35+ years

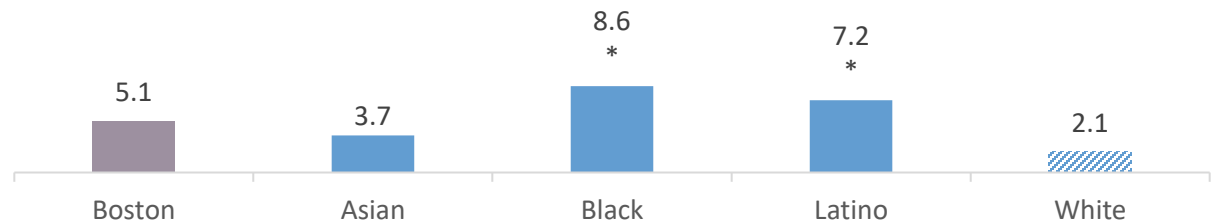DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Low birthweight is defined as weighing less than 5 pounds, 8 ounces; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 291. Percent Low Birthweight Births, by Boston and Over Time, 2011–2017
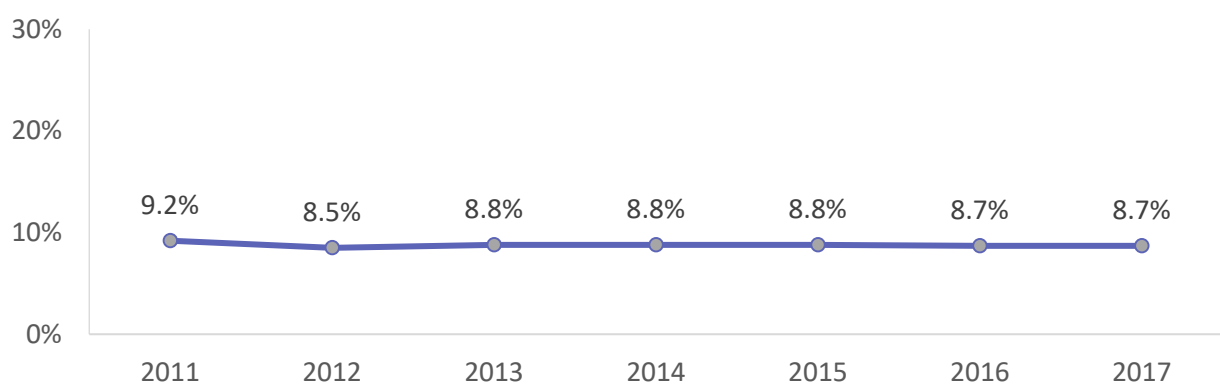
DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
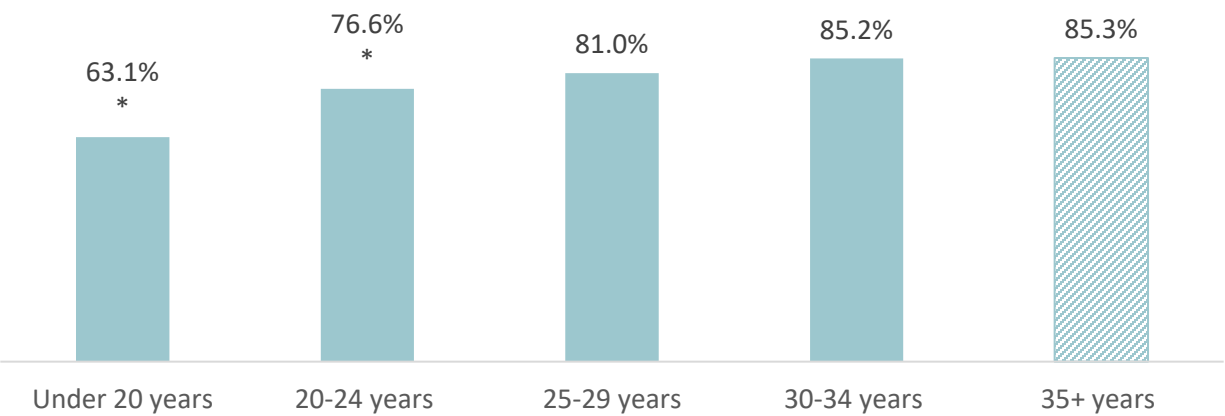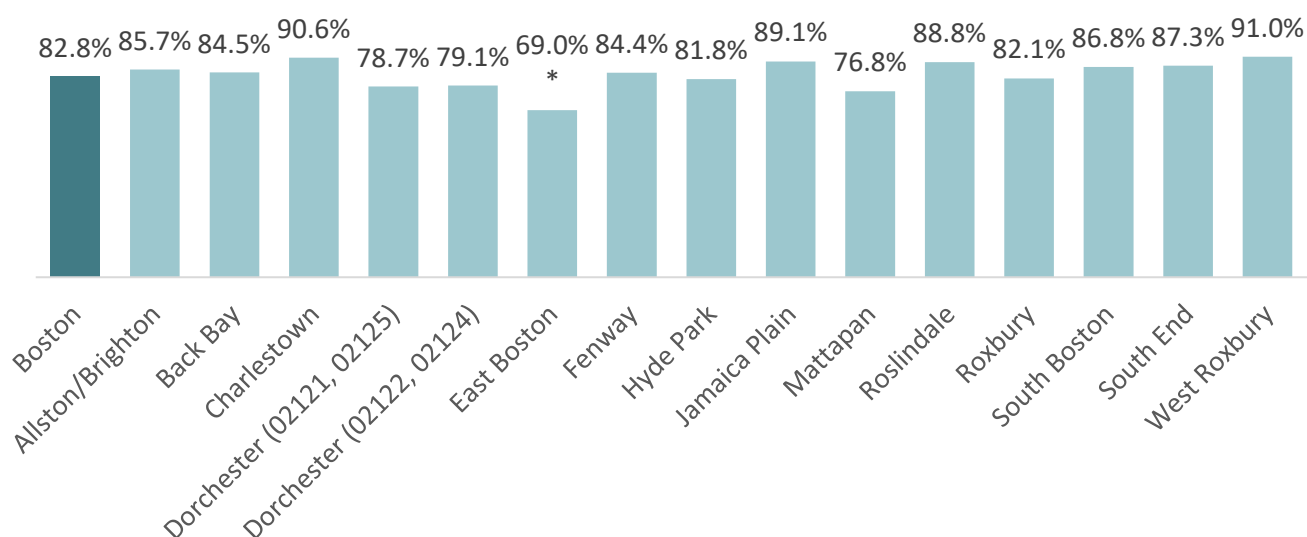DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Low birth weight is defined as weighing less than 5 pounds, 8 ounces; Change over time was not statistically significant

Figure 292. Percent Preterm Births, by Boston and Neighborhood, 2017
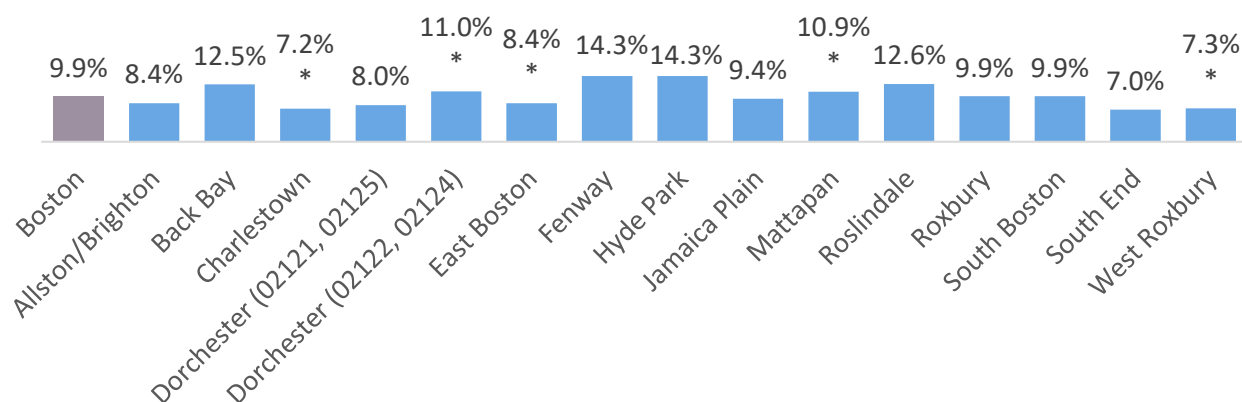
DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Preterm birth is defined as being born before 37 weeks of gestation; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 293. Percent Preterm Births in Boston, by Age of Mother, 2017

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Preterm birth is defined as being born before 37 weeks of gestation; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 294. Percent Preterm Births, by Boston and Over Time, 2011–2017

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Preterm birth is defined as being born before 37 weeks of gestation; Change over time was not statistically significant

Figure 295. Infant Mortality Rate, by Boston and Over Time, Rate per 1,000 Live Births, 2011–2017


DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was not statistically significant

Figure 296. Infant Mortality Rate, by Race/Ethnicity, Rate per 1,000 Live Births, 2015–2017 Combined

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Sample sizes for Asian and White are < 20 and rates should be interpreted with caution; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 297. Percent Mothers Who Received Adequate or Adequate Plus Care, by Age of Mother, 2017

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: According to the Kotelchuck Index for Prenatal Care, adequate prenatal care is defined as having 80-109.9% of expected visits for prenatal care and adequate plus prenatal care is defined as having 110% or more of expected visits; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 298. Percent Mothers who Received Adequate or Adequate Plus Care, by Boston and Neighborhood, 2017

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Live Births, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: According to the Kotelchuck Index for Prenatal Care, adequate prenatal care is defined as having 80-109.9% of expected visits for prenatal care and adequate plus prenatal care is defined as having 110% or more of expected visits; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Sexual Health

Figure 299. Percent Boston Public High School Youth Reporting Ever Having Sex, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined
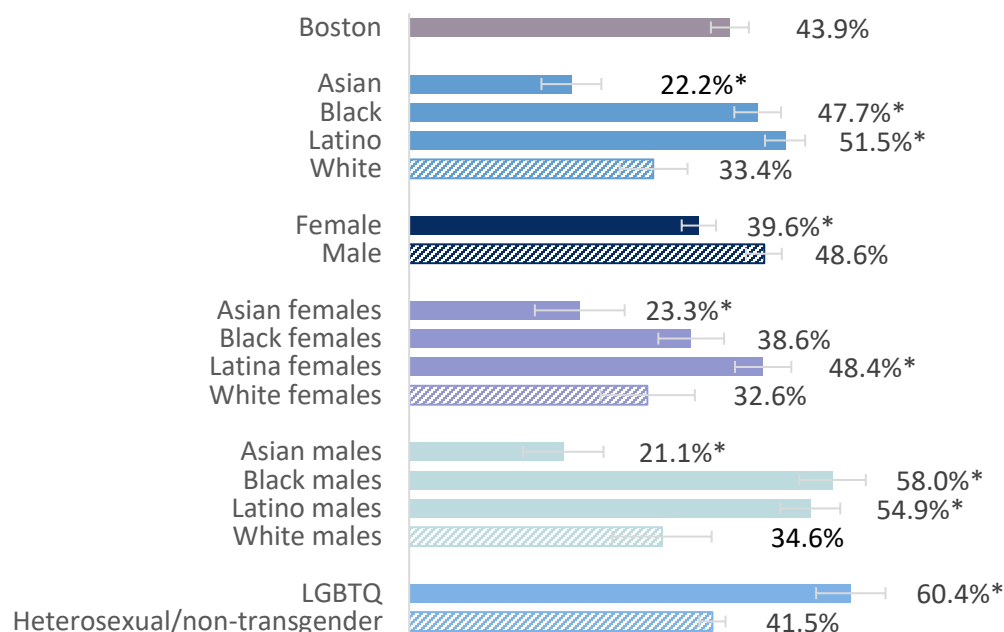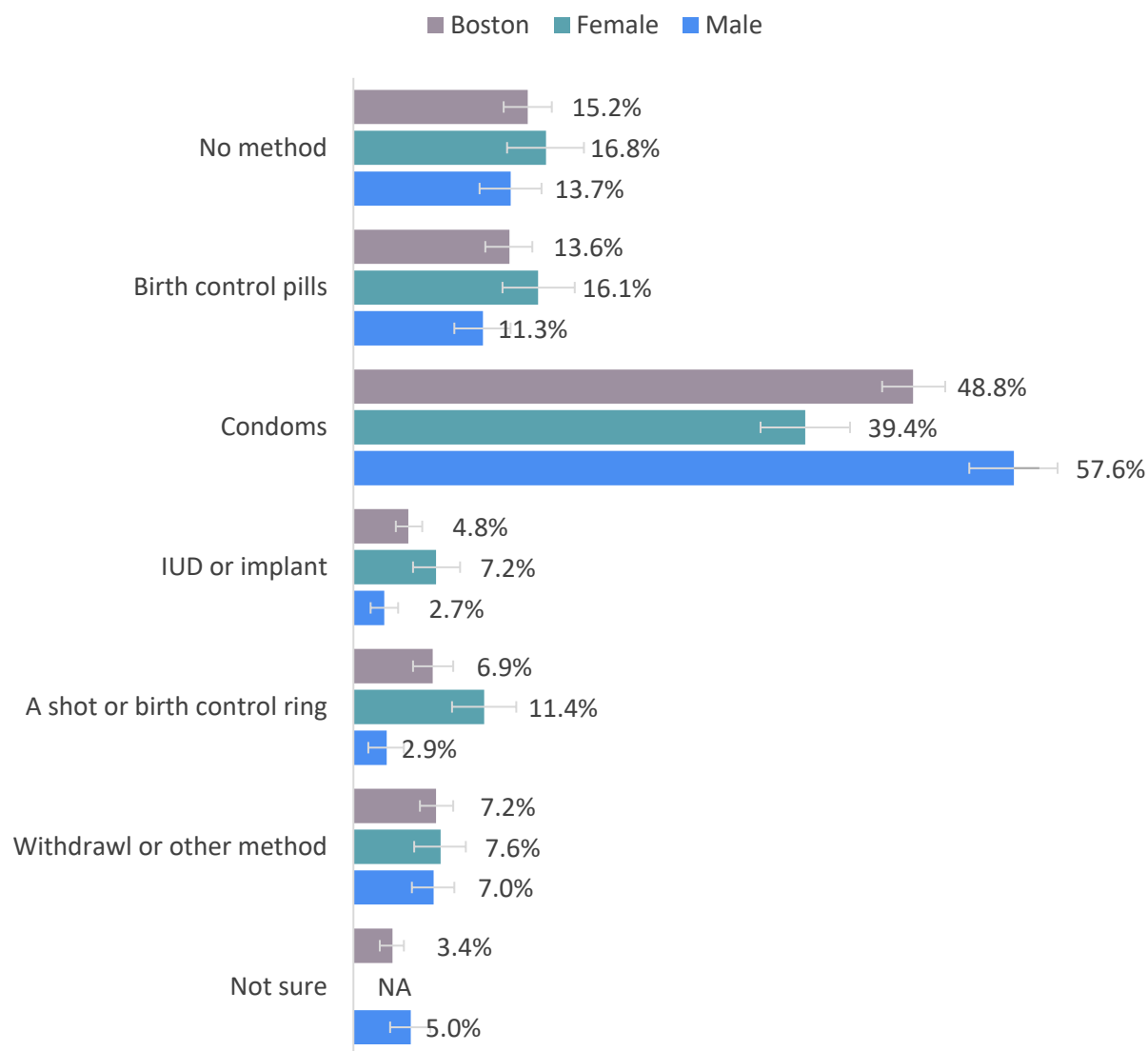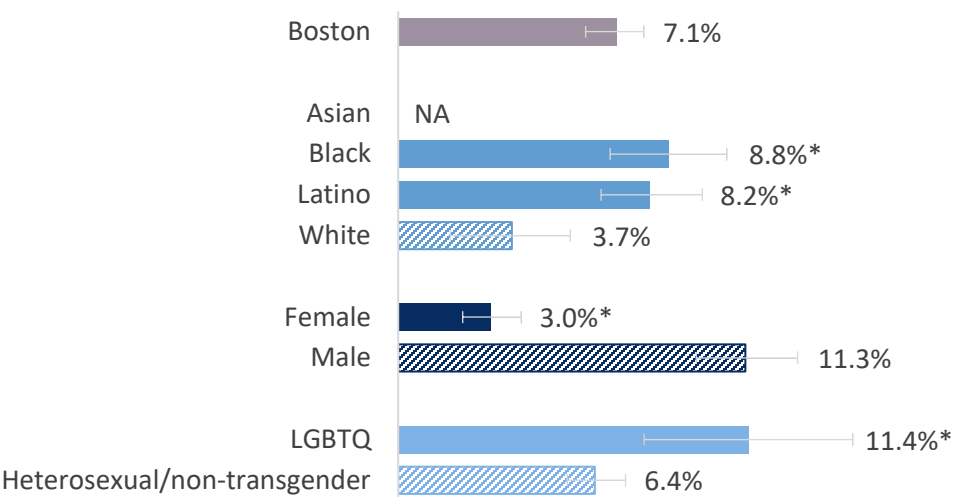

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval

Figure 300. Percent Boston Public High School Youth Reporting Using Condom During Last Time They Had Sex, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Category	Percent
Boston	61.9%
Asian	63.8%
Black	65.5%
Latino	59.3%
White	58.0%
Female	52.9%*
Male	70.2%
Asian females	NA
Black females	53.9%
Latina females	50.8%
White females	NA
Asian males	NA
Black males	74.4%
Latino males	68.3%
White males	NA
Gay/Bisexual males	66.6%
Heterosexual/non-transgender males	74.3%
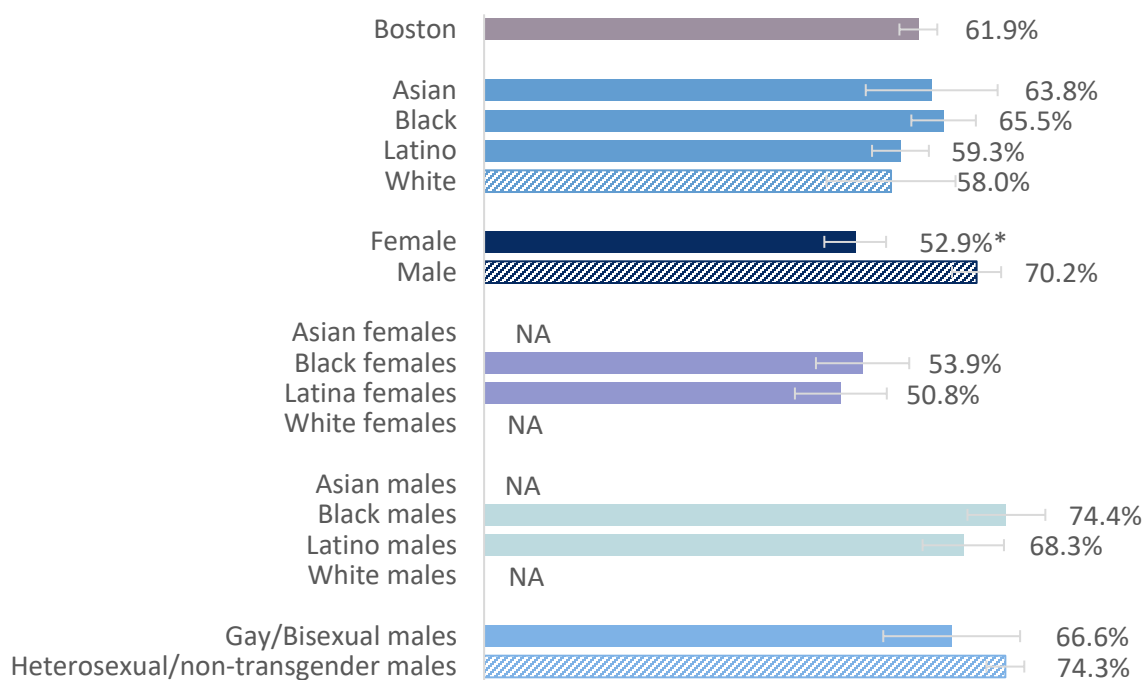
DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
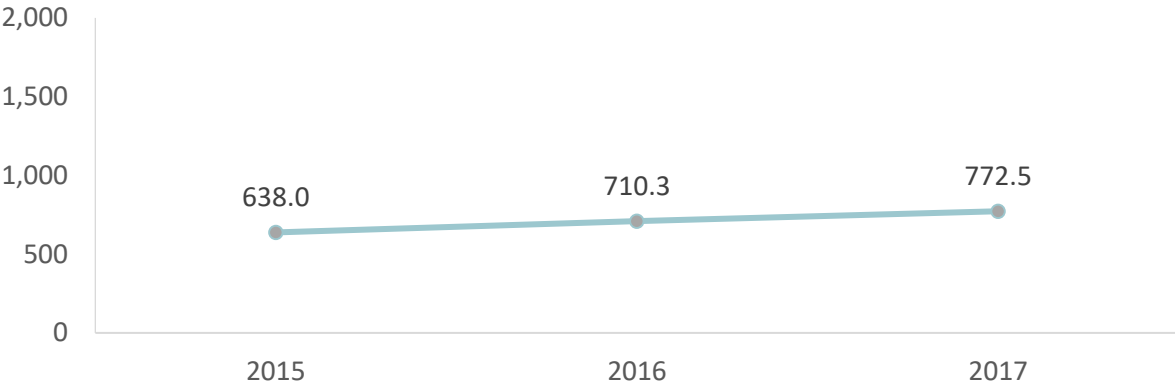DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: NA denotes where data are suppressed due to insufficient sample size; Data for gay/bisexual males and heterosexual/non-transgender males are 2009, 2011, 2013, 2015, and 2017 YRBS Combined; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05); Error bars show 95% confidence interval
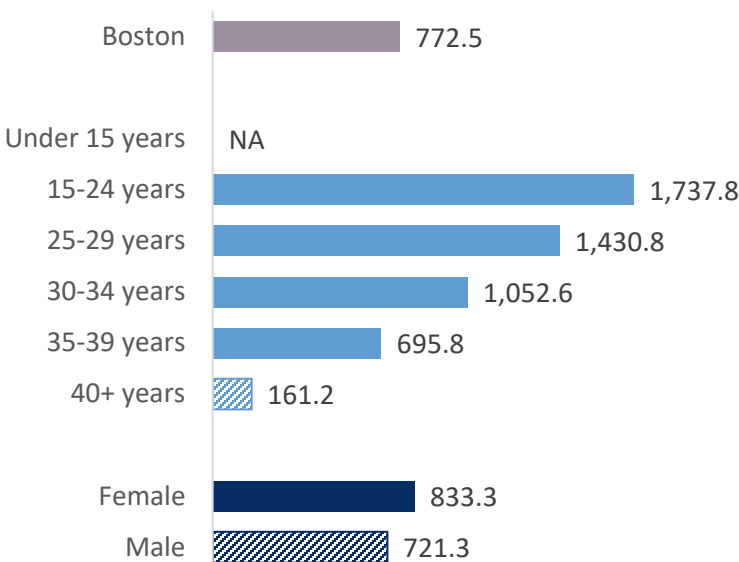
Figure 301. Percent Boston Public High School Youth Reporting Contraception Use During Last Time They Had Sex, by Boston and Sex, 2013, 2015, and 2017 Combined

■ Boston ■ Female ■ Male

No method
- 15.2%
- 16.8%
- 13.7%

Birth control pills
- 13.6%
- 16.1%
- 11.3%

Condoms
- 48.8%
- 39.4%
- 57.6%

IUD or implant
- 4.8%
- 7.2%
- 2.7%

A shot or birth control ring
- 6.9%
- 11.4%
- 2.9%

Withdrawl or other method
- 7.2%
- 7.6%
- 7.0%

Not sure
- 3.4%
- NA
- 5.0%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: NA denotes where data are suppressed due to insufficient sample size; Error bars show 95% confidence interval

Figure 302. Percent Boston Public High School Youth Reporting Ever Having Sex Before Age 13, by Boston and Selected Indicators, 2013, 2015, and 2017 Combined

Boston	7.1%
Asian	NA
Black	8.8%*
Latino	8.2%*
White	3.7%
Female	3.0%*
Male	11.3%
LGBTQ	11.4%*
Heterosexual/non-transgender	6.4%

DATA SOURCE: Centers for Disease Control and Prevention and Boston Public Schools, Youth Risk Behavior Survey, 2013, 2015, and 2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p<0.05); Error bars show 95% confidence interval; NA denotes insufficient sample size
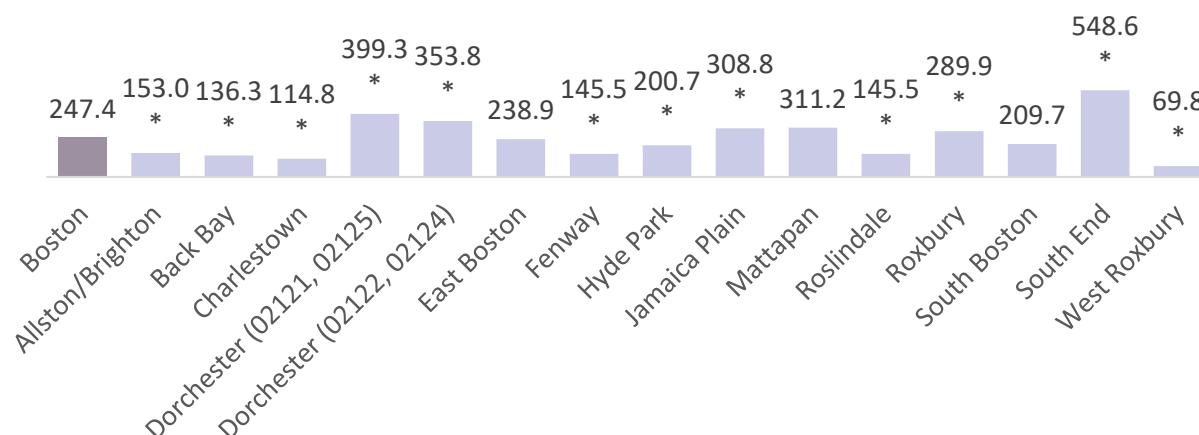
Figure 303. Chlamydia Incidence Rate, by Boston and Over Time, Age–Specific Rate per 100,000 Residents, 2015–2017

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, 2015-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and data are subject to change; 13% of cases were documented with a Boston residence, but did not have a designated zip code. These cases are excluded from this analysis; Change over time was statistically significant (increase over time)

Figure 304. Chlamydia Incidence Rate, by Boston and Selected Indicators, Age–Specific Rate per 100,000 Residents, 2017

| Category	Rate
Boston	772.5
Under 15 years	NA
15-24 years	1,737.8
25-29 years	1,430.8
30-34 years	1,052.6
35-39 years	695.8
40+ years	161.2
Female	833.3
Male	721.3

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and data are subject to change; 13% of cases were documented with a Boston residence, but did not have a designated zip code; Bars with pattern indicate reference group for its specific category; NA denotes insufficient sample size

Figure 305. Gonorrhea Incidence Rate, by Boston and Over Time, Age–Specific Rate per 100,000 Residents, 2015–2017

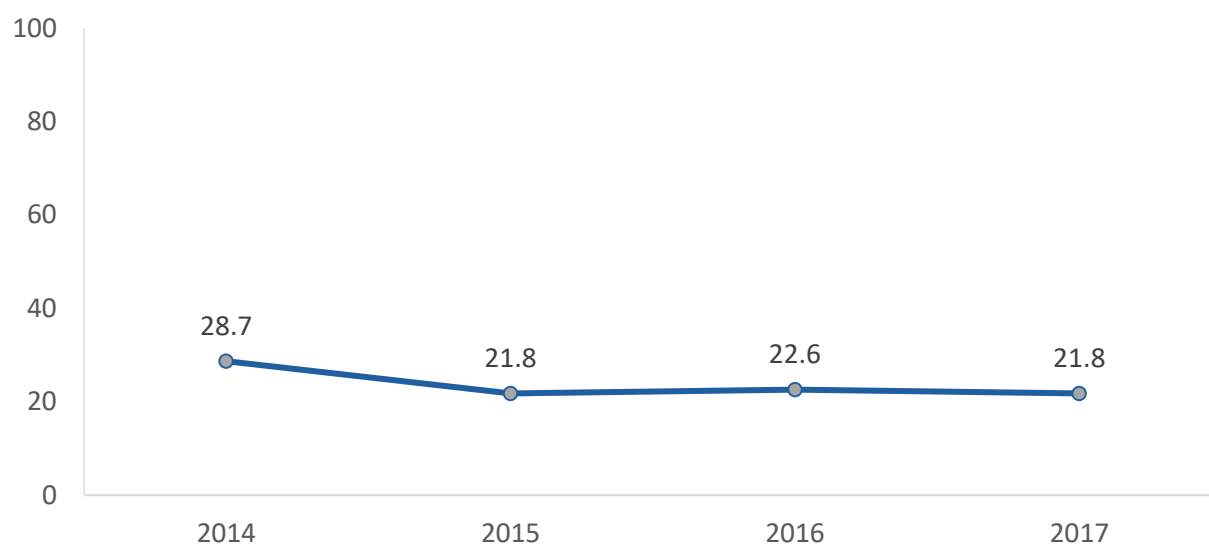| Year	Rate
2015	160.8
2016	185.8
2017	247.4

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, 2015-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and data are subject to change; 14% of cases were documented with a Boston residence, but did not have a designated zip code. These cases are excluded from this analysis; Change over time was statistically significant (increase over time)

Figure 306. Gonorrhea Incidence Rate, by Boston and Neighborhood, Age–Specific Rate per 100,000 Residents, 2017

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and data are subject to change; 14% of cases were documented with a Boston residence, but did not have a designated zip code; Sample sizes for Charlestown and West Roxbury are ≤ 20 and rates should be interpreted with caution; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05)

Figure 307. Gonorrhea Incidence Rate, by Boston and Selected Indicators, Age–Specific Rate per 100,000 Residents, 2017
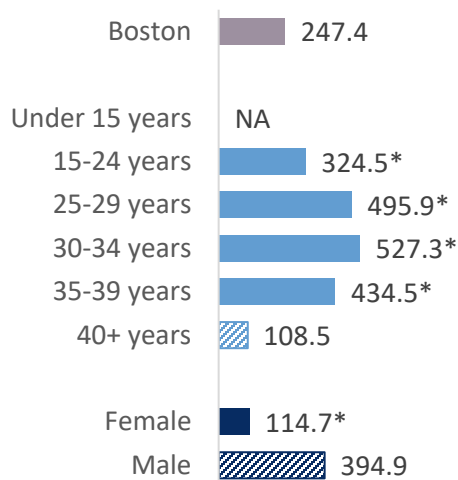
DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and data are subject to change; 14% of cases were documented with a Boston residence, but did not have a designated zip code; NA denotes where data are suppressed due to insufficient sample size; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Figure 308. HIV Incidence Rate, by Boston and Over Time, Age–Specific Rate per 100,000 Residents, 2014–2017
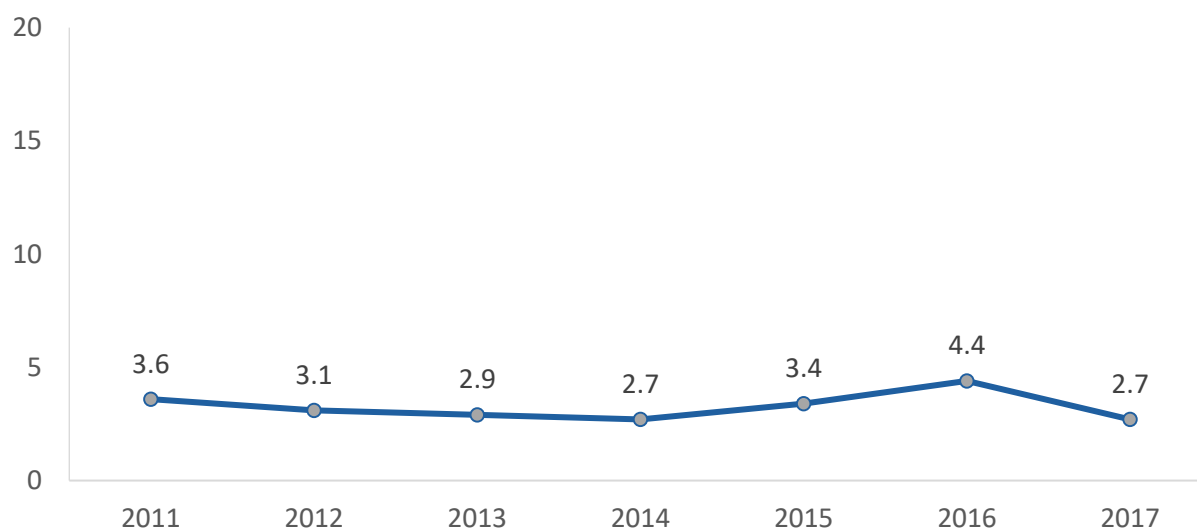

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS Surveillance Program, 2014-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTES: Data as of 1/1/2019 and are subject to change; Data do not include incarcerated individuals; Change over time was statistically significant (decrease over time)

Figure 309. HIV/AIDS Mortality Rate, by Boston and Over Time, Age–Adjusted Rate per 100,000 Residents, 2011–2017

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2011-2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was not statistically significant

Figure 310. HIV/AIDS Mortality Rate, by Boston and Selected Indicators, Age-Adjusted Rate per 100,000 Residents, 2015-2017 Combined
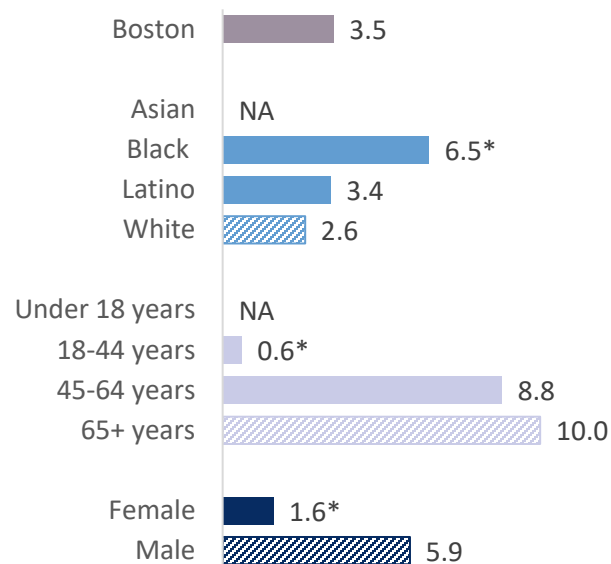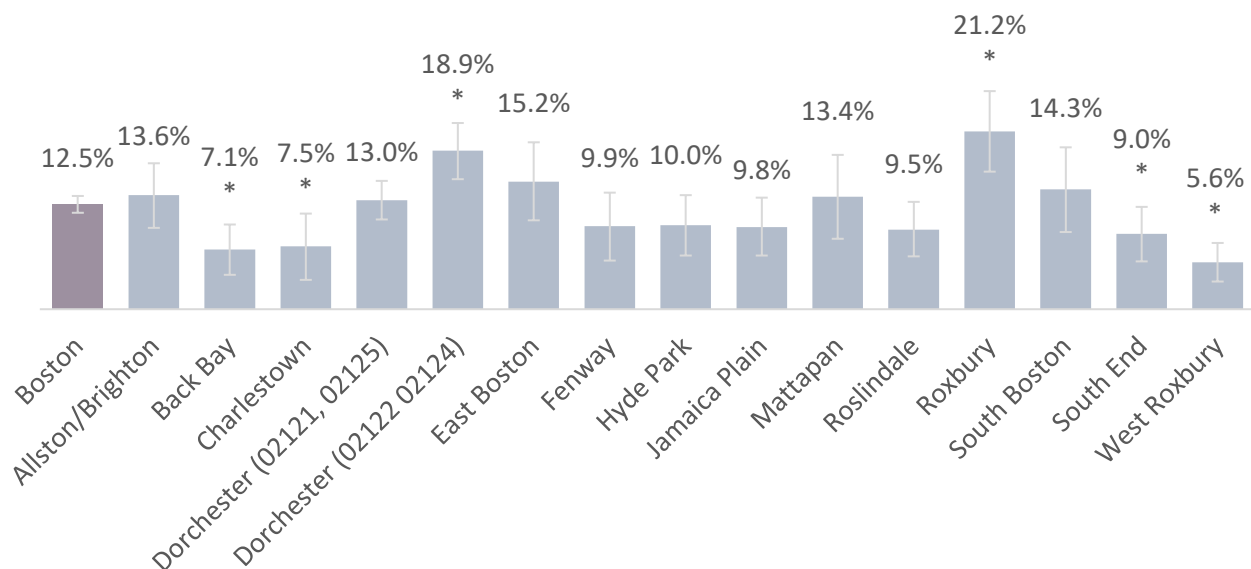

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 Combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: NA denotes where data are suppressed due to insufficient sample size; Sample sizes for Latino, White, 18-44 year age group, 65+ year age group, and female are ≤ 20 and rates should be interpreted with caution; Bars with pattern indicate reference group for its specific category; Asterisk (*) denotes where estimate was significantly different compared to reference group within specific category (p <0.05)

Environmental Health

Figure 311. Percent Adults Reporting Secondhand Smoke Exposure in the Home, by Boston and Neighborhood, 2013, 2015, 2017 Combined

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Table 77. Percent Boston CHNA Survey Respondents Reporting Environmental Health Concerns at Home, Work, or School, by All Respondents and Selected Neighborhoods, 2019

	Allston/ Brighton	Chinatown	Dorchester	East Boston	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South End
Tobacco smoke	160	39	386	139	65	139	77	104	120	88
Home	15.6%	20.5%	21.5%	13.0%	9.2%	12.2%	20.8%	12.5%	22.5%	18.2%
Work	10.0%	18.0%	18.1%	15.8%	9.2%	22.3%	15.6%	19.2%	12.5%	19.3%
School	6.9%	7.7%	12.4%	12.2%	9.2%	7.2%	10.4%	9.6%	9.2%	8.0%
Mold/mildew or water leaks	159	39	385	137	67	143	74	111	117	88
Home	23.9%	18.0%	21.8%	20.4%	14.9%	30.8%	28.4%	30.6%	23.1%	27.3%
Work	10.7%	7.7%	12.5%	8.8%	14.9%	19.6%	9.5%	22.5%	9.4%	9.1%
School	6.3%	0.0%	11.4%	8.0%	7.5%	8.4%	13.5%	13.5%	7.7%	10.2%
Inadequate heating and/or cooling	157	37	380	138	65	134	77	106	117	86
Home	25.5%	13.5%	23.7%	20.3%	12.3%	20.2%	22.1%	18.9%	24.8%	12.8%
Work	10.8%	13.5%	16.3%	10.1%	16.9%	22.4%	19.5%	20.8%	9.4%	10.5%
School	5.1%	5.4%	22.6%	13.8%	12.3%	12.7%	18.2%	22.6%	8.6%	15.1%
Bug and/or rodent infestation	156	37	383	138	66	137	75	107	119	85
Home	21.2%	13.5%	25.9%	21.0%	21.2%	23.4%	25.3%	21.5%	25.2%	31.8%
Work	16.0%	5.4%	15.9%	13.8%	16.7%	20.4%	17.3%	25.2%	4.2%	11.8%
School	5.8%	2.7%	15.9%	7.3%	18.2%	10.2%	13.3%	14.0%	9.2%	10.6%
Lead in paint, lead or other contaminants in drinking water	243	71	535	199	101	203	102	157	185	120
Home	7.8%	2.8%	7.7%	7.0%	4.0%	14.3%	6.9%	7.6%	6.5%	10.8%
Work	1.7%	2.8%	4.7%	4.5%	6.9%	8.4%	8.8%	9.6%	0.5%	4.2%
School	2.5%	4.2%	12.5%	4.0%	5.0%	8.4%	10.8%	9.6%	5.4%	10.8%

	Allston/ Brighton	Chinatown	Dorchester	East Boston	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South End
Poor indoor air quality	158	38	388	137	65	138	75	107	115	91
Home	19.6%	10.5%	16.8%	17.5%	20.0%	20.3%	25.3%	21.5%	20.0%	23.1%
Work	13.3%	10.5%	17.3%	13.9%	18.5%	26.8%	17.3%	29.0%	10.4%	12.1%
School	3.8%	0.0%	13.4%	9.5%	7.7%	12.3%	12.0%	12.2%	7.8%	8.8%
No or not working smoke detectors	156	37	374	136	65	130	73	98	114	85
Home	9.0%	5.4%	11.8%	7.4%	9.2%	13.9%	11.0%	11.2%	7.0%	5.9%
Work	0.6%	2.7%	5.1%	5.2%	1.5%	1.5%	11.0%	4.1%	0.0%	1.2%
School	1.3%	0.0%	5.1%	3.7%	3.1%	1.5%	6.9%	7.1%	2.6%	2.4%
Outdoor noise pollution from vehicles	162	45	379	140	66	141	74	108	115	90
Home	37.7%	44.4%	35.1%	32.9%	36.4%	41.1%	29.7%	40.7%	49.6%	57.8%
Work	21.0%	8.9%	23.0%	17.9%	21.2%	25.5%	24.3%	28.7%	27.0%	20.0%
School	9.3%	4.4%	19.0%	15.0%	12.1%	9.9%	23.0%	16.7%	9.6%	15.6%
Outdoor air pollution from vehicles	161	40	387	141	67	142	74	111	114	88
Home	35.4%	40.0%	35.7%	37.6%	41.8%	43.7%	27.0%	42.3%	43.0%	43.2%
Work	24.2%	10.0%	27.7%	22.7%	23.9%	32.4%	25.7%	34.2%	29.8%	23.9%
School	9.3%	2.5%	24.0%	15.6%	14.9%	9.9%	16.2%	14.4%	12.3%	15.9%
Dangerous traffic	164	45	383	131	67	146	74	108	116	89
Home	34.2%	22.2%	30.6%	29.8%	28.4%	41.1%	23.0%	40.7%	39.7%	44.9%
Work	32.3%	13.3%	28.7%	27.5%	29.9%	50.0%	29.7%	40.7%	37.1%	24.7%
School	10.4%	13.3%	22.5%	18.3%	10.5%	15.1%	24.3%	16.7%	19.0%	11.2%

	Allston/ Brighton	Chinatown	Dorchester	East Boston	Hyde Park	Jamaica Plain	Mattapan	Roslindale	Roxbury	South End
Industry, toxic waste, pesticides, etc.	152	37	375	134	64	130	71	102	111	86
Home	4.6%	8.1%	11.2%	7.5%	4.7%	9.2%	11.3%	9.8%	8.1%	8.1%
Work	4.6%	5.4%	11.7%	6.7%	6.3%	6.9%	16.9%	9.8%	7.2%	8.1%
School	2.0%	0.0%	9.3%	5.2%	1.6%	5.4%	9.9%	4.9%	2.7%	7.0%
Airport or airplane noise or vibrations	153	38	377	143	66	135	72	104	112	89
Home	6.5%	7.9%	13.3%	58.7%	10.6%	23.7%	8.3%	29.8%	18.8%	25.8%
Work	1.3%	2.6%	6.9%	11.2%	3.0%	6.7%	5.6%	5.8%	4.5%	5.6%
School	0.7%	0.0%	5.6%	14.0%	0.0%	2.2%	9.7%	4.8%	3.6%	4.5%
More severe storms	157	35	373	139	65	138	72	102	110	88
Home	22.3%	5.7%	21.2%	28.8%	18.5%	31.9%	23.6%	26.5%	19.1%	22.7%
Work	10.8%	2.9%	12.9%	14.4%	12.3%	23.9%	15.3%	17.7%	14.6%	15.9%
School	5.1%	0.0%	9.4%	9.4%	1.5%	10.1%	13.9%	6.9%	3.6%	9.1%
Extreme outdoor heat or cold	154	34	382	137	65	136	75	104	113	86
Home	32.5%	11.8%	27.0%	27.0%	24.6%	36.8%	24.0%	36.5%	27.4%	30.2%
Work	18.8%	11.8%	16.8%	16.8%	16.9%	26.5%	24.0%	29.8%	20.4%	22.1%
School	9.1%	5.9%	15.5%	11.0%	9.2%	14.0%	17.3%	16.4%	8.0%	15.1%
Neighborhood flooding	151	35	376	138	66	128	74	99	110	86
Home	9.9%	5.7%	13.0%	26.8%	12.1%	9.4%	13.5%	15.2%	6.4%	5.8%
Work	5.3%	2.9%	6.9%	14.5%	4.6%	10.2%	6.8%	12.1%	4.6%	4.7%
School	1.3%	0.0%	3.7%	9.4%	1.5%	3.1%	10.8%	1.0%	0.9%	3.5%

DATA SOURCE: Boston CHNA Community Survey, 2019
NOTE: Respondents were allowed to select multiple response options; therefore, percentages may not sum to 100%

Health Care Access and Utilization

Figure 312. Percent Adults Reporting Having a Personal Doctor or Health Care Provider, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
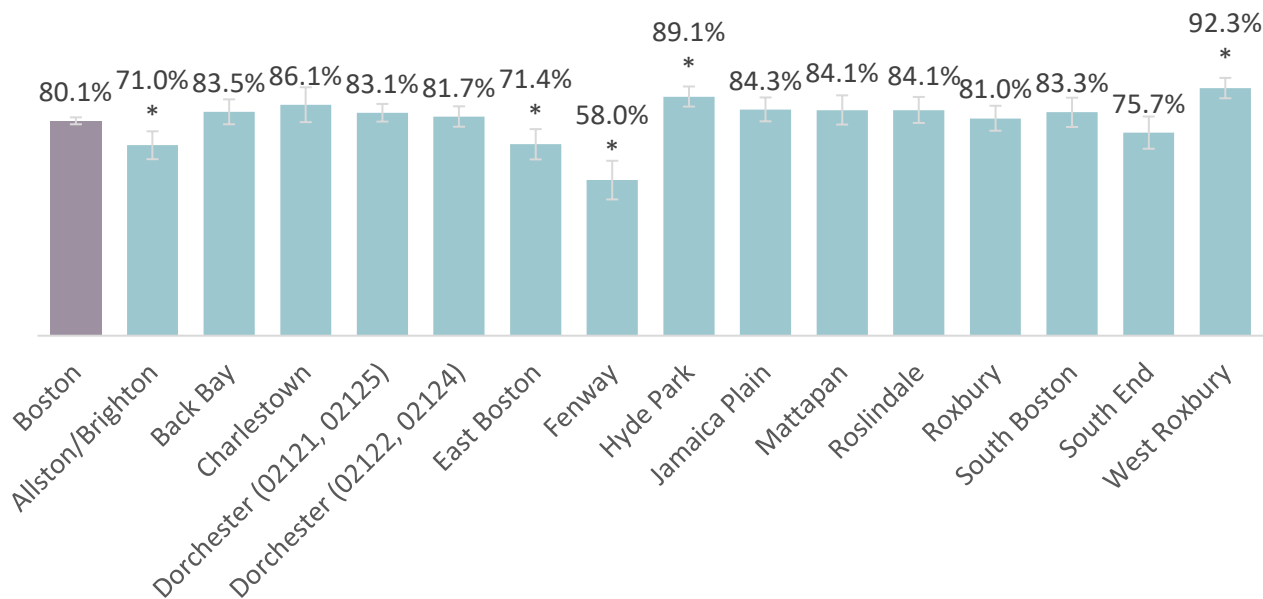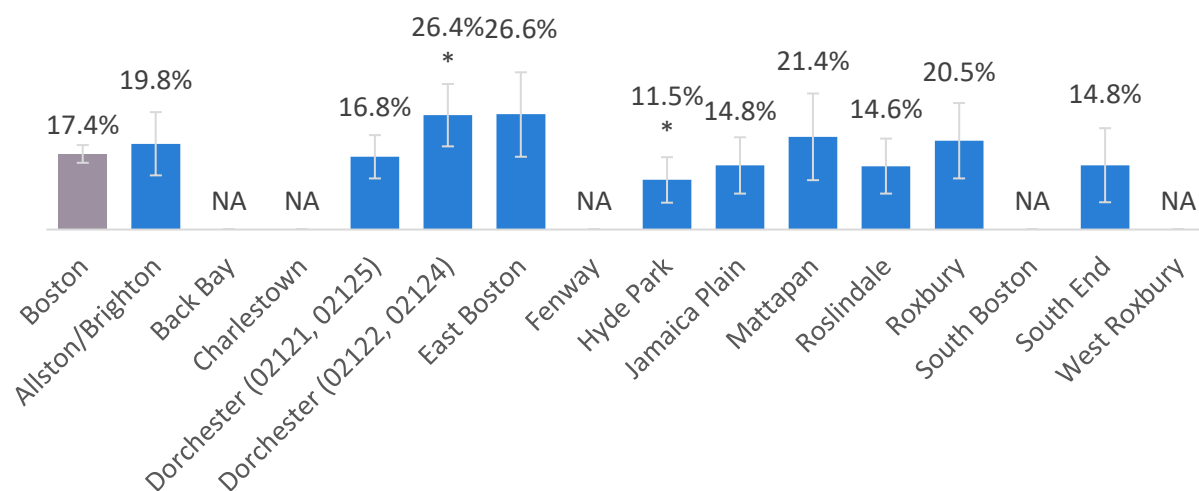

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 313. Percent Adults Reporting Could Not Afford to See Doctor in the Past 12 Months, by Boston and Over Time, 2010–2017
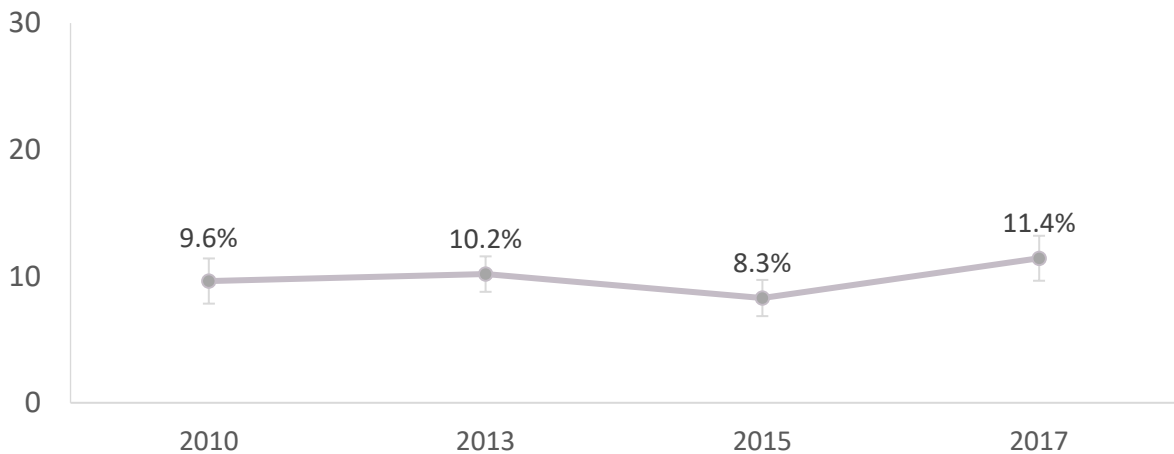
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2010, 2013, 2015, and 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: Change over time was not statistically significant

Figure 314. Percent Adults Reporting Could Not Afford to See Doctor in the Past 12 Months, by Boston and Neighborhood, 2013, 2015, and 2017 Combined
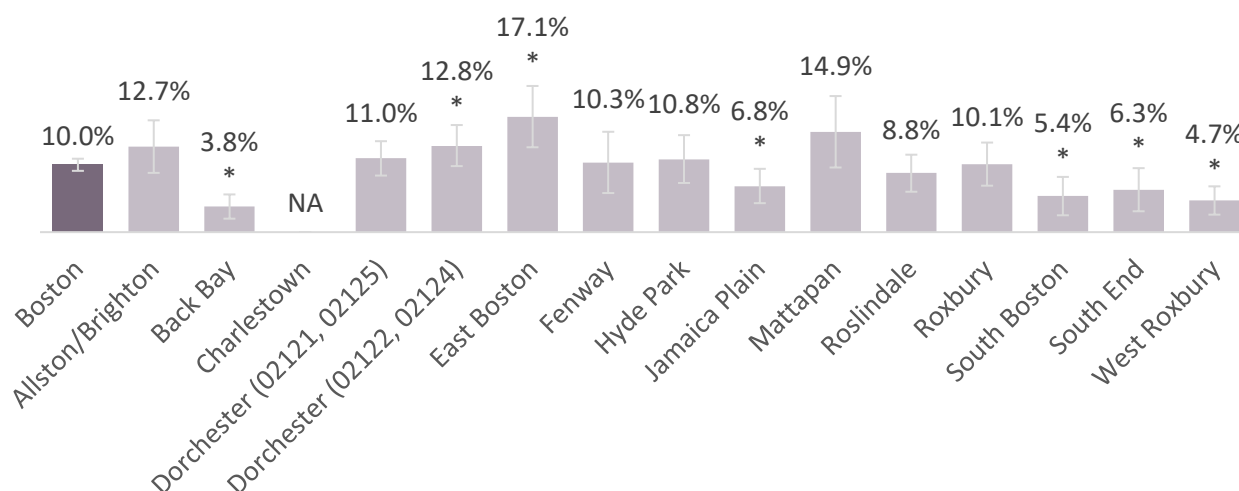
DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: NA denotes where data are suppressed due to insufficient sample size; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Figure 315. Percent Adults Reporting Could Not Afford Dental Care in the Past Year, by Boston and Neighborhood, 2017

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2017
DATA ANALYSIS: Boston Public Health Commission, Research and Evaluation Office
NOTE: NA denotes where data are suppressed due to insufficient sample size; Asterisk (*) denotes where neighborhood estimate was significantly different compared to the rest of Boston (p < 0.05); Error bars show 95% confidence interval

Table 78. Percent of Boston CHNA Survey Respondents who Have Someone as Their Personal Doctor or Health Care Provider, by Primary Language Spoken

	All Respondents (N=1,775)	Chinese (N=132)	English (N=1,566)	Haitian Creole (N=49)	Portuguese (N=47)	Spanish (N=327)	Vietnamese (N=74)
One person	66.1%	76.5%	65.9%	61.2%	70.2%	64.8%	56.8%
More than one person	21.5%	11.4%	22.6%	24.5%	17.0%	20.2%	20.3%
None	12.3%	12.1%	11.5%	14.3%	12.8%	15.0%	23.0%

DATA SOURCE: 2019 Boston CHNA Survey

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2019

North Suffolk Community Health Needs Assessment

A Note of Acknowledgment to the Collaborators and the North Suffolk Communities

In September of 2018, residents, health systems, community partners, and city and town leadership embarked on the first-ever collaborative Community Health Needs Assessment for the City of Chelsea, the City of Revere and the Town of Winthrop—communities that make up the North Suffolk region.

As part of this unprecedented collaboration, over 1,800 people who live or work in these three communities completed community health and quality of life surveys--online or on paper (in English, Spanish, Portuguese, and Arabic) and participated in focus groups and key informant interviews. This effort saw engaged, and sustained participation from collaborating provider organizations, municipal officials, health departments, boards of health, and community-based organizations. We believe the following detailed integrated Community Health Needs Assessment (iCHNA) report, which includes the voices of historically marginalized community members and populations, captures the current state of health and quality of life in Chelsea, Revere, and Winthrop and maps out the priorities for the creation of our Community Health Implementation Plan (CHIP).

We wish to thank major service provider organizations and coalitions--Massachusetts General Hospital, Cambridge Health Alliance, Beth Israel Deaconess Medical Center, Melrose-Wakefield Hospital, East Boston Neighborhood Health Center, Community Action Programs Inter-City, The Neighborhood Developers, North Suffolk Mental Health Association, Mystic Valley Elder Services, Revere CARES, Healthy Chelsea, Community Action for Safe Alternatives (Winthrop)--for their willingness to join in this unique year-long collaboration. In particular, we'd like to recognize Mass General's Center for Community Health Improvement, who generously supplied their expertise and countless staff hours to coordinate and facilitate dozens of iCHNA committee meetings and activities.

The enthusiastic participation of all involved reflects our shared desire to understand our communities better and find ways to improve residents' health and quality of life. This report would not have been possible without the leadership support of Chelsea City Manager Tom Ambrosino, Revere Mayor Brian Arrigo, and Winthrop Town Manager Austin Faison. We are extremely grateful to everyone and look forward to working together to implement plans and initiatives that grow out of the iCHNA & CHIP.

Jeffrey R. Stone   Danelle Marable
Director   Sr. Director, Evaluation, Assessments, & Coalitions
North Suffolk Public Health Collaborative   MGH Center for Community Health Improvement

Co-Coordinators
Integrated Community Health Needs Assessment & Community Health Improvement Plan

Contents

Introduction

In response to a request from the Mayor of Revere, the City Manager of Chelsea and the Town Manager of Winthrop, provider organizations serving residents of the three communities came together for the first time to conduct a collaborative and integrated 2019 community health needs assessment and develop a Community Health Improvement Plan (iCHNA & CHIP). Hospitals and other health and human services providers periodically conduct such assessments within their service areas to guide planning and comply with government requirements. Working together in several committees, representatives from the three communities and service providers collected and analyzed primary and secondary data for the iCHNA. The goal was to gain a comprehensive regional understanding of needs related to health and quality of life and identify priority concerns to help guide planning for services and potential opportunities for joint action initiatives. Issue areas that have emerged in 2019 as priorities include housing, behavioral health and substance use disorders, and economic stability and mobility. Information about the iCHNA & CHIP partners and the community outreach process can be found at www.northsuffolkassessment.org. A video summarizing the process can be found at https://youtu.be/FvSAn8dzu2A.
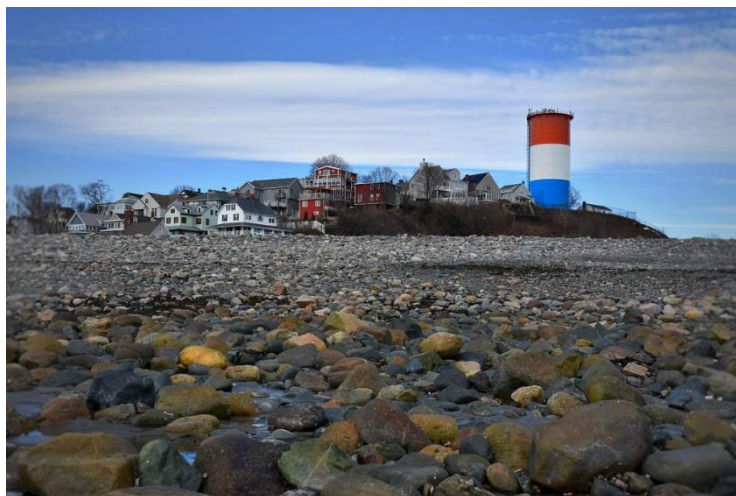
Executive Summary

Neighboring Communities Request Regional Assessment

Several hospital systems, a large community health center, and a number of other health and human services agencies serve residents of Revere, Chelsea, and Winthrop. These service providers conduct periodic assessments of community needs in order to plan accordingly for delivery of services. The Affordable Care Act also requires health care institutions to conduct CHNAs every three years in communities where they have licensed facilities to demonstrate they have engaged with local communities to ascertain needs, especially the needs of underserved populations within their service or catchment areas. Ordinarily, each provider conducts its own assessment--not in conjunction with other service providers.

The 2019 integrated Community Health Needs Assessment and Community Health Improvement Plan, or iCHNA and CHIP, represent a departure from the usual manner in which hospitals and other providers conduct assessments. At the request of the Mayor, City Manager, and Town Manager, of Revere, Chelsea and Winthrop, hospitals and other providers agreed to work together with the municipalities and other health stakeholders to conduct a fully collaborative assessment. This request was a natural extension of an inter-municipal collaboration created in 2016, the North Suffolk Public Health Collaborative, so named because the three communities comprise the portion of Suffolk County that is not the City of Boston.

Existing Collaborative Serves as Coordinating Entity

The North Suffolk Public Health Collaborative (NSPHC) was created so that three adjacent communities could identify shared public health challenges and opportunities to collaborate and achieve more on selected issues than the communities might achieve working on their own. The communities share some common characteristics and while having significant differences in demographics and specific health issues. Like much of the country, all three communities have populations that have become increasingly ethnically diverse, which is an important factor for consideration in planning for health care and human services. The NSPHC director co-

coordinated the iCHNA and CHIP with a senior director at the Center for Community Health Improvement of Massachusetts General Hospital, one of the hospital system collaborators.

Development of Structure and Goals

- The iCHNA and CHIP were developed through a deliberate, inclusive process, starting with the formation of a Steering Committee composed of municipal leaders and representatives of the three communities' health departments and boards of health, along with the health and human services providers and community residents. A Memorandum of Understanding (MOU) was created which the municipalities and collaborating organizations were asked to sign. Language in the MOU addressed the vision and goals of the process.

- iCHNA Collaborative Vision -To use the upcoming iCHNA and CHIP to work towards a North Suffolk region where:
    o Individuals from all backgrounds and circumstances will have every opportunity to live a healthy life.
    o Local governments, health care providers, social service and community-based organizations, and community residents work in continuous partnership to improve health outcomes for all people in the region.
    o Key findings developed from the iCHNA and CHIP will be provided to iCHNA collaborative organizations to aid implementation of subsequent iCHNA and CHIP initiatives.
- Goals of the iCHNA Collaborative:
    o Conduct and complete a joint, participatory iCHNA for Revere, Chelsea, and Winthrop by September 30, 2019.
    o Develop an iCHNA Collaborative CHIP for Revere, Chelsea, and Winthrop that addresses priorities and identifies opportunities for shared investment and programming by the partners for the period of 2019-2021.
    o Monitor and evaluate CHIP strategies for progress and impact to continuously inform implementation.
    o Communicate to, and engage in the process with, municipal and organizational leadership, community stakeholders, and the public throughout the assessment, planning, and implementation period.
    o Create iCHNA and CHIP reports that will, at a minimum, meet IRS, Attorney General, Accountable Care Organization (ACO), Public Health Accreditation Board (PHAB), Determination of Need (DoN), and Health Resources and Services Administration (HRSA) requirements.

To plan and conduct the iCHNA process through its multiple phases, the Steering Committee created several subcommittees--Instrument Review, Community Engagement, Data Analysis --and working groups were then created to develop CHIP initiatives around priority issues that emerged from the assessment. Throughout the entire process, participation on the various committees and in the working groups was enthusiastic and productive, which is a testament to the collaborative spirit of the participants and their commitment to the wellbeing of residents of the three communities.

Emphasis on Inclusion and Recognition of Social Determinants of Health

From the outset of the iCHNA and CHIP, collaborators were determined to include the needs of population segments that are sometimes hidden, overlooked, marginalized, or stigmatized. Members of such groups may never present at health centers, may not feel welcome or understood when they do, or may not feel comfortable revealing information about themselves that is important to their health care. The iCHNA

Instrument Review Subcommittee created a list of such population segments and conducted targeted key informant interviews and focus groups to ensure inclusion of these segments and those who work with them.

The health status and medical conditions of patients can be directly or indirectly related to poverty, inadequate or unsafe housing, food insecurity and other social determinants of health. This is certainly true in the communities of Chelsea, Revere, and Winthrop, where residents come from a wide range of income levels and degree of advantage or disadvantage. Daunting as such social determinants can be, the iCHNA working groups committed themselves to viewing population segments holistically and considering where they could have an impact locally on the difficult issues affecting quality of life and health of community residents.

Selecting Priorities and Next Steps

After reviewing the primary and secondary data and taking into consideration impact, feasibility, and resources, the Steering Committee voted on the top three health concerns they felt could be address through a regional collaborative process. The health concerns that will be addressed over the next three years will be Housing, Economic Stability and Mobility, and Behavioral Health. Workings groups have been formed to set goals, objectives, and strategies, and begin action plans for each concern. A full Community Health Implementation Plan will be published later in 2019.

The North Suffolk 2019 Community Health Needs Assessment Report

What is a Community Health Needs Assessment?

A community health needs assessment (CHNA) refers to the process of engaging community members, community-based organizations, hospitals, and health systems in order to improve a community's health and identify a community's strengths. In 2010, the Patient Protection and Affordable Care Act was passed, which required hospitals to conduct CHNAs every three years. Additionally, the Massachusetts Attorney General publishes Community Benefit guidelines which include CHNAs every 3 years. Although only hospitals and health systems are mandated to complete a CHNA, CHNAs should engage a range of community organizations as health status and quality of life are impacted by a variety of forces.

For instance, it is impossible to tackle the clinical ramifications of poor housing quality in a community without also tackling the community's poor housing quality itself. Thus, to conduct a comprehensive and robust CHNA, diverse community participation is needed to accurately discern the community's health priorities and develop a strategic and thoughtful implementation plan that addresses these priorities.

When hospitals and other health systems collaborate with existing community-based organizations, the combined knowledge between clinical and community spheres can be leveraged to promote healthy behaviors and lifestyles for community members in new and more efficient ways. These relationships between clinical and community organizations can also fuel more grant applications, more upstream public health action, and more reinforcement for a community-wide perspective to health.

This is what the iCHNA intended to do--create an inclusive assessment process that engaged stakeholders to identify root causes of health concerns and address them in a collaborative manner.

Healthy Community, Social Determinants of Health, and Health Equity

There are many definitions of a healthy community. For some, healthy communities emphasize low rates of chronic and infectious diseases or low mortality and morbidity rates. For others, healthy communities are those where people have access to favorable social and emotional opportunities such as education, employment,
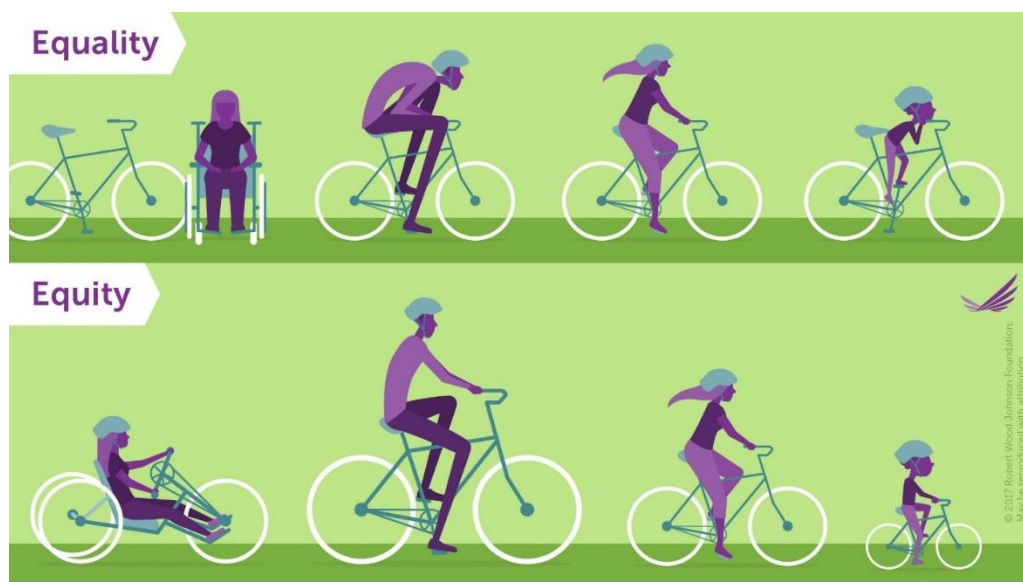
housing, stable families, and healthcare. For the iCHNA, a healthy community is defined as one where individuals from all backgrounds and circumstances have every opportunity to live a healthy life; and where local governments, health care providers, social service and community-based organizations, and community residents work in continuous partnership to improve health outcomes for all people in the region.

Based on data from the 2019 Quality of Life survey, the three communities agreed on four aspects of a healthy community: access to health care, affordable housing, good schools, and low crime and low violence/safe neighborhoods. However, on a deeper community dive, each community had one aspect that ranked as their community's fifth most important healthy community concern which did not make the top five healthy community aspects of the other two communities. For example, Chelsea's fifth most important aspect of a healthy community was access to healthy food. For Revere, the fifth most important aspect was effective city services such as water, trash, fire department, and police services. For Winthrop, their fifth most important aspect was a clean environment. This shows that, even regionally, it is difficult to create an all-encompassing definition of a healthy community.

Although there is no ultimate definition of a healthy community, viewing a community through the lens of its social determinants of health (SDoH) aids us in understanding its health status and determining what kinds of actions could be taken to improve it. SDoHs are those factors that create environments that are either protective and supportive or harmful and detrimental for individuals and families to grow and age. These factors include childhood experiences, quality and affordable housing, educational opportunities, social support, income stability and mobility, employment opportunities, and access to healthcare services. As communities and organizations conduct CHNAs, the prominent requisites for communities to be healthier either are, or are related to, SDoHs.

Health equity means that everyone has a fair opportunity to be as healthy as possible. This requires removing or reducing obstacles to good health such as poverty and discrimination and their consequences (including powerlessness and lack of access to good jobs with fair pay), quality education and housing, safe environments, and health care.

The iCHNA and CHIP process took into consideration the SDoH and health equity when creating data collection instruments and protocols, recruiting committee and subcommittee members and participants, collecting qualitative data, and reviewing best practices to address the health needs of North Suffolk residents.

Establishment of the North Suffolk Public Health Collaborative in 2016

The NSPHC was created in 2016 by the chief executives of the three adjacent communities of Revere, Chelsea, and Winthrop, which constitute the northern portion of Suffolk County. The mission of the NSPHC is to work with community stakeholders--city and town officials, municipal departments, health care and social service providers, community groups, etc.--to identify shared public health challenges and opportunities to collaborate productively on selected issues. Although the communities have significant differences in demographics and specific health issues, they also have common characteristics, offering the possibility of addressing some issues more effectively through working together rather than separately. In addition, like much of the United States,

Childhood Experiences | Housing | Education | Social Support

Income | Employment | Communities | Healthcare

the populations of the three communities have become increasingly ethnically diverse, an important factor for consideration in planning for health care and human services that meet evolving community needs.

In drawing up the inter-municipal agreement to establish the Collaborative, the Mayor of Revere, City Manager of Chelsea, and Town Manager of Winthrop received technical assistance from the Metropolitan Area Planning Council (MAPC), a regional planning agency serving much of Eastern Massachusetts. MAPC's areas of focus include public health and cross-jurisdictional collaborations, and the agency continues to offer guidance to the Collaborative. To coordinate the NSPHC's activities, the three communities agreed to fund a dedicated position, the NSPHC director, who works with staff of the three municipalities, their boards of health and health departments, local provider organizations, and other community health-related stakeholders.

The NSPHC and the Impetus for the 2019 North Suffolk Integrated Community Health Needs Assessment and Community Health Improvement Plan

Several months after the NSPHC began operations, hospitals serving Revere, Chelsea, and Winthrop were gearing up to conduct their individual community health needs assessments and plan for community health improvement programming which were due to government agencies in 2019. Most hospitals conduct assessments every three years to comply with federal and state requirements for community engagement and programming designed to target local needs, including those of underserved populations. The timing of the 2019 round of assessments presented a special opportunity. The Mayor, City Manager and Town Manager, of the three NSPHC communities asked the hospitals to depart from their customary practice and conduct the assessments jointly and collaboratively. Their intention was to develop a more comprehensive, shared understanding among all parties of the needs of all three communities and seek opportunities to work together to address them.

The NSPHC director co-coordinated the year-long iCHNA and CHIP process with a senior director at the Center for Community Health Improvement of Massachusetts General Hospital, one of the collaborating hospital systems. The work of the iCHNA Steering Committee and various project subcommittees has resulted in this report and working groups which are developing goals, objectives, and proposed initiatives for collaborative involvement over the next three years and beyond. Going forward, it is anticipated that the NSPHC director will take a lead role in coordinating and convening partnering organizations around selected initiatives emerging from the working groups.

The North Suffolk Region and the Communities Involved

Suffolk County, Massachusetts, includes the cities of Boston, Revere, and Chelsea, and the town of Winthrop. In this report, North Suffolk refers to the latter three communities north of Boston: Revere, Chelsea, and Winthrop.

Revere is a city located approximately 5 miles (8.0 km) from downtown Boston. Founded as North Chelsea in 1846, it was renamed in 1871 after the American Revolutionary War patriot Paul Revere. Revere Beach is the oldest public beach in the United States.

Chelsea is a city directly across the Mystic River from the city of Boston. It is the second most densely populated city in Massachusetts behind Somerville. With a total area of just 2.21 square miles, Chelsea is the smallest city in Massachusetts in terms of total area. Chelsea is a diverse, working-class community that contains a high level of industrial activity. It is one of only three Massachusetts cities in which the majority of the population identifies as Hispanic or Latino.

Winthrop is an oceanside suburban community situated at the north entrance to Boston Harbor, close to Logan International Airport. It is located on a peninsula, 1.6 square miles (4.2 km²) in area, connected to Revere by a narrow isthmus. Settled in 1630, Winthrop is one of the oldest communities in the United States. It is also one of the smallest and most densely populated municipalities in Massachusetts.
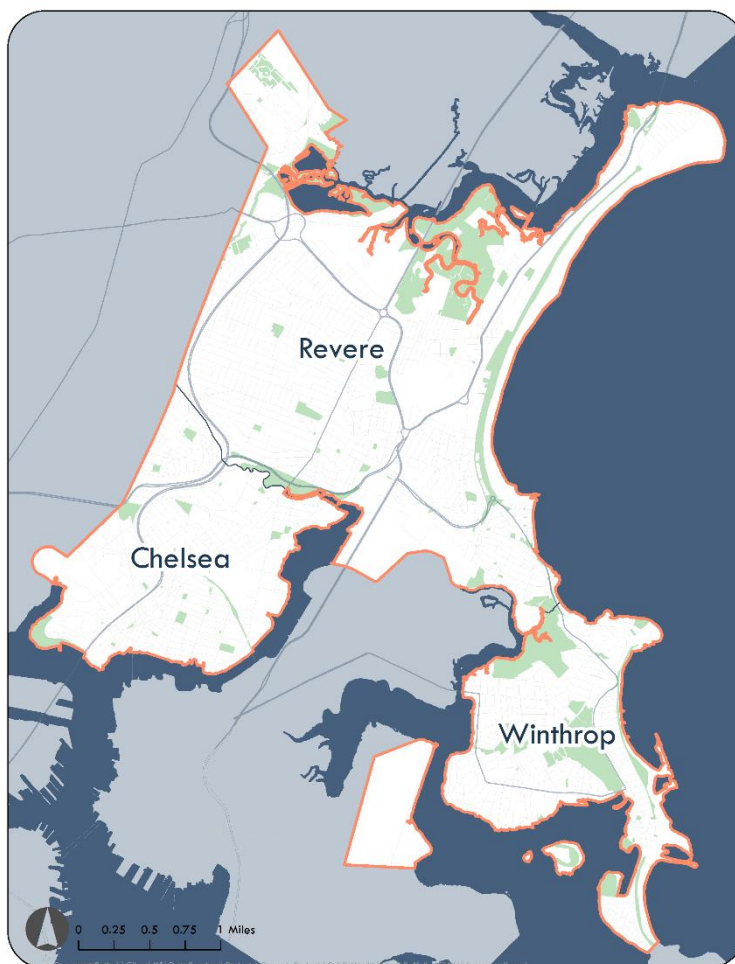
Community Demographics and Characteristics

	Winthrop	Chelsea	Revere	MA
Population	17,962	37,581	53,095	6,705,586
Children living below 100% poverty	9.80%	28.50%	23.00%	14.8%
% High School graduate or higher	94.80%	65.40%	82.20%	89.8%
Percent Population Age 5+ with Limited English Proficiency	6.60%	42.40%	24.10%	8.9%
Foreign born	15.60%	44.00%	34.90%	15.50%
White	93.80%	48%	76%	74.30%
African American or Black	1.70%	5%	4%	7.10%
American Indian and Alaskan Native	0%	0%	0%	0.20%
Asian	1%	3%	6%	6%
Hispanic	8.30%	64.20%	26.40%	10.60%
Other Race	0.80%	7%	9%	4.20%
Two or More Races	2.70%	35%	5%	2.90%

Assessment Approach

From the outset, the intention of the North Suffolk iCHNA Collaborative was to collect accurate information and create a regional plan to guide the municipalities, service providers, public and private organizations, and health systems that serve the area. To be effective, these plans would be:

- Comprehensive: Involving a full range of stakeholders, data, and a broad definition of health and wellbeing to create a CHNA and CHIP that would reflect the needs of all community residents.
- Inclusive: Ensuring all segments of the population would have a voice in the process, data collection, and implementation plan.
- Data-considered: Gathering extensive primary and secondary data on the health, wellbeing, and quality of life of residents through qualitative and quantitative methods.
- Collaborative: Guiding and engaging stakeholders throughout the process for sound decision making, co-learning, and transparency.


In order to meet these values, the iCHNA was led by a **Steering Committee**. The Steering Committee was a selected group of leaders, including the chief executives of the communities, a representative of each board of health, leaders of community organizations, and representatives from the five health systems that serve the area. If a key population segment was missing from the committee, specific agencies or representatives were recruited. The Steering Committee set direction and policy and had authority over priorities and implementation plans. The Steering Committee met every other month throughout the iCHNA and CHIP process. The meetings were listed on the iCHNA website, and subcommittee members were invited as well.

A "Segment Inclusiveness and Social Determinants of Health" list (Appendix F) was created in collaboration with the Steering Committee and the subcommittees. When reviewing membership on the subcommittees, as well as collecting primary data, this list was consulted to ensure the iCHNA process and data collection were inclusive and representative. When planning for key informant interviews and focus groups, this list was used to identify individuals and groups to ensure that a variety of diverse individuals across sectors and populations were included.

Assessment Timeline

The iCHNA began with an initial meeting of stakeholders on July 25, 2018 to review goals, process, and intentions. The official kickoff of the iCHNA was October 18, 2018.
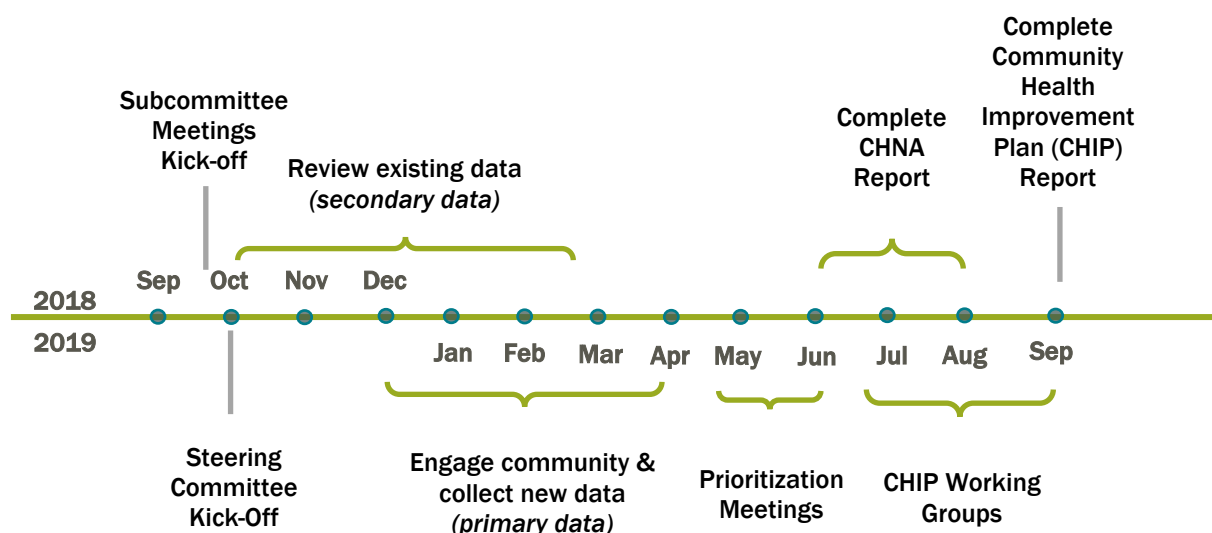
Methodology

1. **Steering Committee:** The Steering Committee established several subcommittees to carry out tasks associated with the phases of the iCHNA and CHIP process.

2. **Instrument Review Subcommittee**: Fifteen people representing different organizations joined the subcommittee. The purpose of this committee was to create, review, and finalize the survey instrument, as well as the focus group and key informant interview guides. The subcommittee met four times to review past instruments, offer new questions in which to gather data, and assess the survey tool for literacy level. The fourth meeting was a joint meeting with the Community Engagement Subcommittee to brainstorm ways to distribute the survey and identify key informant interviews and organizations to assist with focus groups.

3. **Community Engagement Subcommittee**: Eighteen people representing different organizations joined the subcommittee. The purpose of the subcommittee was to identify organizations who had access to populations who might not otherwise be engaged in this process without intentional outreach. Members of the subcommittee, along with Steering Committee members, created a database of 180 organizations and individuals as possible contacts for outreach. They were also charged with recommending community engagement strategies, identifying potential community facilitators, reaching out to organizations and individuals for survey distribution and focus group coordination, and supporting the communications of

the process and final products. The subcommittee met four times, with the fourth meeting being a joint meeting with the Instrument Review Subcommittee.

4. **Data Analysis Subcommittee:** Eleven people representing different organizations in the assessment process joined the subcommittee. The purpose of the subcommittee was to help analyze the data, present the findings back to the Steering Committee, and determine how the data would appear in the reports. Members participated in three meetings to provide guidance on how the data should be organized, subpopulations to focus on, and how the data would be presented to the Steering Committee. The subcommittee determined the data should be organized based on the MA Department of Public Health (DPH) Determination of Need (DoN) Health Priorities and the current MA Executive Office of Health and Human Services (EOHHS)/DPH focus issues:
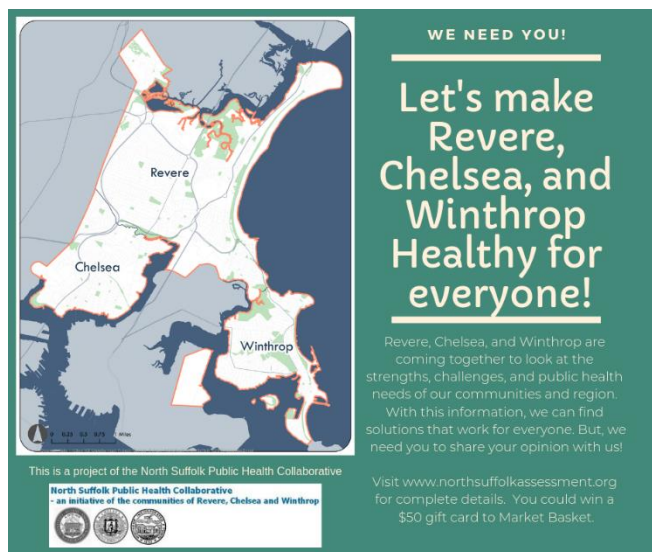
DPH DoN Health Priorities	EOHHS/DPH Focus Issues
Social Environment	Substance Use Disorders (SUDs)
Built Environment	Housing Stability/Homelessness
Housing	Mental Illness and Mental Health
Violence and Trauma	Chronic Disease with a Focus on Cancer, Heart Disease and Diabetes
Employment	
Education	

The Data Analysis Subcommittee also decided to focus on three specific populations of interest: 1. Youth, 2. Seniors, and 3. Foreign-born. The subcommittee provided feedback on the data that was included on "data placemats" to present to the Steering Committee. Data placemats are a tool to communicate with stakeholders the key data themes and engage them in data interpretation (Pankaj, Veena, October 2014. "Data Placemats: A DataViz Technique to Improve Stakeholder Understanding of Evaluation Results." Paper presented at the American Evaluation Association Annual Conference, Denver, CO).

5. **Website and Cable Access Panel:** To promote the iCHNA and CHIP process, keep communities up to date, and house the links to the survey, a website was created: www.northsuffolkassessment.com. The website URL was widely distributed through emails and flyers with the website, emails, and flyers all available in English, Spanish, Portuguese, and Arabic. To promote the website and the survey, a 12-minute cable access panel discussion was recorded and widely distributed. The panel featured the chief executives of the communities and was facilitated by the director of the Revere CARES Coalition, who also interpreted the content into Spanish.

WE NEED YOU!

Let's make Revere, Chelsea, and Winthrop Healthy for everyone!

Revere, Chelsea, and Winthrop are coming together to look at the strengths, challenges, and public health needs of our communities and region. With this information, we can find solutions that work for everyone. But, we need you to share your opinion with us!

Visit www.northsuffolkassessment.org for complete details. You could win a $50 gift card to Market Basket.

This is a project of the North Suffolk Public Health Collaborative

North Suffolk Public Health Collaborative
- an initiative of the communities of Revere, Chelsea and Winthrop

6. **Quality of Life Survey**: The anonymous survey assessed community perceptions of quality of life, health problems in the community, community strengths, safety, community changes and demographic information (including perceptions of personal health, food and housing stability, and utilization of local resources). The survey was translated into Spanish, Portuguese, and Arabic, and was distributed widely via the web and in person within each participating organization. As an incentive, respondents who were willing to provide an email address or phone number were entered into a drawing for one of six $50 supermarket gift cards. A total of 1,827 individuals across Revere, Chelsea, and Winthrop responded to the survey. The survey was cleaned and analyzed in the statistical software, R. After cleaning, 99% of the data were still usable, making the total

sample size of the community health survey 1,819. The data were stratified by community, live or work, age, sex, race, Hispanic/Latino, and foreign-born. The full quantitative analysis is available in Appendix C.

7. **Focus Groups**: Qualitative data were collected through key informant interviews and focus groups with the help of a small group of volunteers from partner organizations and the CCHI Evaluation Team. Volunteers were trained on facilitation and note-taking strategies in February 2019 prior to the start of qualitative data collection. Interview and focus group guides were created for facilitators and note-takers, with standard questions regarding perceptions about the health of the community, community assets, and pressing health issues. Once trained, volunteers traveled to participating organizations to facilitate focus groups. Key informant interviews were conducted both in person and on the phone based on facilitator and interviewee availability.

   Potential focus group participants and key informants were identified by the North Suffolk Integrated Community Health Needs Assessment Steering Committee using a segment inclusiveness worksheet to ensure that a variety of diverse individuals across multiple sectors and populations were included. A total of 22 focus groups were completed, 9 with staff and 13 with community residents, and 28 key informant interviews were conducted, resulting in a combined total of 241 people engaged through this process. Four focus groups were conducted in Spanish. Each interview/focus group lasted approximately 45 to 60 minutes. Community residents received a $15 gift card at the end of the focus groups as compensation for their time. A full list of focus groups and interviews are in Appendix B.

   Upon completion of all focus groups and key informant interviews, the notes were read, reviewed, and coded to categorize the data and identify overarching, common themes. Several themes were found across all three communities, while a few additional themes were found applicable to one or two communities. The full qualitative analysis is available in Appendix C.

8. **Public Health Data**: Public health data were gathered from the U.S. Census, MA Department of Education, MA Department of Public Health, local Youth Risk Behavior Survey (YRBS), Prevention Needs Assessment (PNA), local police departments and community-based organizations.

Limitations

As with all field research, there are several data limitations to report. This assessment sought to obtain diverse participation in the community. Every effort was made to ensure broad distribution of the Quality of Life survey so that all groups in the community were represented. Despite the concerted community outreach effort, the majority of survey respondents were white females. However, there was a sufficient sample within each community to allow for analysis by sub-groups (e.g., male vs. female, Hispanic/Latino). Focus groups were conducted in the communities to obtain the perspectives of youth, parents, immigrants, and non-English speakers, who were all less likely to respond to surveys.

CHNA & CHIP Process
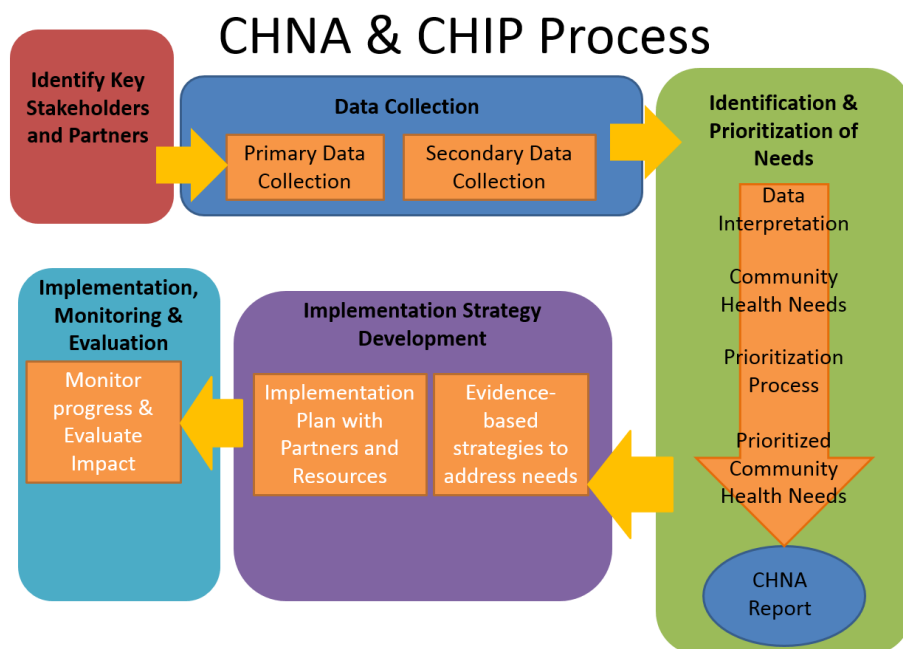
Findings

Presented below are key data gathered during the iCHNA process that support the prioritized health needs of the communities. They include primary and secondary data, with citations as appropriate. More data can be found in Appendix D.

Community Characteristics

The combined population of the three communities is 109,440, with Revere being the largest, (53,165), then Chelsea (38,244), and Winthrop the smallest (18,031) (ACS, 2012-2016).

Total Population

Revere	Chelsea	Winthrop
53,165	38,244	18,031
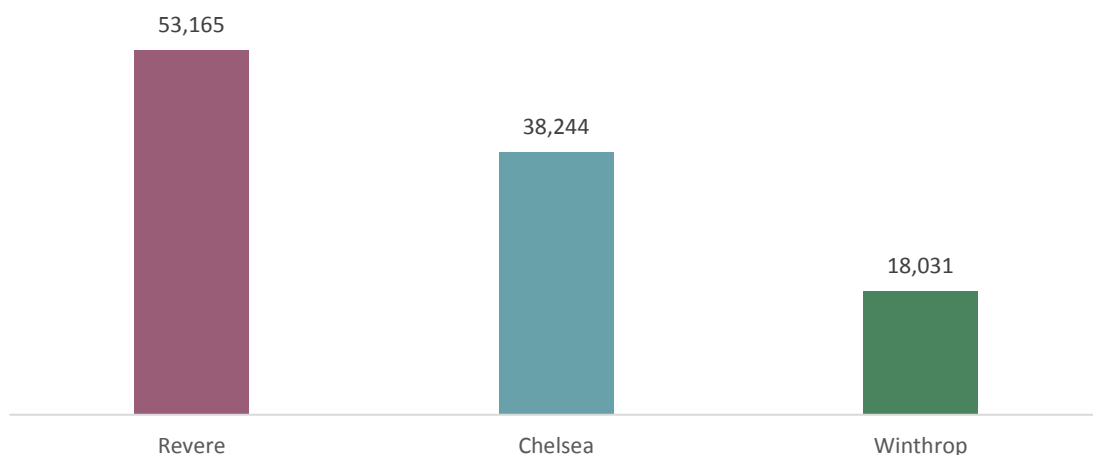
Data Source: American Community Survey (ACS), 2012-2016

Resilience was mentioned several times as a community strength in Chelsea and Revere. Participants in both communities reported that the populations they work with, or are a part of, are strong-willed and have a desire to access services to improve, despite the adversity some have faced. One participant in a staff focus group stated, "Despite the lack of access to resources, they do their best to try to receive help." Key informants and focus group participants stated that patients often advocate for themselves to try to obtain useful resources. In addition, participants mentioned that there is a strong sense of community pride in all communities. Thus, it is evident that focus group participants and key informants believe that the people in these communities are key assets.

> *"It is a resilient city that overcomes its obstacles and perseveres"*
> - Revere Focus Group Participant

Multiple focus group participants readily and repeatedly talked about the rich diversity of people in Chelsea and Revere and the increase of ethnically and culturally diverse groups without a lot of racial tension. According to one focus group participant in Chelsea regarding diversity, "We are an immigrant city, you get to know about different people and make friends. I belong to a lot of groups." Additionally, one focus group participant in Chelsea stated, "I don't feel that, when I walk in Chelsea, people will judge me because of who I am." Many participants also talked about the wide range of restaurants representing a vast array of cultures in their communities, an advantage that other communities do not have. Participants across focus groups reported a desire to create more cultural events and ways to celebrate the diversity in Chelsea and Revere by uniting all of the different ethnic and racial groups so they are not isolated in their own groups. Ultimately, participants really embrace this distinct quality of Chelsea and Revere.
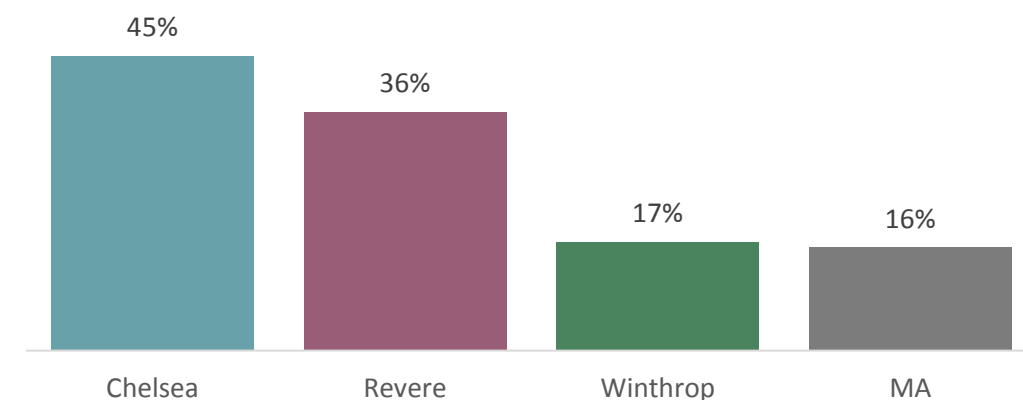
Additionally, focus group participants stated that the beach in Winthrop is beautiful, and that the beach in Revere helps to bring the community together. One youth participant stated, "There are people from other cities that come to the beach; you get to learn about other people's cultures and it exposes us to different things that people in other cities that are predominantly White don't get". It is apparent that the beach not only aesthetically enhances Revere and Winthrop; it also serves as a common meeting place for people both inside and outside of these communities.

Race/Ethnic Composition by City/Town and State 2012-2016

	Chelsea	Revere	Winthrop	MA
Hispanic or Latino	**66%**	28%	12%	11%
Non-Hispanic White alone	23%	**58%**	**85%**	74%
Non-Hispanic Black or African American alone	5%	5%	0.5%	7%
Non-Hispanic Asian alone	3%	6%	1%	6%
Non-Hispanic Two or More Races	3%	2%	2%	2%
Non-Hispanic American Indian, Alaska Native, Native Hawaiian and Other Pacific Islander, or Some Other Race alone	0.8%	0.7%	0.1%	2%

Data Source: American Community Survey (ACS), 2012-2016

Percent of Foreign-born Residents, ACS 2012-2016

Data Source: American Community Survey (ACS), 2012-2016

Chelsea has a higher percent of youth, while Revere and Winthrop has a larger proportion of older adults. Additionally, English proficiency is vastly different across the communities. Chelsea by far has the highest percentage of residents who do not speak English at all (11%) or do not speak English well (18%). Chelsea schools are also working with many students (38%) who are English language learners.

Gender, ACS 2012-2016
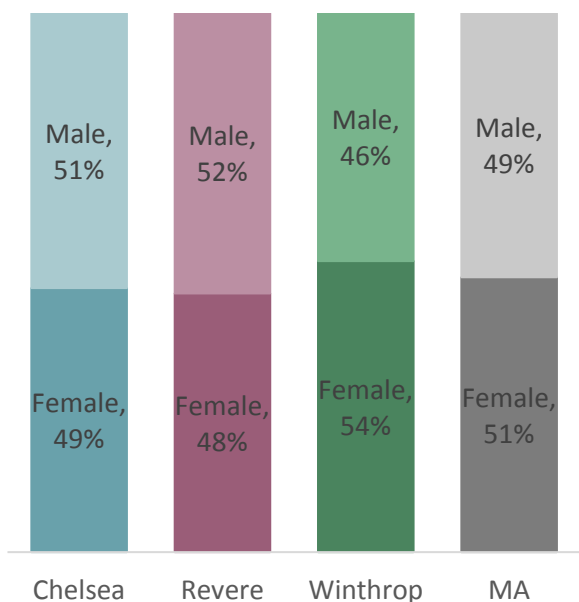
Age Distribution, ACS 2012-2016
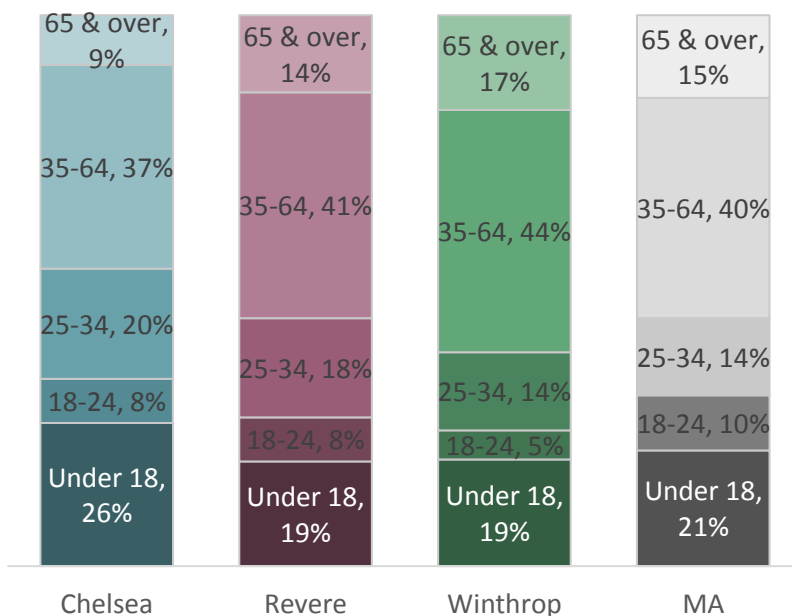
Data Source: American Community Survey (ACS), 2012-2016

Language Proficiency, ACS 2012-2016

■ Chelsea ■ Revere ■ Winthrop ■ MA

People speaking another language and do not speak English at all
- Chelsea: 11%
- Revere: 3%
- Winthrop: 0.4%
- MA: 1%

People speaking another language and do not speak English well
- Chelsea: 18%
- Revere: 9%
- Winthrop: 2%
- MA: 3%

Data Source: American Community Survey (ACS), 2012-2016

Language Characteristics of Public School Students, 2018-19

	Chelsea	Revere	Winthrop	MA
First Language not English	82%	65%	22%	22%
English Language Learners	38%	23%	8%	11%

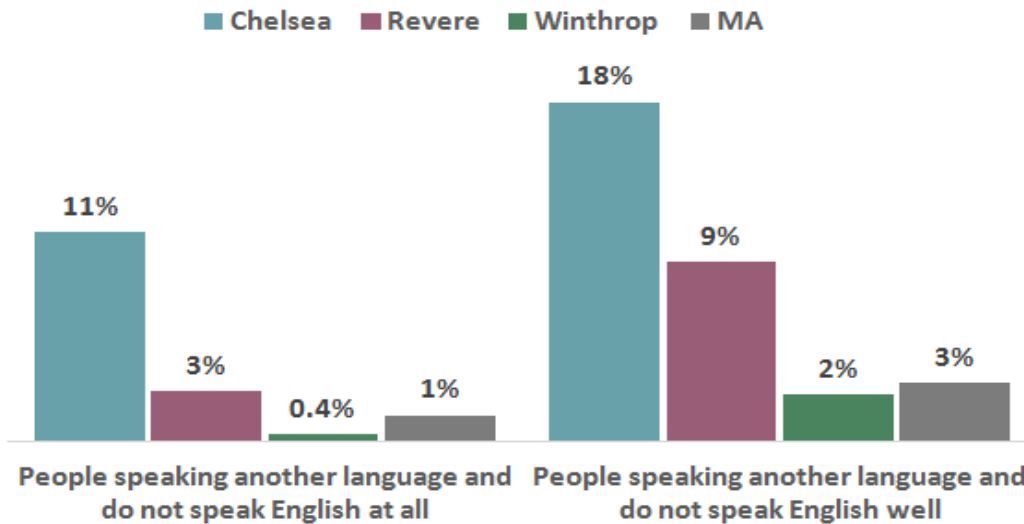*Data Source: MA Department of Elementary and Secondary Education (DESE)*

Top Health Concerns

On the Quality of Life Survey, respondents were asked to identify their top 5 health concerns in their community out of a list of 29 items. For the region, the top 5 health concerns were Substance Use (74%), Environmental Concerns (47%), Mental Health (45%), Housing (36%), and Aging Problems (26%). However, when broken down my community, the top 5 change slightly. Chelsea and Revere's top 5 health concerns at the same, although in different order. Winthrop's top 5 include Cancer and Aging Problems.

Chelsea Top 5 Concerns
- Substance Use: 75%
- Housing: 44%
- Mental Health: 41%
- Poverty: 38%
- Environment: 35%

Revere Top 5 Concerns
- Substance Use: 73%
- Mental Health: 45%
- Environment: 42%
- Housing: 37%
- Poverty: 28%

Winthrop Top 5 Concerns
- Substance Use: 73%
- Environment: 65%
- Mental Health: 49%
- Cancer: 42%
- Aging problems: 35%
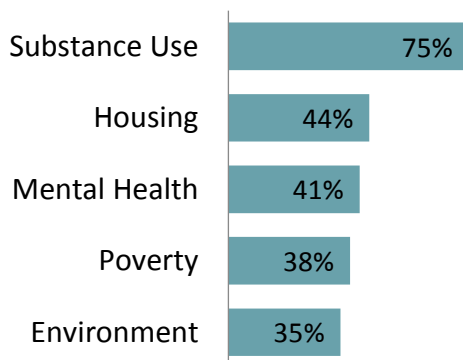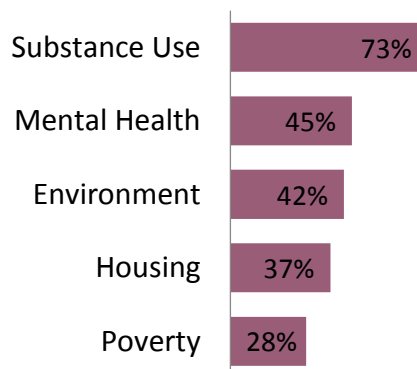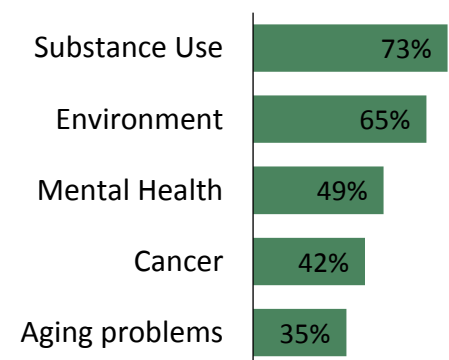
Data Source: Quality of Life Survey, 2019

Prioritization Process

Guided by the iCHNA Data Analysis Subcommittee, the MGH Center for Community Health Improvement team created "data placemats," generally two-page compilations of iCHNA primary and secondary data pertaining to 9 themes (Appendix D):

- Built Environment & Environmental Concerns
- Chronic Disease, including Diabetes, COPD, Asthma, & Cancer
- Housing (quality, affordability, homelessness)
- Employment & Income/Financial Security
- Education
- Mental Health
- Social Environment
- Substance Use Disorder
- Violence & Trauma

Additionally, data placemats were created to describe the demographics of the region, as well as youth, seniors, and foreign-born.

At a special meeting of Steering Committing on June 6, 2019, a multi-stage, facilitated process was employed to review, discuss, and prioritize issues. Placemats for all the above issues were distributed and reviewed. Then, in breakout groups, participants discussed the issues from the perspective of three criteria:

1. Impact & Feasibility: Assuming we had resources, is it realistic that working on this issue could achieve short-term or long-term change?
2. Sufficient Resources: Is it possible to address this issue given existing or anticipated infrastructure, capacity, funding, and political will?
3. Collaboration: Are there already groups working on this issue? Are there existing groups across sectors willing and able to work together on this issue?

Finally, after each breakout group reported out their discussions to the room, participants voted with colored dots on the themes they felt offered the greatest opportunities for collaborations. Three priority areas emerged:

- Housing – including affordability, quality, stability, gentrification, and displacement.
- Behavioral Health – including youth mental health and substance use disorders.
- Economic Stability & Mobility – including employment, job training, and education.

Although the Steering Committee narrowed the focus to three priority areas, other significant themes pertaining to community wellbeing (e.g. environment-related health concerns, food insecurity and childhood obesity) present potential opportunities for additional multi-community collaborations that may be explored by interested participants.
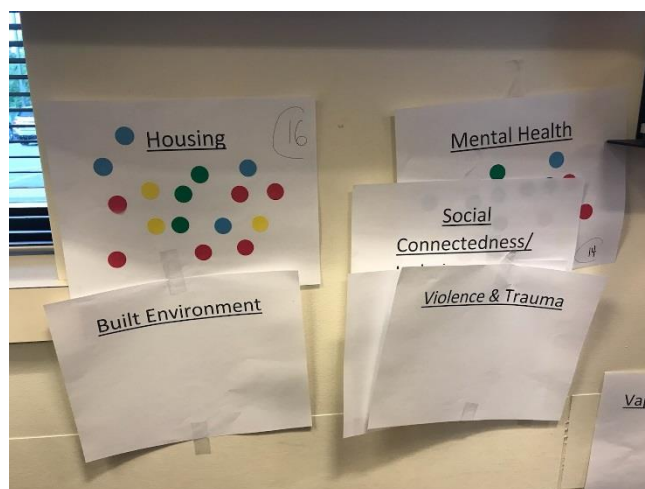
Housing

One of the strongest themes running through the quantitative and qualitative data was the concern around housing in North Suffolk. Based on the Quality of Life Survey, 36% of all respondents identified housing as a top-ten health concern. Survey respondents from Chelsea ranked housing as second among health concerns. This is in marked contrast with Chelsea's 2015 Quality of Life Survey in which housing did not appear among the top five health concerns. Survey respondents from Revere ranked housing fourth among health concerns. Similar to Chelsea, in 2015, Revere survey respondents did not previously identify housing as a top health concern. In both the 2014 and 2019 Quality of Life Survey, Winthrop respondents did not rank housing as part of their top five health concerns; however, housing did have a change in ranking in Winthrop from #10 (2014) to #6 (2019). The changes of how housing was ranked between 2014 to 2019 as a health priority indicates that Chelsea, Revere and Winthrop survey respondents are noticing that housing affects not only their finances and where they live, but that housing also affects their health.

As one of the most intricate social determinants of health, housing issues cause a cascade of effects on individuals. The housing issue in North Suffolk, based on our secondary and primary data, can be split into two categories: housing quality and affordability of housing. Housing quality pertains to the quality of life experienced by those who rent or own as well as the built housing environment. Affordable housing is related to the effects of rising housing costs and subsequent consequences of increased eviction rates and homelessness.

Housing Quality: According to the American Community Survey (ACS) data from 2012 to 2016, approximately 38% of all housing units in Massachusetts were renter-occupied. On a deeper community dive, 76% of all housing units in Chelsea were renter-occupied, 52% of all housing in Revere were renter-occupied, and 43% of all housing units were renter-occupied compared to the 38% of Massachusetts's housing units being renter-occupied. Without stratifying the Quality of Life Survey, 54% of survey respondents stated that they are homeowners. When these results were stratified by community, 53% of Chelsea respondents are renters while the majority of respondents from Revere and Winthrop are homeowners (54% are homeowners in Revere, and 71% are homeowners in Winthrop).

Percent Owner-Occupied and Renter-Occupied Units, 2012-2016

■ **Owner-Occupied Units**　■ **Renter -Occupied Units**

	Chelsea	Revere	Winthrop	MA
Renter-Occupied	74%	52%	43%	38%
Owner-Occupied	26%	48%	57%	62%
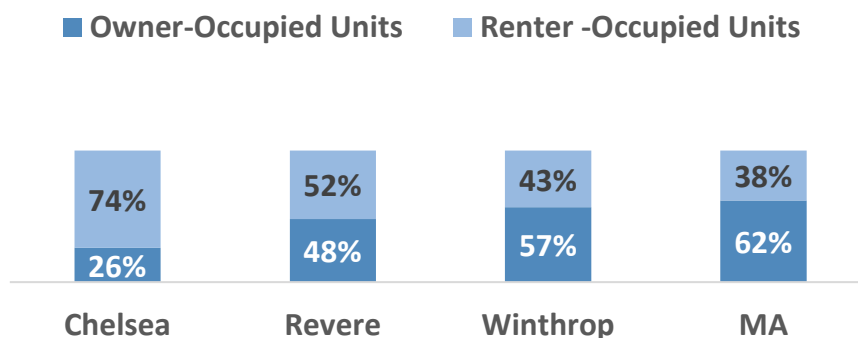
Data Source: American Community Survey (ACS), 2012-2016

Renting can present multiple sources of stress for North Suffolk individuals. For instance, focus group participants who rent units mentioned that necessary repairs, like broken doors, are hardly ever completed, and landlords can be negligent when it comes to making any improvements to apartments. According to ACS data on renter-occupied units by race/ethnicity from 2012-2016, the majority of individuals who are renting units in Chelsea, Revere, and Winthrop are minority populations such as Hispanic/Latino, Black/African American, Asian, Multi-race and/or other race, American Indian, and Pacific Islander. Chelsea-based community health workers (CHWs) who work with diverse and foreign populations discussed the existence of "slumlords" in the community. Slumlords are landlords who do not maintain adequate housing conditions for their tenants. The CHWs expressed that their patients who are immigrants hesitate to complain about these slumlords because of their immigrant status and, thus, remain living in substandard housing conditions.

North Suffolk also has high rates of housing built before 1978, which presents issues with lead for growing families. In Massachusetts, 71% of housing units were built prior to 1978; however, 79% of housing units were built prior to 1978 in Chelsea, 74% of housing units were built prior to 1978 in Revere, and 90% of housing units were built prior to 1978 in Winthrop. Based on data from Massachusetts Environmental Public Health Tracking, the percent of children screened for lead were at higher rates in North Suffolk in comparison to the percent of children screened for lead in Massachusetts.

Percent of Children Screened for Lead and Percent of Children with Elevated Blood Lead Levels

	Chelsea	Revere	Winthrop	MA
% of Children Screened for Lead	94%	83%	82%	73%
% of Children with Elevated Blood Lead Levels	3%	2%	2%	2%

Data Source: Massachusetts Environmental Public Health Tracking (EPHT)

Affordable Housing: Many focus group participants, particularly from Chelsea and Revere, echoed each other in saying that the cost of housing is continually increasing, which, in turn, increases the rate of gentrification and evictions. Fifty-six percent of survey respondents from Chelsea, Revere and Winthrop defined a healthy community as one with affordable housing. As gentrification and eviction rates rise, newer, more affluent populations enter the community as low-and-middle income community residents are forced to exit. As the housing prices increase, more households are finding themselves being "cost burdened," meaning that individuals are paying 30 to 50% of their monthly income on housing. From 2012 to 2016 ACS data, 37% of all households— both owner and renter households— indicated that they were cost burdened throughout the state while 41% of households in Chelsea, 51% of households in Revere and 47% of households in Winthrop identified themselves as being cost-burdened.

> *"If the housing situation was better and people could spend more time at home rather than working to afford their housing, they would be able to spend more time meal prepping, eating healthier foods, and connecting with the community."*
> -Chelsea Focus Group Participant
> Focus Group Participant

Percent of All households, Owner households, and Renter Households Experiencing Cost Burdening
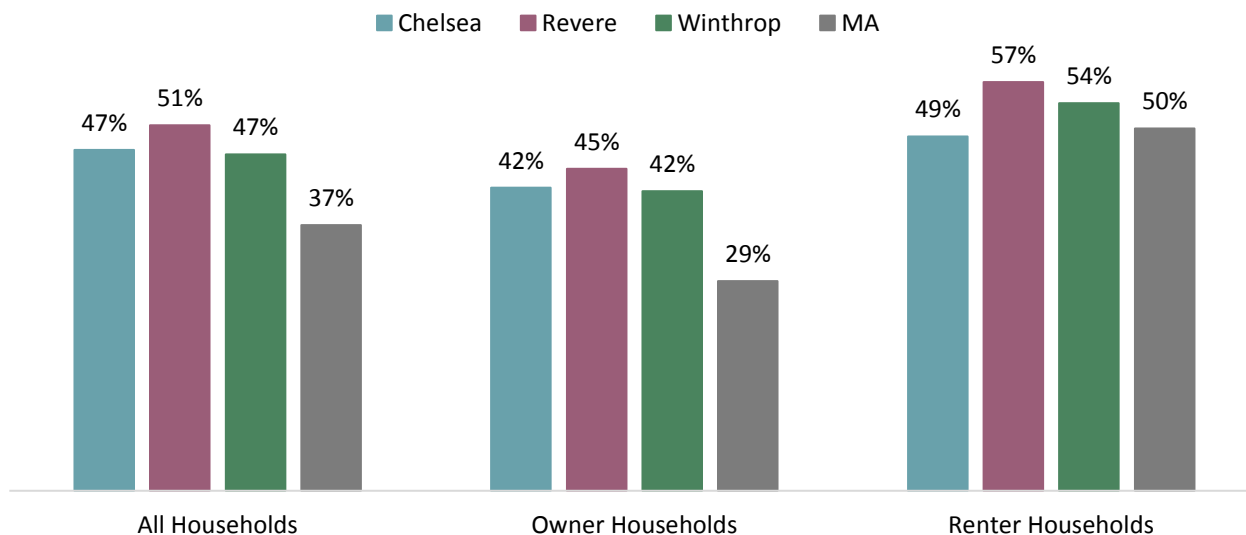
Data Source: American Community Survey (ACS), 2012-2016

These rising costs perpetuate fear in these communities—fear of foreclosure, eviction and homelessness. Based on the eviction rates calculated by Eviction Lab (a database of evictions supported by Princeton University) from 2008 to 2016, within the three communities of North Suffolk, there are peaks in eviction rates around 2012 and 2015. Around 2016, for Revere and Winthrop, the eviction rates seem to be decreasing; while in Chelsea, the eviction rates appear to be increasing.

Eviction Rates, 2008 – 2016

Data Source: Eviction Lab, https://evictionlab.org/
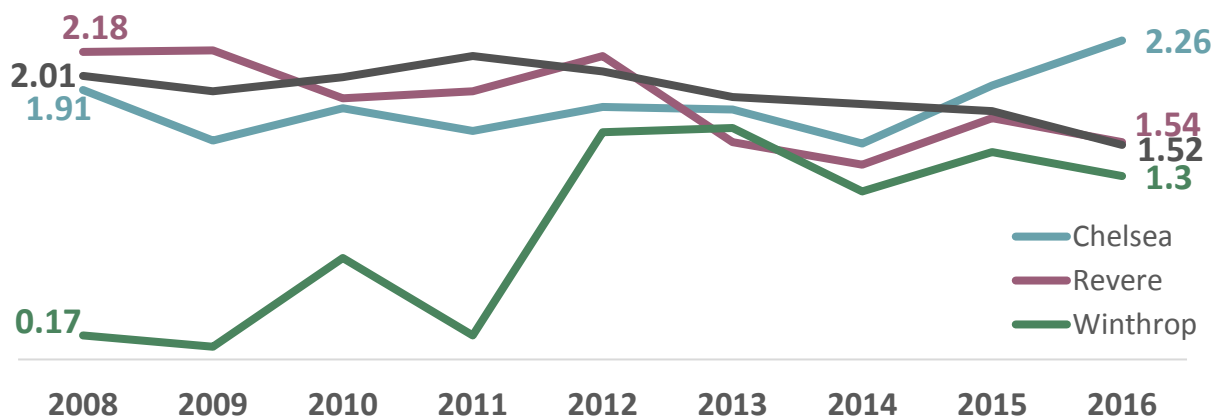
Compared to 11% of non-Hispanic/Latino survey respondents, 23% of Hispanic-Latino survey respondents fear that they will be evicted or foreclosed due to lack of rent or mortgage payment. As individuals are evicted or have their homes foreclosed, they risk experiencing homelessness. Approximately 44% of Revere respondents fear that they will become homeless in the next year, followed by 30% of Chelsea respondents and 23% of Winthrop respondents. The Massachusetts Department of Elementary and Secondary Education's Office of Student and Family Support estimated that throughout the 2017 to 2018 school year, Chelsea had 463 homeless youth, Revere had 191 homeless youth and Winthrop had 14 homeless youth. Homeless youth are identified if their primary nighttime residence consists of either shelters, doubled-up, unsheltered (cars, parks, etc.), or hotels. Without good quality and affordable housing, healthy behaviors and lifestyles are difficult to sustain.

Mental Health & Substance Use

Mental health and substance use disorders have been identified as community health priorities for several years. The table below illustrates the changes in survey respondents ranking of mental health and substance use disorders from 2014, 2015 and 2019.

> *"Stigma that goes along with mental illness and addiction is traumatizing to a family so they hide and isolate."*
> -Key Informant

	Chelsea		Revere		Winthrop	
Year	**2015**	**2019**	**2015**	**2019**	**2014**	**2019**
Percent of survey respondents who selected Mental Health as a top health concern	17%	41%	21%	45%	11%	49%
Percent of survey respondents who selected Alcohol/Drug Use/Addiction/Overdose as a top health concern	57%	75%	71%	73%	46%	73%

Data Source: 2019 Quality of Life Survey

Since 2014, in all three communities, the percentage of survey respondents selecting substance use disorders/issues and mental health as priorities have increased. Overall, among the three communities, 74% of all survey respondents selected alcohol/drug use/addiction/overdose as the top health concern and 45% of all survey respondents identified mental health as one of the top three health concerns. Though all communities had these issues among their top five health priorities previously, there are now more individuals in agreement that more resources and services are needed in these areas or that these issues are becoming more prominent in their communities.

Substance Use Disorders

As the top overall health concern for survey respondents and focus group participants, individuals in North Suffolk feel that substance use remains a pervasive issue in their communities that affects multiple areas of residents' lives. According to the Office of Statistics and Evaluation from the MA Bureau of Substance Addiction Services (BSAS), from fiscal year 2008 to 2018, the total number of treatment admissions for all substance use disorders into publicly funded treatment facilities decreased in both Revere and Winthrop but increased in Chelsea.

Total Number of BSAS Admissions in FY2008 – 2018
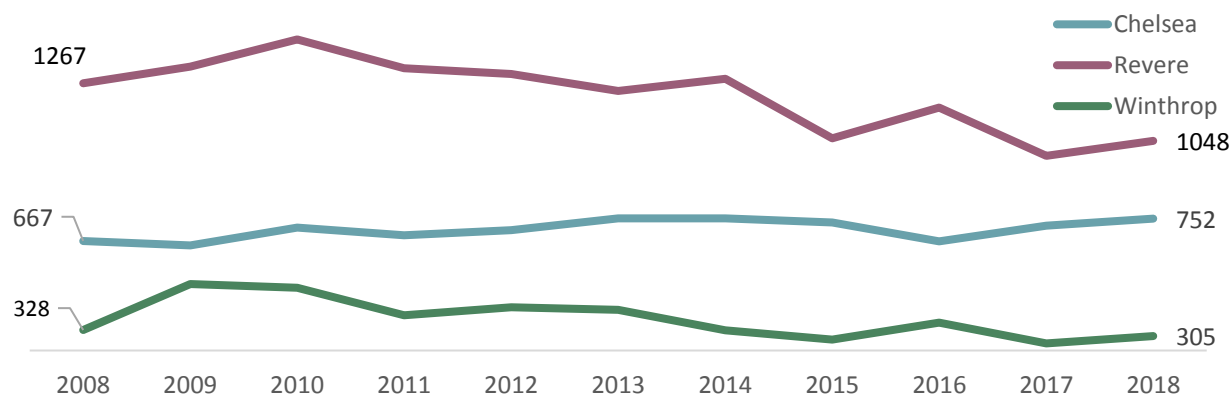
Data Source: Treatment statistics prepared by the Office of Statistics and Evaluation, Bureau of Substance Addiction Services, MDPH on February 27th, 2019 with data as of January 10th, 2019

Alcohol: Based on numbers from BSAS, individuals who were admitted to publicly funded treatment facilities primarily due to alcohol use decreased from 41% in Massachusetts to 30%. However, in Chelsea and Revere, from 2008 to 2018, both communities saw an increase in the percent of individuals who were admitted for treatment for alcohol use (29% to 32% in Chelsea and 21% to 30% in Revere). Both Revere and Chelsea are now at or above the state-wide percentage of individuals admitted for alcohol treatment. Between 2008 and 2018, Winthrop's percent of individuals admitted for treatment decreased from 29% to 24%.

Opioids: In the three communities of North Suffolk, the percentage of individuals admitted for heroin treatment decreased between fiscal years 2008 and 2018 while, statewide, those who were admitted for heroin treatment increased from 37% to 44%.

Primary Drug of Use: Heroin, Percent of BSAS Admissions, FY 2008 – 2018
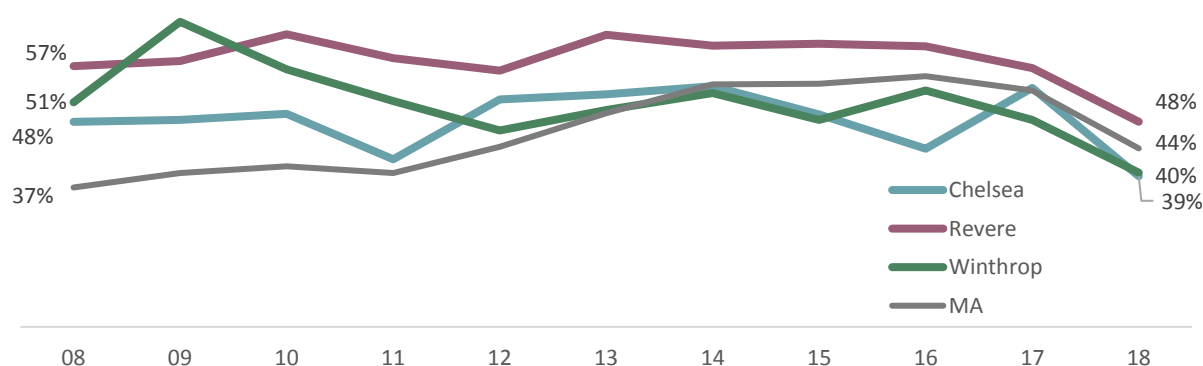
Data Source: Treatment statistics prepared by the Office of Statistics and Evaluation, Bureau of Substance Addiction Services, MDPH

As concerns about the opioid epidemic continue to grow, the number of opioid-related overdose deaths also continue to grow. According to the Massachusetts Registry of Vital Records and Statistics from Massachusetts Department of Public Health (MDPH), in 2013, the number of opioid-related overdose deaths were: 7 in Chelsea, 15 in Revere, and 2 in Winthrop. By 2017, Chelsea's number of opioid-related overdose deaths was 14. The highest peak was in 2015 when the city saw 18 individuals die due to opioid-related overdoses between 2013 to 2017. In Revere 2013, the number of opioid-related deaths was 15. By 2017, the number of opioid-related deaths was 24. The highest peak of opioid-related deaths was in 2016, when the city of Revere had 26 individuals

die due to opioid-related overdoses. In Winthrop 2013, the number of opioid-related deaths was 2. By 2017, the number of opioid-related overdose deaths was 10. Ten opioid-related overdoses was the highest amount of deaths Winthrop witnessed between 2013 to 2017. In all of these communities, opioid-related deaths appear to be a persistent problem.

Obstacles to Treatment: There are many obstacles for community members who have substance use disorders to receive the clinical and social/emotional services they need:

- One of the most challenging obstacles is stigma. Many focus group participants and key informants from Winthrop and Revere shared that stigma forces community residents suffering with substance use disorders not to be open about their battles with substances. Residents will see needles or know of someone's family member who has used substances, but that individual will not admit it because they feel ashamed and prefer to keep the issues to themselves. Youth in Revere mentioned that they see individuals who do not get help, but instead mask the issue until it becomes a much bigger issue and, thus, creates more problems for the individual.

- Another obstacle individuals face on the road to recovery is once they have accepted that they need, or want, help, there is a shortage of accessible, affordable and available providers. Twelve percent of Chelsea survey respondents stated that they needed substance use services, but were not able to access them. Six percent of Revere respondents and two percent of Winthrop respondents also needed substance use disorder services, but were not able to access them. Compared to 0.7% of non-Hispanic/Latino survey respondents, 24% of Hispanic/Latino survey respondents stated that they needed substance use disorder services, but could not access them. Although respondents did not have the option in the survey to say why they could not access these services, there is a huge demand for substance use disorder services that are culturally and linguistically competent.

- Another obstacle individuals face when seeking treatment is the reality that these substance use issues do not occur in silos. If individuals are also experiencing homelessness, for example, and need mental health services, it is much harder to stick to a treatment regimen. BSAS collects enrollment characteristics of individuals who are admitted, such as homelessness at enrollment. Homelessness at enrollment is defined as those who completed an intake within 14 days prior to enrollment and reported their address as being "Home, homeless." If there was no address type available within 14 days of a completed intake, or if the address type was unable to establish certain homelessness status, then homelessness was determined by what the individuals put when asked about whether they rent or own an apartment or where they slept last night. According to BSAS enrollment characteristics for fiscal year 2017, 33% of all individuals from Chelsea seeking treatment were experiencing homelessness at enrollment. 22% of all individuals from Revere seeking treatment were experiencing homelessness and 18% of all individuals from Winthrop seeking treatment were homeless at enrollment.

- Another obstacle is the intersection between substance use disorders and mental health. BSAS also collects information on whether individuals had prior mental health treatment. Thirty-nine percent of Chelsea residents enrolled for substance use disorders treatment had prior mental health treatment. Thirty-nine percent of Revere residents enrolled for substance use disorders treatment had prior mental health treatment. Forty-seven percent of Winthrop residents enrolled for substance use disorders treatment in Chelsea had prior mental health treatment.

Overdose: As more people begin to use drugs for a myriad of reasons, more people also begin to overdose and consequently become hospitalized as well. According to the Massachusetts Center for Health Information and Analysis (CHIA), from 2007 to 2014, individuals from Chelsea, Revere and Winthrop had increased rates of heroin overdose hospitalizations. The rates are adjusted by age per 100,000. In 2007, Massachusetts had a statewide age-adjusted rate of heroin overdose hospitalization of 29 per 100,000. Chelsea had 47.2 per 100,000 and

Revere had 59 per 100,000 heroin overdose hospitalizations. For years 2007, 2008 and 2010, Winthrop's rates of heroin overdose hospitalization are suppressed due to confidentiality. During this time period (2007, 2008 and 2010), Winthrop is reported to have 108.8 per 100,000 heroin overdose hospitalizations.

Heroin Overdose Hospitalization Age-Adjusted Rate per 100,000, 2007-2014
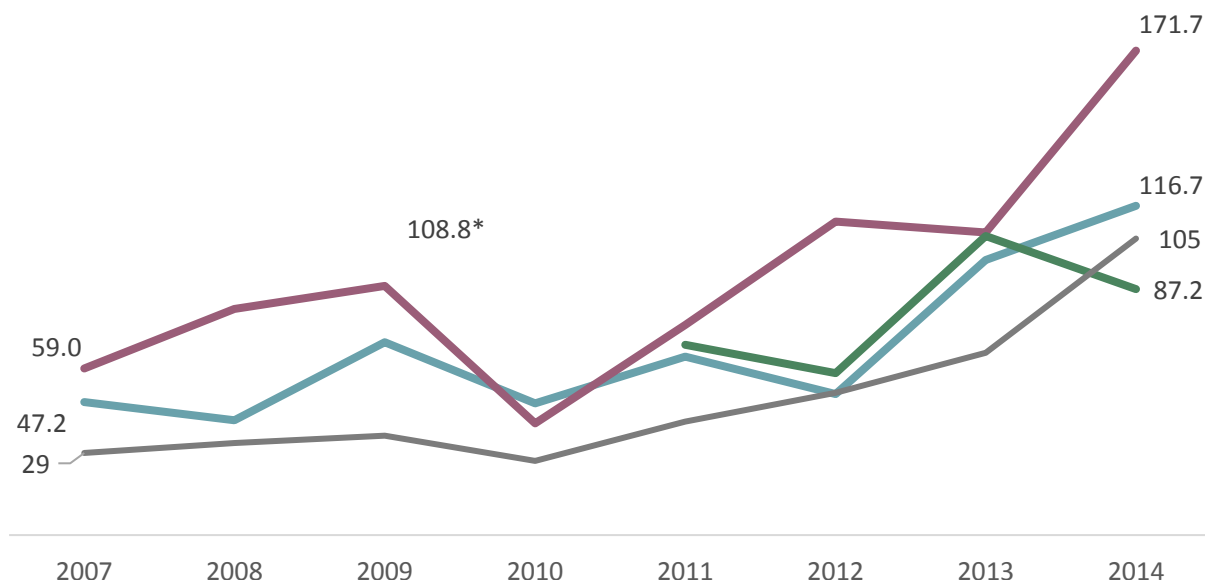
*Number suppressed due to confidentiality for Winthrop for years 2007, 2008, and 2010
Data Source: Massachusetts Center for Health Information and Analysis (CHIA)

In 2014, Massachusetts heroin overdose hospitalization age-adjusted rate increased to 105 per 100,000. In Chelsea 2014, the heroin overdose hospitalization rate increased to 116.7 per 100,000. In Revere 2014, the heroin overdose hospitalization rate increased to 171.7 per 100,000. Winthrop, who had one of the highest heroin overdose hospitalization rates between 2007 and 2010, had one of the lowest rates of heroin overdose hospitalization with 87.2 per 100,000. Non-opioid overdose hospitalizations have higher age-adjusted rates than heroin overdose hospitalizations.

Youth: With the legalization of marijuana and normalization of marijuana use, North Suffolk youth expressed during focus groups that there is a perception of less risk to using marijuana compared to other drugs. A youth participant mentioned that "since marijuana has been legalized, the youth have been using it more. Sometimes, I have found youth using marijuana treating it like a game, like it's fun." Based on data from the Youth Risk Behavior Survey (YRBS) from Chelsea (2015) and Revere (2017), Winthrop's similar version of the YRBS, the Prevention Needs Assessment (PNA) from 2018, and Massachusetts's Youth Health Survey (2017), 10% of Winthrop middle school and high school youth reported using marijuana within the past 30 days compared to the 5% from Chelsea and Revere middle school youth and 2% of Massachusetts middle school youth . As Winthrop has a

different survey than Chelsea, Revere and the state, it is important to note that their percentages are combined between middle school and high school youth. Although the North Suffolk middle school youth are using marijuana more often than the statewide percentage, the North Suffolk high school youth are using marijuana less often than the Massachusetts high school youth (19% of Chelsea high school youth, 18% of Revere high school youth, 10% of Winthrop's combined middle and high school youth vs 24% of MA high school youth)

Another growing concern for youth due to perceived reduced harm is the increased use of electronic vapor products, otherwise known as vaping. Health officials and school administrators have recognized underage vaping as an epidemic, with even younger teens becoming addicted to nicotine, which is harmful to developing brains. Youth focus group participants mentioned that vaping is a huge concern for them as it has grown increasingly prevalent in their communities. Youth even mention that students use it on school property and in front of teachers. One young person from a Revere focus group mentioned that they saw a student "take a hit" from a JUUL in class while the teacher was looking at the student because the student was easily able to hide the JUUL in their sweatshirt. Youth, however, continue to share that they do not perceive the JUUL as being harmful or addictive as notice and that everyone is doing it.

Percent of Middle and High School Students Reporting Using Electronic Vapor Products in Past 30 Days
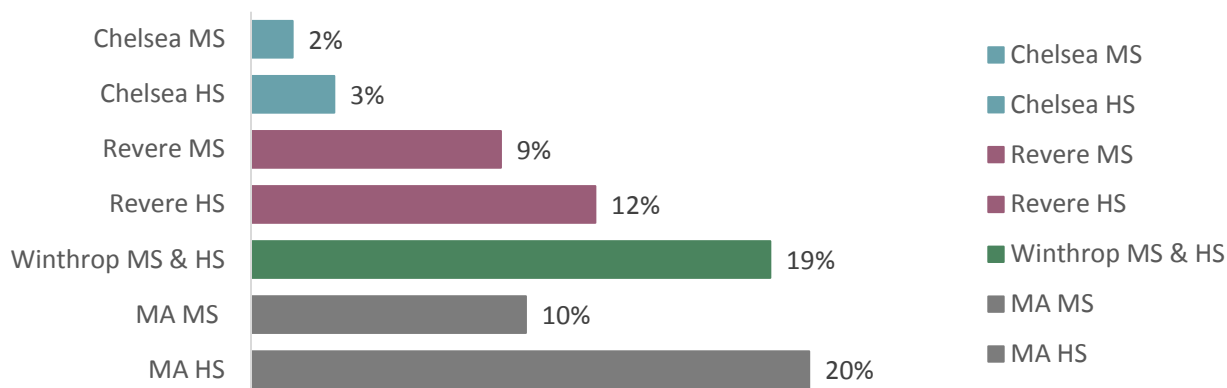
Data Source: Chelsea YRBS, 2015; Revere YRBS, 2017; Winthrop PNA, 2018

The final area of concern for youth is the use of alcohol. Based on 2015 & 2017 YRBS, 2018 PNA, and 2017 MA Youth Health Survey, 4% of MA middle school youth reported drinking alcohol in the past 30 days compared to much higher rates in North Suffolk: 8% of Chelsea middle school youth, 8% of Revere middle school youth and a 20% combined rate of Winthrop middle school and high school youth drinking alcohol in the past 30 days. Thirty-one percent of MA high school youth reported drinking alcohol in past 30 days compared to 26% of Chelsea high school youth, 21% Revere high school youth, and 20% combined rate of Winthrop middle school and high school youth drinking alcohol in the past 30 days. Based on data from the 2015 and 2017 YRBS, 33.1% of Chelsea middle school youth and 42.1% of Revere middle school youth feel that the main reason why youth their age drink or use alcohol is to fit in.

Though the opioid crisis is ongoing, other drugs and substances continue to pose a threat for the North Suffolk region, especially its youth. As solutions and plans are created, it is imperative to remember basic necessities for individuals at risk for these challenges: social and emotional support, a stable environment, proper education about the risk of harm of drugs, and, if needed, mental health resources and services.

Mental Health
In the 2014 and 2015 Quality of Life surveys, mental health was among all communities' top five health concerns, with percentages as low as 11% of survey respondents identifying that mental health was a health concern. In the 2019 Quality of Life survey, mental health was among the top three health concern for all communities, with percentages as high as 41% of survey respondents identifying that mental health was a health

concern. More survey respondents identified mental health as a health concern which could be a result of more individuals feeling that they or their community have more mental health issues or there is decreased stigma and more acceptance to acknowledging mental health as a concern.

According to CHIA data on mental health admissions from 2007 to 2014, Chelsea, Revere and Winthrop had higher age-adjusted rates per 100,000 of mental health admissions in 2007; whereas, in 2014, both Revere and Winthrop are below the state average admissions and Chelsea residents' mental health admissions increased.

Mental Health Hospital Admissions, 2007 – 2014
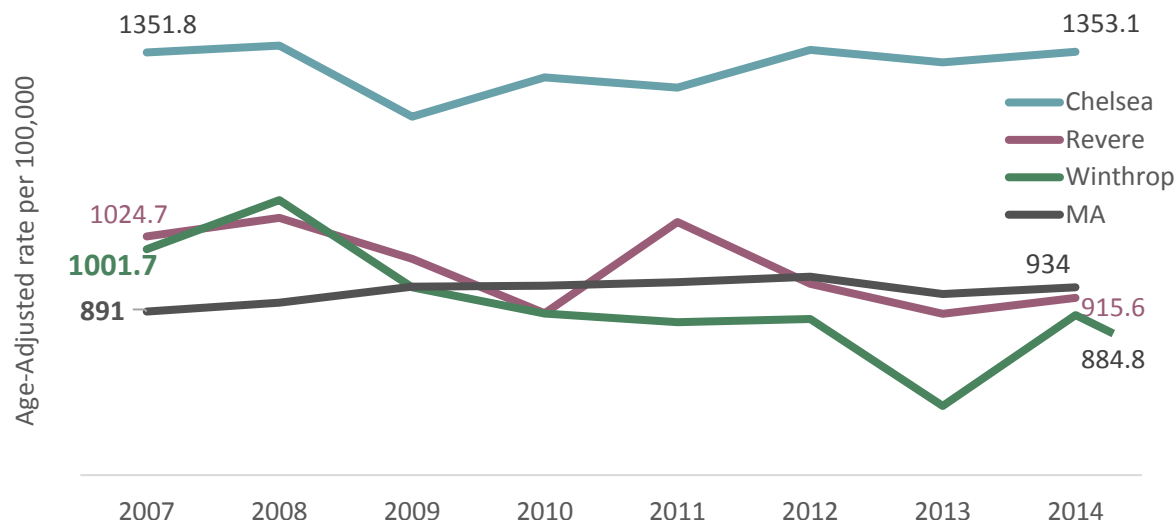
Data Source: Center for Health Information and Analysis (CHIA) -Each chronic disease indicator is calculated by analyzing the primary diagnosis code associated with the emergency department visit or hospitalization. The following ICD-9-CM diagnosis codes were used to identify Mental health: 290-319**

Mental health was consistently mentioned across all focus groups. Specifically, help for depression and anxiety was brought up as a need that has gone unmet across several populations, including those in recovery or current substance users, youth, elders and veterans, especially due to trauma. Additionally, focus group participants mentioned that North Suffolk residents are dealing with stress and pressure, but oftentimes mental health is not taken seriously. The feeling of social isolation was also brought up in other focus groups by community residents, which could be adding to the decreased mental health of the community. Key informant interviews shed light on the elderly and Muslim communities' social isolation. A key informant mentioned that Muslims stay in their own group and are isolated from the larger community. Elders also tend to be and live alone without any company. According to ACS data from 2012 to 2016, Chelsea, Revere and Winthrop all have higher percentages of elders, those who are 65 and older, who live alone compared to MA (45% in Chelsea, 34% in Revere and 38% in Winthrop versus 30% in MA).

While 46% to 50% of North Suffolk survey respondents rated their satisfaction with social activities and relationships "Very Good" or "Excellent," focus groups from all communities discussed the desire and need for more activities that bring the community together. One participant from Revere mentioned that Revere needs more activities that bring all of Revere together—not just one particular age group or race/ethnicity, but everyone so that individuals can meet others in their community and make more relationships within the community. Events like this could reduce the social isolation felt in North Suffolk and help promote better social and emotional well-being.

Based on data from the 2015 & 2017 YRBS in Chelsea and Revere, the 2018 Winthrop PNA, and the 2017 MA Youth Health Survey, North Suffolk middle and high school youth reported feeling sad or hopeless for two weeks at higher percentages than MA middle and high school youth.

Percent of Middle and High School Students Reporting Feeling Sad or Hopeless for Two Weeks
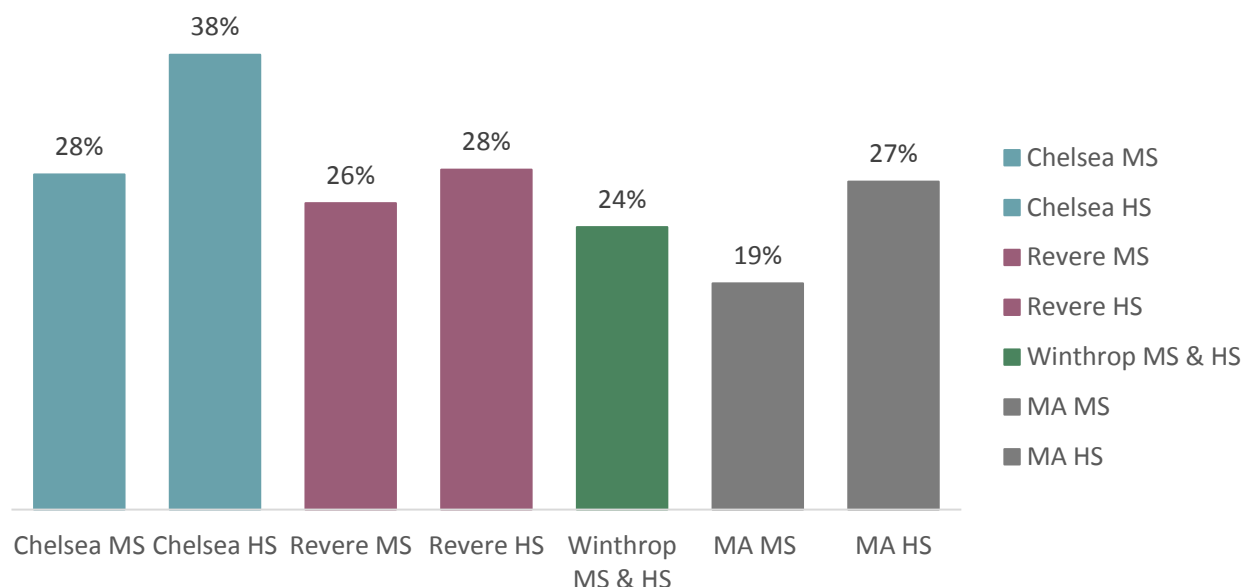
Data Source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

Similar to substance use disorder services, there is also a lack of culturally and linguistically competent mental health providers and resources. Compared to 14.8% of non-Hispanic Latino survey respondents, 20.8% Hispanic/Latino survey respondents rated their mental health as being "Poor" or "Fair." Focus group participants also touched on the influence of race and culture on mental health, stating that some races and cultures do not feel that mental health is an issue that affects them and if people are feeling sad, it is something that "they should just get over." There can be a mentality that prevails among the residents of color or residents of different cultures that "depression is for white people."

Aside from cultural competency, there is a disheartening scarcity of mental health services. A focus group participant discussed the long wait times that patients endure to receive care. Some individuals know that the wait times will be so long that they proclaim they are going to commit suicide in order to get care more rapidly. But, as this focus group participant mentioned, "No one should have to say, 'I'm going to kill myself' in order to get some service." While 9% of Massachusetts middle school youth and 12% of Massachusetts high school youth have seriously considered suicide, North Suffolk youth report higher rates of middle school youth seriously considering suicide. In Chelsea, 20% of their middle school youth have seriously considered suicide while 13% of their high school youth report seriously considering suicide. In Revere, 18% of their middle school youth have seriously considered suicide while 8% of their high school youth reported seriously considering suicide. In Winthrop, no comparison between middle school and high school youth can be made but their PNA reports a combined 14% of middle and high school youth reported seriously considering suicide.

The care delivery method for mental health resources and services should be reformed in new and alternative ways so that more individuals of all ages, religions, races, ethnic groups, socio-economic backgrounds and sexual orientation who need mental health care are able to receive quality and affordable care quickly.

Economic Stability and Mobility

According to the 2019 North Suffolk iCHNA Quality of Life survey, 23% of respondents selected poverty as a top health concern. In the 2014 and 2015 Quality of Life surveys, poverty was not considered a top five health concern for any of the North Suffolk communities. However, in 2019, 38% of Chelsea survey respondents and 28% of Revere survey respondents identified poverty among their most important health concerns. Impoverished residents are more likely to have worse health outcomes. Through the promotion of more employment and educational attainment opportunities, among other interventions, individuals can be provided more access to better incomes which then cultivates a more financially stable community for all.

> *"People are working 2-3 jobs just to make ends meet. And those jobs aren't great—they don't have good pay or benefits."*
> -Key Informant

With regard to economic status of the communities, the Economic Hardship Index (EHI) (Richard P. Nathan and Charles F. Adams, Jr. in "Understanding Urban Hardship," Political Science Quarterly 91 (Spring 1976): 47-62.), a combined measure of six variables, indicates that, compared with the statewide average EHI of 36.01, Chelsea (45.73) and Revere (38.44) have higher indexes, while Winthrop fares better with an EHI of 28.58.

Economic Hardship Index

	Winthrop	Chelsea	Revere	MA
Economic Hardship Index	28.58	45.73	38.44	36.01
Components of the index:				
Per Capita Income	$36,329	$21,722	$26,746	$39,463
Percent not HS grad (over 25)	5.44	29.29	17.66	10.60
Percent unemployed (over 16)	4.92	5.58	6.95	6.31
Percent dependent (under 18 or over 65)	36.5	34.84	33.62	35.68
Percent in poverty (below FPL)	7.72	18.65	14.25	12.19
Percent Crowding (units with >1 person/room)	1.32	9.175	5.27	2.03

Notes: The Economic Hardship Index is a standardized index across all census tracts in Massachusetts. Higher scores indicate greater economic hardship.

Employment: The working-age population is defined as individuals between the ages of 15 and 64. Based on ACS data from 2012 to 2016, 91% of Chelsea's age distribution is considered working age, 86% of Revere's population is considered working age, and 82% of Winthrop's population is considered working age. Additionally, the majority of households also have children, but, based on responses from the 2019 Quality of Life survey, 44% of Chelsea respondents, 38% of Revere respondents and 29% of Winthrop respondents with children ages 5 to 12 reported having difficulty finding after-school programs. Without appropriate child care access, families risk being limited to one income earner as one parent may have to stay home to care for young children or not be able to work jobs without flexible work times or schedules. Focus group participants from Revere shared that many of them know of one or more people who have to work more than one job just to make ends meet. One Revere resident shared that many people have to do this because everything is so expensive. Another expressed concern that some parents may be consequently neglecting their children because they are forced to work two to three jobs.

Education: According to MA DESE, North Suffolk has higher rates of high school dropouts. Compared to MA's 2% high school dropout rate from the 2017-2018 school year, Chelsea had a 7% high school dropout and Winthrop had a 4% high school dropout rate. Revere's high school dropout rate was the same as Massachusetts. In 2018, Revere and Winthrop had high school graduation rates fairly similar or the same as MA's high school graduation rate, whereas Chelsea had a much lower high school graduation rate of 67% vs. 88% in MA).

For rising seniors of the 2017-2018 school year, the most common plan after graduation for both Chelsea and Revere youth was attending a 2-year public college and their second most common plan was attending a 4-year public college. For Winthrop youth, the most common plan after graduation was to attend a 4-year private

college and their second most common plan was to attend a 4-year public college. These differences among youth of North Suffolk communities indicates the disparity of educational opportunities as more youth feel that they can attend, and afford, a private institution in Winthrop contrasted with Chelsea and Revere. Additionally, the third most common post-graduation plan for Chelsea youth was joining the workforce; whereas, the third most common plan after graduation for Revere was attending a 4-year private college and the third most common plan after graduation for Winthrop was attending a 2-year public college.

Plans After Graduation, 2017 – 2018 School Year

Plan	Chelsea	Revere	Winthrop	MA
4-Year Private College	8%	**19%**	**43%**	29%
4-Year Public College	**21%**	**27%**	**25%**	31%
2-Year Private College	0%	1.1%	3%	0.5%
2-Year Public College	**38%**	**37%**	**17%**	19%
Other Post-Secondary	2%	2%	0%	2%
Apprenticeship	0%	0.%	0%	0.4%
Work	**12%**	9%	0%	0%
Military	2%	1%	1%	2%
Other	5%	2%	2%	2%
Unknown	11%	2%	10%	5%

Data Source: MA DESE

From 2012 to 2016 ACS data, 88% of Chelsea residents did not have a college degree compared to 67% of Revere residents who did not have a college degree and 35% of Winthrop residents did not have a college degree. Whether it was having an associate degree, bachelor's degree, attending some college or master's degree of higher, Winthrop always had higher rates of post-secondary education attainment compared to Revere and Chelsea.

Educational Attainment, 2012 – 2016

Chelsea ▪ Revere ▪ Winthrop ▪ Massachusetts

Category	Chelsea	Revere	Winthrop	Massachusetts
No High School	22%	11%	1%	5%
Less than High School Graduate	33%	17%	5%	10%
High School Graduate	33%	39%	29%	25%
Associate Degree	4%	6%	9%	8%
Bachelor Degree	10%	13%	24%	23%
Some College	13%	19%	21%	16%
Master Degree or Higher	7%	6%	12%	18%
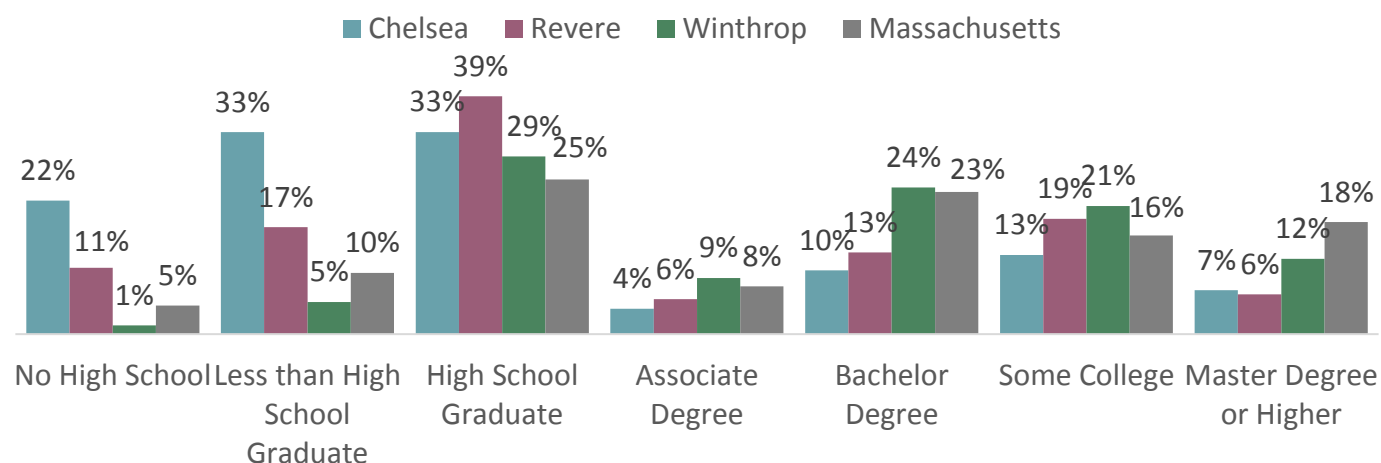
Data Source: 2012 to 2016 ACS

Income: A family or individual's income determines what kinds of foods, insurance, housing, utilities, clothing, and more, they are able to afford. According to ACS 2012 to 2016 data, the median household income for MA was $70,954. In North Suffolk, Winthrop's median household income was $62,997, Revere's was $51,482 and Chelsea's was $49,614. Racial and ethnic income inequality statewide and in North Suffolk is significant. Compared to the $70,954 median household income in MA, Black or African American MA residents have a median household income of $44,117. North Suffolk Black or African American residents have somewhat higher household incomes in Chelsea ($46,000) and Revere ($62,537). Based on the median household income by race/ethnicity, in North Suffolk compared to MA and in almost every racial and ethnic category, individuals of color have higher incomes in North Suffolk than MA, except Asian. However, certain population groups have a smaller, overall sample size so certain percentages may appear higher due the effect of a small sample size.

Median Household Income by Race/Ethnicity, 2012- 2016

	Chelsea	Revere	Winthrop	MA
Overall	$49,164	$51,482	$62,997	$70,954
Black alone	$46,000	$62,637	Not enough data	$44,117
Asian alone	$42,478	$70,455	Not enough data	$82,020
Latino	$50,298	$56,497	$66,726	$37,100
Multi-race	$56,149	$67,722	$40,880	$52,864
White Non-Hispanic	$50,855	$47,469	$63,892	$77,261
Some Other Race alone	$35,938	$68,073	Not enough data	$35,169
White alone	$49,593	$49,439	$64,219	$75,387

Note: Certain population groups have a smaller overall N so certain percentages may appear high due the effect of a small sample size. *Data Source: American Community Survey (ACS), 2012-2016*

Other Areas of Shared Concern

Although environmental issues and concerns were ranked as the second most important health concerns from the 2019 Quality of Life survey, environment was not identified as a core health priority by the NSiCHNA Steering Committee. However, this does not mean that environmental concerns will not be addressed within the North Suffolk communities as all communities had environment in their respective community top 5 rankings of health concerns. Additionally, although childhood obesity and food insecurity were not directly chosen as priority areas to focus on, both of these issues present major issues to North Suffolk youth and families. Environmental concerns, childhood obesity and food insecurity are important issues to the North Suffolk community and to their health and will be addressed though they are not specifically targeted through the CHIP.

Environmental Concerns

While Chelsea and Revere residents have identified health concerns with the environment in both the 2015 and 2019 Quality of Life surveys, Winthrop has consistently identified the environment to be their primary and/or secondary health

> *"You do not feel good about where you live if there's trash everywhere."*
> -Chelsea Focus Group Participant

concern based on their 2014 and 2019 Quality of Surveys. As environment ranked in different places for all the North Suffolk communities, this suggests that the environmental effects on health might be more pertinent for some community members versus others and are still important to address within the iCHNA.

Environmental concerns can touch on a wide range of issues. For instance, in Chelsea, a focus group participant mentioned that they have environmental concerns because of the amount of trash in Chelsea. In Revere, a focus group participant mentioned that they have environmental concerns because of the surplus of rats. In Winthrop, a focus group participant said the community had seen residents aged 40-50 die from issues unrelated to substance misuse, but instead from issues related to environmental cancers and diseases. Based on the results from the 2019 Quality of Life survey, the table below shows how the region ranked their top five most important environmental concerns as well as how each community ranked their top most important environmental health problems.

	Regional Environmental Concerns	Chelsea's Environmental Concerns	Revere's Environmental Concerns	Winthrop's Environmental Concerns
1	Outdoor Air Quality	Trash/Litter	Trash/Litter	Airport and Airplanes
2	Trash/Litter	Outdoor Air Quality	Outdoor Air Quality	Outdoor Air Quality
3	Airport and Airplanes	Water Pollution	Water Pollution	Water Pollution
4	Water Pollution	Airport and Airplanes	Noise	Noise
5	Noise	Indoor Air Pollution	Indoor Air Pollution	Trash/Litter

Data Source: 2019 Quality of Life Survey

By simply examining the region's environmental concerns, Chelsea and Revere's community members' concerns on indoor air pollution would be missed and the effect of airplanes and airports on Winthrop's community members would be underestimated. While environmental concerns can impact community members' lives through different mechanisms, the health concerns are still present in North Suffolk and are still an area to tackle in order to better the region's health.

Childhood Obesity and Food Insecurity

Childhood obesity has been a consistent and chronic concern for North Suffolk families and youth. According to the public school districts' data and from MDPH reports, Chelsea, Revere and Winthrop all have higher percentages of overweight or obese public school students compared to Massachusetts.

Percent of Overweight or Obese Public School Students

Grade	Chelsea (2018-19)	Revere (2018-19)	Winthrop (2014-15)	MA (2014-15)
1st Grade	47%	42%	35%	28%
4th Grade	57%	52%	37%	34%
7th Grade	62%	44%	37%	34%
10th Grade	49%	41%	36%	33%

Data Source: Chelsea Public Schools, Revere Public Schools, Winthrop Public Schools, & Massachusetts DPH

While childhood obesity presents numerous downstream health complications for the individual, such as increased risk for cardiovascular disease, diabetes, asthma, and depression, childhood obesity is also indicative of upstream public health concerns such as food insecurity. Focus group participants from Chelsea and Revere noted that there is little access to healthy and affordable food or restaurants compared to the overabundance of fast food restaurants. Survey respondents identified prices and quality of food as the main factors that affect where they shop for food. Additionally, all of the North Suffolk communities have more than half of their residents within the "SNAP Gap." The SNAP (Supplemental Nutrition Assistance Program) Gap is the difference between the number of low-income Massachusetts residents receiving MassHealth who are likely SNAP eligible and the number of people who are actually receiving SNAP. If potentially eligible SNAP participants are not receiving SNAP benefits, this implies that there are families who are struggling to pay for food for their household due to lack of funds and social support resources. This could result in families only being able to afford cheaper, and typically less nutritious, foods and perpetuating the cycle of childhood obesity in the community.

Number of Residents Receiving SNAP versus Number of Residents who may be Eligible for SNAP

	SNAP	SNAP Gap #
Chelsea	8,097	11,551
Revere	7,943	13,027
Winthrop	1,567	1,772

Data Source: The Food Bank of Western Massachusetts, accessed:
https://public.tableau.com/profile/food.bank.of.western.ma#!/vizhome/SNAPGap2018/DistrictData

Conclusion

The Integrated Community Health Needs Assessment and the Community Health Improvement Plan that ultimately emerges from its findings were made possible through the collegial spirit and generous investment of time and ideas by its many partners. Our health and social services providers, community officials, staff members of municipal departments and other collaborators always kept the wellbeing of the three communities' residents first and foremost in their sights as they worked together over a full year's time to conduct the assessment. We are grateful to everyone who touched this process and enhanced the results.

In planning and conducting the iCHNA, we strove to be inclusive of the diverse segments of our communities both in establishing the committees that carried out the work and in our outreach to gather accurate, useful data about our residents. We believe the iCHNA and the CHIP priority issues that emerged are reflective of our strong community engagement.

In this 2019 assessment, we found via primary data collection that economic insecurity and housing cost issues are among our communities' highest areas of concern. This is supported by the secondary data for the communities. This is despite frequent national news reports of record stock market highs and low unemployment rates. Many residents are working but still not able to keep up with the costs of living. A third area of concern is behavioral health, particularly substance use disorders and youth mental health. These concerns are almost identical with those found through a similar community health needs assessment being conducted in 2019 within the City of Boston.

As mentioned earlier in this report, the municipal executives of Revere, Chelsea and Winthrop - the Mayor, City Manager and Town Manager - touched off the iCHNA in Spring 2018 when they requested that area health care providers conduct their upcoming assessments jointly for the first time. In addition to the initial spur of this request, the CHIP will benefit from a new motivation for continuing collaboration over the next three years and beyond. The CHIP will create opportunities to identify 'low hanging fruit' initiatives that can be implemented immediately with few resources, as well as initiatives needing funding to move forward. We anticipate that well thought-out proposals emanating from our CHIP working groups to address our region's needs stand a good chance of receiving funding to enable their implementation. This funding could be from federal and state resources, foundations, as well as new funding available to our communities for community health improvement via the Determination of Need funding mechanism administered by the Massachusetts Department of Public Health.

The transition from the issuing of this report to the formation of working groups that are designing strategies to address priority concerns requires that we create a structure and processes that can support our efforts over the next several years. To that end, throughout 2019 and 2020 we will work together to create a sustainable foundation for meeting, decision-making and tracking our work. Based on the robust participation of all parties over the past year, we look forward optimistically to ongoing collaboration that will have measurable, positive impacts on the health and quality of life of residents of our three communities.

Next Steps: Community Health Implementation Plan (CHIP)

Three CHIP working groups have been formed in response to the priority meeting:

- Behavioral Health, including mental health and substance use disorders with a focus on youth and families
- Economic Stability and Mobility
- Housing Affordability and Stability

Each CHIP group met several times to create a goal, define three-year objectives, and brainstorm strategies to meet the objectives. At the behest of the Winthrop Board of Health, a working group to address Environment-related Health Concerns will be coordinated. Although it was not one of the top 3 priorities, it was a shared concern among residents of the communities. A full CHIP Action Plan will be published in Fall, 2019.

Appendix A: Steering Committee Members & Collaborating Organizations

Steering Committee:

Organization	Name
City Manager of Chelsea	Tom Ambrosino
Mayor of Revere	Brian Arrigo
Town Manager of Winthrop	Austin Faison
Beth Israel Deaconess Medical Center	Kelly Orlando
Cambridge Health Alliance	Kathy Betts
CAPIC	Bob Repucci
Chelsea Health and Human Services	Luis Prado
Chelsea Board of Health	Dean Xerras
City of Revere SUDI Office	Julia Newhall
East Boston Neighborhood Health Center	Michael Mancusi
Healthy Chelsea	Jennifer Kelly
Massachusetts General Hospital	Leslie Aldrich
MGH Revere	Roger Pasinski
Melrose-Wakefield HealthCare	Eileen Dern
Mystic Valley Elder Services	Dan O'Leary
North Suffolk Mental Health Association	Kim Hanton
The Neighborhood Developers	Rafael Mares
Revere Board of Health	Eric Weil
Revere Cares	Sylvia Chiang
Revere Healthy Communities Initiative	Dimple Rana
Winthrop Board of Health	Susan Maguire
Winthrop Director of Public Health	Meredith Hurley
Winthrop CASA	LeighAnn Eruzione

Subcommittee Members

Organization	Name
Beth Israel Deaconess Medical Center	Tanya Leger
CAPIC	Bob Repucci
CAPIC	Kerry Wolfgang
CAPIC	Gladys Agneta
CAPIC	Lee Nugent
Cambridge Health Alliance	Renee Cammarata Hamilton
Cambridge Health Alliance	Jean Granick
Chelsea Board of Health	Dean Xerras
Chelsea Collaborative	Glays Vega
Chelsea Collaborative	Sylvia Ramirez
Chelsea Collaborative	Dini Paulino
Chelsea Police Department	Dan Cortez
Chelsea Thrives	Vicente Sanabria
City of Chelsea	Paula McHatton
City of Chelsea	Tom Ambrosino
City of Revere, SUDI office	Julia Newhall
City of Revere	Robert Marra
Beth Israel Deaconess Medical Center	Tanya Leger
East Boston Neighborhood Health Center	Joanna Cataldo
East Boston Neighborhood Health Center	Brett Phillips
For Kids Only	Briana Flannery
GreenRoots	Roseann Bongiovanni
Healthy Chelsea	Maddy Herzog
Healthy Chelsea	Jen Kelly
Healthy Chelsea	Ron Fishman
Healthy Chelsea	Ryan Barry
Massachusetts General Hospital	Nikki Reyes
Massachusetts General Hospital	Cassandra Tavaras

Massachusetts General Hospital	Sara Wang
Massachusetts General Hospital	Kelly Washburn
MGH Revere	Roger Pasinski
Metropolitan Area Panning Council	Barry Keppard
Metropolitan Area Panning Council	Mark Fine
Metropolitan Area Panning Council	Sharon Ron
Mystic Valley Elder Services	Shawn Middleton
Mystic Valley Elder Services	Lauren Reid
The Neighborhood Developers	Mary Coonan
The Neighborhood Developers	Vanny Huot
Revere CARES	Sylvia Chiang
Revere Healthy Communities Initiative	Dimple Rana
Revere Resident	Dhriti Dhawan
Winthrop Board of Health	Susan Maguire
Winthrop CASA	LeighAnn Eruzione
Winthrop Resident	Deanna Faretra
WIC	Gisabel Horta
Vitra Health	Romina Wilmot

Appendix B: Focus Group and Key Informant Interviews List

Focus Group/Interview	Type	Participant(s)	Total Number of Participants
Focus Group	Professionals/Staff	Revere CARES Coalition	19
Focus Group	Professionals/Staff	MGH Chelsea Community Health Workers	30
Focus Group	Professionals/Staff	North Suffolk Mental Health staff	12
Focus Group	Elders	Winthrop Senior Center/Council on Aging participants	8
Focus Group	Community Residents	Revere Community School students (Spanish speakers)	8
Focus Group	Youth	Revere Youth Health Leadership Council	12
Focus Group	Youth	GreenRoots ECO Youth Crew	5
Focus Group	Professionals/Staff	Winthrop CASA Board	6
Focus Group	Youth	Chelsea Youth Food Movement	8
Focus Group	Community Residents	People in recovery in Revere	16
Focus Group	Professionals/Staff	Winthrop Board of Health	3
Focus Group	Professionals/Staff	CONNECT staff	8
Focus Group	Professionals/Staff	Healthy Chelsea Coalition	10
Focus Group	Community Residents	Residents from The Neighborhood Developers (TND) housing, Revere	10
Focus Group	Community Residents	Chelsea Collaborative clients (Spanish speakers)	5
Focus Group	Community Residents	CAPIC clients (Spanish speakers)	7
Focus Group	Community Residents	First Congregational Church Food Pantry clients	6
Focus Group	Elders	MGH Chelsea Food Pantry clients (Spanish speakers)	10
Focus Group	Youth (ages 18-24)	Year Up students	5
Focus Group	Youth	Revere Power of Know Club	7
Focus Group	Youth	Winthrop CASA Youth Board	9
Focus Group	Professionals/Staff	Stakeholders in the Next Stop Revere Master Planning Process	7
Interview	Professional/Staff	Senior Pastor, Revere	1
Interview	Professional/Staff	Chelsea Collaborative	1
Interview	Professional/Staff	CAPIC staff	1
Interview	Professional/Staff	CAPIC staff	1
Interview	Professional/Staff	CAPIC Board of Directors	1
Interview	Professional/Staff	HAVEN staff member	1
Interview	Professional/Staff	WIC Program, Chelsea/Revere	1
Interview	Professional/Staff	Nurse at East Boston Neighborhood Health Center, Winthrop	1
Interview	Professional/Staff	Pastor, Chelsea	1
Small Group Interview	Professional/Staff	TND staff	3
Interview	Professional/Staff	Chelsea Department of Health & Human Services	1
Interview	Professional/Staff	Mystic Valley Elder Services	1
Interview	Professional/Staff	Chelsea Soldiers' Home	1

Focus Group/Interview	Type	Participant(s)	Total Number of Participants
Interview	Professional/Staff	North Suffolk Mental Health staff member	1
Interview	Professional/Staff	Winthrop Housing Authority	1
Interview	Professional/Staff	Healthy Streets Outreach Program	1
Interview	Professional/Staff	City of Revere Substance Use Disorders Initiative Office	1
Interview	Professional/Staff	City of Revere Veterans Office	1
Interview	Professional/Staff	Roca, Chelsea	1
Interview	Professional/Staff	DCF Harbor Area Office, Chelsea	1
Interview	Professional/Staff	Chelsea LGBTQ Coalition staff member	1
Interview	Professional/Staff	Chelsea LGBTQ Coalition staff member	1
Interview	Professional/Staff	Revere Chamber of Commerce	1
Interview	Professional/Staff	Local government official, Chelsea	1
Interview	Professional/Staff	Local government official, Winthrop	1
Interview	Professional/Staff	Winthrop Parents Network member	1
Interview	Professional/Staff	Cambridge Health Alliance	1
Interview	Professional/Staff	Native American Lifelines	1
Interview	Professional/Staff	Moroccan American Connections in Revere (MACIR)	1

Appendix C: Full Qualitative & Quantitative Analysis

<u>Quality of Life Survey Data Analysis</u>

As mentioned, in order to collect a robust and comprehensive sample of survey respondents, surveys were available in multiple languages. The majority of participants took the English survey (92%), followed by the Spanish survey (7.40%), Portuguese survey (0.38%) and the Arabic survey (0.22%). Due to the low response rate of the Portuguese and Arabic surveys, they were re-translated to English using Survey Monkey. However, because over 100 surveys were completed in Spanish, they were translated to English using R.

Though data analysis primarily focused on calculating the frequencies of responses per question, it was essential to ensure that the correct denominators were utilized. For most questions, the denominator calculated was based on the total number of individuals who responded to that particular question. However, when questions contained phrases such as "Select all that apply" or other phrases directing respondents to select multiple choices, the statistical software SAS was used to determine how many individuals responded to these sets of questions. The denominator then became the total number of people who selected at least one response. Assuring that the correct denominators were used in the overall and stratified results ensures that our frequencies are as accurate and precise as possible.

Since the survey was available to anyone who lived or worked in Chelsea, Revere or Winthrop, some analyses were done that solely focused on how residents of these communities responded. Residents were defined as those who responded that they either lived or lived and work in either Chelsea, Revere or Winthrop. The Data Analysis Subcommittee determined that the survey respondents who were foreign-born were a population of interest. The foreign-born population was defined as those who were residents (live, or live and work in community) and those who responded that they have lived in the United States within these parameters: "Less than one year," "one to three years," "four to six years," or "more than six years, but not my whole life." Those who responded that they have lived in the United States for their whole lives were defined as "non-foreign born" survey respondents. Youth were defined as those who responded that they were under 18 years old and seniors were defined as those who responded that they were 65 years old or older.

While cleaning the data, the analyst found an interesting pattern that echoed changing reactions to choices offered U.S. Census respondents regarding race and ethnicity. Individuals who identified as Hispanic/Latino grappled to respond what race they identified as. The question pertaining to race came before the question asking whether individuals identified as Hispanic/Latino. 116 survey respondents selected "other" as their race and wrote in a response that indicated that they were of Hispanic/Latino descent. One individual even wrote "Why isn't Hispanic/Latino an option?"

<u>**Qualitative Themes**</u>

The following themes related to community strengths, barriers to accessing services and resources, and top health concerns were found across multiple focus groups and key informant interviews in Chelsea, Revere, and Winthrop. The breakdown of themes within these categories provides insight into how residents and stakeholders view the health of their communities, and what improvements could be made to strengthen community health. Some people expressed positive and negative views on the same issues, based on their own experiences. Although this might seem conflicting, we mention both opposing views to give voice to the experiences of the residents. While some themes are applicable to all three communities, or two out of three communities, there are a few themes that were only applicable to Winthrop; this distinction is noted below where appropriate.

Community Strengths

Resilience was mentioned several times as a strength in Chelsea and Revere. Participants in both communities reported that the populations they work with or are a part of are strong willed and have a desire to access services to improve, despite all of the adversity they have faced. One participant in a staff focus group stated, "Despite the lack of access to resources, they do their best to try to receive help." Key informants and focus group participants stated that patients often advocate for themselves to try to obtain useful resources. In addition, a focus group participant from Revere stated, "It is a resilient city that overcomes its obstacles and perseveres." In addition, participants mentioned that there is a strong sense of community pride in Chelsea. Thus, it is evident that focus group participants and key informants believe that the people in these communities are key assets.

Diverse populations in both Chelsea and Revere. Multiple focus group participants readily and repeatedly talked about the rich diversity of people in Chelsea and Revere and the increase of ethnic and cultural groups without a lot of racial tension. According to one focus group participant in Chelsea regarding diversity, "…We are an immigrant city, you get to know about different people and make friends. I belong to a lot of groups." Additionally, one focus group participant in Chelsea stated, "I don't feel that, when I walk in Chelsea, people will judge me because of who I am". Many participants also talked about the wide range of restaurants representing a vast array of cultures in their communities, an advantage that other communities do not have. Participants across focus groups reported a desire to create more cultural events and ways to celebrate the diversity in Chelsea and Revere by uniting all of the different ethnic and racial groups so they are not separated in their own groups. Ultimately, participants really embrace this distinct quality of Chelsea and Revere.

Physical location and proximity to Boston is a strength for all three communities. Focus group participants and key informants across multiple populations discussed the benefit of being so close to Boston to access services and care. The physical location of these communities was a highlight for many focus group participants in particular. Participants also highlighted the proximity of services within Chelsea, such as schools, the food pantry at St. Luke's Episcopal Church, and services at MGH Chelsea including the food pantry.

The beach is a strength in both Revere and Winthrop. Multiple focus group participants stated that the beach in Winthrop is beautiful, and that the beach in Revere helps to bring the community together. One youth participant stated, "There are people from other cities that come to the beach; you get to learn about other people's cultures and it exposes us to different things that people in other cities that are predominantly White don't get". It is apparent that the beach not only aesthetically enhances Revere and Winthrop; it also serves as a common meeting place for people both inside and outside of these communities.

Fear around immigration status and the current political administration has created barriers to utilizing public benefits. Multiple focus group participants and key informants reported that many immigrants are afraid of the current political administration and discussed how this has stopped patients from accessing services such as SNAP benefits because they do not want their participation to affect their status in the country. Participants stated that people are generally afraid of the system and do not feel safe accessing resources; some key informants reported an increase in the number of families who have dropped out of social services due to fear and mistrust.

Insurance is a barrier for many patients, especially immigrants. A couple of key informants and focus group participants stated that it is difficult for immigrants to access medical and mental health services in Chelsea and Revere. A lot of the care that one receives is based on insurance that is unfortunately difficult to obtain. In addition, focus group participants mentioned that insurance payments are too high, especially for people who do not bring in a lot of income. Participants shared that it is difficult to access dental care because insurance is not affordable. Thus, some families do not carry insurance, which limits or hinders the ability to access health care. According to one key informant, children may have insurance but their parents may not. Key informants also mentioned that insurance may not cover all necessary costs and medicine that patients need so they go without care due to lack of finances and coverage. Lastly, participants in all three communities mentioned that some hospitals and clinics may not take certain insurance plans, creating an obstacle to receiving affordable care.

Language barriers between providers and patients makes it difficult to provide care. Many key informants and focus group participants touched on the idea that language barriers play a large role in preventing individuals from accessing services. Several key informant interviews showed that providers who do not speak another language or the language their clients/patients speak find it challenging to work with diverse populations, as this limits the assistance and information they can provide. A few key informants reported that providers often assume a certain level of English and literacy among residents but this is more problematic than helpful. One focus group participant mentioned there was a lack of Spanish interpreters in schools, which creates a barrier for Spanish-speaking parents when trying to communicate with teachers. In addition, key informants highlighted how the inability to speak a client or population's language also negatively affects people's perceptions; one key informant in Chelsea stated, "If we can't speak your language, that creates some problems". Lastly, key informants mentioned the need for more ESL classes that are affordable and convenient for community residents; this may help build more capacity among residents and begin to alleviate some of the language barriers.

Discrimination and lack of cultural sensitivity has led to unfair treatment in Chelsea and Revere. A couple of focus group participants stated they have experienced discrimination based on language barriers and cultural identity, while other participants talked about receiving unfair treatment because they are in recovery. Elders in Chelsea mentioned that people in the community do not support Hispanics. A couple of participants mentioned that there is a lack of "immigrant friendly" people in Chelsea. In addition, a few focus group participants mentioned they felt discriminated against when it comes to housing and landlords in the city. Participants also stated they experienced unfair treatment because they speak languages other than English. This finding is particularly striking because cultural diversity is viewed as a strength in these communities, yet unfair treatment based on culture and language is apparent. Key informants talked about the importance of organizations having staff that are culturally competent to work with different ethnic communities, especially among Spanish-speaking populations. Lastly, focus group participants and one key informant reported that some community members in Revere make comments on social media that are hurtful and thus negatively impact the cohesion of the community.

Social isolation and loneliness is high among elder and Muslim populations. Key informants reported that Muslims often stay in their own group and are isolated from the larger community; according to one key informant, there is sometimes a perceived "conflict between how to be a good Muslim and a good American at the same time. Showing cultural competence is important. In the schools' calendar planning during Ramadan, sometimes the schools don't even think about that. In any institution, you should have people from the ethnic communities be part of the planning team." In addition, key informants stated that elders choose to be alone; they live alone without company. This may lead to unaddressed health risks and affects how residents work with others to access care.

Chelsea could do a better job of messaging to be inclusive and welcoming of its LGBTQ residents. Key informants offered observations and suggestions. "For example, Chelsea could include and invite LGBTQ people in Get Fit programs and walking campaigns and increase awareness among school guidance counselors about our community. Also, some of our immigrant residents are from countries that have unaccepting attitudes towards LGBT issues, yet their families will have LGBT members who may have difficulties at home because of this. City leaders could talk with us about some scenarios regarding LGBTQ people and how to better interact with them. Maybe have occasional discussions on Chelsea Access TV. Also, the religious component of some of the street outreach services can be unwelcoming to LGBT people and there is a huge proportion of people who are LGBTQ who are on the street because of their sexual orientation."

Housing

Rising housing costs and gentrification are a burden on families, especially for people from low-income households. Most focus group participants and key informants across a variety of populations in Chelsea and Revere reported that current housing conditions have led to stress for individuals and families. High rental prices and poor housing conditions create a cycle that affects multiple areas of life; for example, one young focus group participant said that if the housing situation was better and people could spend more time at home rather than working to afford their housing, they would be able to spend more time meal prepping, eating healthier foods, and connecting with the community. In addition, necessary repairs never seem to be completed; participants mentioned they have broken doors and that landlords do not fix apartments. In addition, participants reported that gentrification is pushing people out, which threatens the closeness of the community as well as the multicultural diversity. One youth focus group participant said, "They are raising the price, kicking us out, and getting rid of the things we love." A key informant who works with parents and young children said, "Gentrification is happening in Chelsea, so people are moving more. Students are moving out of the district. Otherwise, it's the same population with the same needs but the cost of living is going up, so people are struggling more to make ends meet." Participants and key informants reported that a lack of affordable housing has increased the homeless population. Furthermore, the increase in rent and housing costs has led to overcrowded conditions, as people are doubling and tripling up in apartments because they cannot afford to live alone or pay for extra rooms. According to participants, upfront costs associated with renting an apartment are too expensive, which is a barrier to accessing affordable housing. Participants also highlighted a disconnect between the income residents are bringing in and the costs of rent; one participant stated, "You work harder to have a little extra income but the more money you make, the more you have to pay"; thus, even working two and three jobs does not provide the opportunity to easily keep up with rising housing costs, demonstrating a clear connection between employment and housing affordability. A key informant on the needs of formerly incarcerated people said housing has, by far become the number one issue: "It used to be jobs but now it's housing, which helps them keep a job or deal with substance use disorder. Guys would actually rather be in jail than outside on the streets, hustling for a place to stay, and it's getting worse." Lastly, elders mentioned the need for more housing that is separate from families with children. Overall, these findings from the focus group and interview data demonstrate how much the lack of affordable, stable housing has negatively impacted these communities; this is especially important because stable housing was reported as one of the necessities for creating a healthy community.

Mental Health

Mental health, especially untreated mental illness, is a huge concern for youth and adults. Mental health, notably anxiety and depression, was mentioned in a variety of focus groups as a need that has gone unmet across several populations, including people in recovery or current substance users, youth, elders, and veterans, especially due to trauma. Multiple participants reported that people were dealing with a lot of stress and pressure, but oftentimes mental health is not taken seriously. In addition, multiple focus group participants touched on the influence of race and culture on mental health, stating that some races and cultures do not feel that mental health is an issue that affects them-if people are feeling sad, it is something they should just get over-or that it is something that only affects other people; participants stated there is a mentality that exists that "Depression is for White people". Furthermore, the lack of services to remedy this issue is disheartening; there are not enough resources to adequately address mental health issues, but there is a long waiting list to access services. One focus group participant mentioned that wait times are long for patients to receive care, so much so that people will proclaim they are going to commit suicide to quickly get care; this participant stated, "No one should have to say 'I'm going to kill myself' in order to get some service". Across all focus groups and multiple key informant interviews, participants stated that more mental health services were necessary, especially more social workers and mental health counselors in schools. Participants also stated that self-care is important for populations dealing with stress for a variety of reasons, especially to ensure that people can take care of their families. Regarding formerly incarcerated residents, a key informant suggested that "Mental Health First Aid should be taught not just to first responders, but to the people themselves, i.e. the former inmates. It should even be taught to the corrections officers because the CO's have a high suicide rate!" As mental health needs continue to increase among a variety of populations, it is apparent that an increase in mental health services and providers would be highly beneficial.

Stigma is a large barrier to accessing services for mental health and treatment for substance use. Focus group participants and key informants in Winthrop reported stereotyping as a pressing health concern. One participant stated, "Once you've been labeled, you can't get away from this label (even if it's wrong)". In addition, another participant in Winthrop stated, "We do have a high alcohol use problem that is worse among adults, but it's hard for people to accept their own problems". Participants in multiple focus groups highlighted the existence of a "not in my neighborhood" or "not in my backyard" mentality among community residents, where people will keep their battles with addiction and substance use to themselves because they do not want others to know about it due to negative perception. Additionally, a few focus group participants talked about the stigma attached to people in recovery, and how this often leads to discrimination and unfair treatment when trying to get a job or access education. There is a need for more services for people in recovery; participants suggested creating a Recovery Community Center that provides resources and education to show support for those in recovery. Participants and key informants reported that stigma poses a barrier for people to access care for mental health services, stating that shame, guilt, and fear prevent those who are using substances from seeking treatment, support, and services; this in turn "stops people from living their lives".

Access to Healthy and Affordable Foods

There are too many fast food restaurants, and too few opportunities to access healthy, affordable foods. Many focus group participants and key informants touched upon rising obesity rates in Chelsea and Revere, especially because of easy access to fast food restaurants. Participants mentioned people turn to fast food restaurants when they are hungry because the food is cheaper and the portions are larger; this particularly helps when trying to feed a family that is on a budget or tight with money, highlighting the presence of food insecurity. This finding was present in a wide variety of populations, notably among multicultural populations. One youth participant in Chelsea stated, "But there is a lot of fast food places. Every corner, you can find a McDonalds and

Dunkin Donuts". Another youth participant stated, "There's like ten Dunkin Donuts in Chelsea for no reason. It's not even two miles long. We only need like two or three in there, but every corner, there's fast food". Across multiple focus groups, healthy food was deemed more expensive, and participants stressed the importance of providing more access to farmer's markets and organic foods; when participants were asked what would make a healthy community, all of them mentioned eating healthy foods and vegetables. This finding is especially important because there are limited grocery stores in Chelsea. Similarly, Winthrop focus group participants mentioned the lack of grocery stores that provide access to healthy foods, as there is only one grocery store in town that is expensive and has a limited variety. In addition to discussing the need to access healthier foods, a couple of focus group participants mentioned that learning healthy eating habits as well, not just eating vegetables and dieting, was important to improve the health of the community.

Physical Activity and Recreation

There is a need for more activities and opportunities to move around, especially among older youth, in all three communities. While discussing rising obesity rates, multiple focus group participants reported there is a lack of activities and opportunities for people to move around in the community; participants noted there were limited affordable opportunities to engage in exercise, sports and recreation programs, as well as a lack of walking trails and outdoor bike paths. Youth focus group participants said having more activities in the community would provide a positive outlet for youth to help them avoid turning to alcohol or drugs because they are bored and have nothing to do. One Winthrop focus group participant mentioned there are a lot of parties happening because there is "Not a lot to do in this town for teenagers; once you hit teen years it's mainly parties", and "There being nothing to do adds to the party culture". In addition, youth participants and a few key informants stated that creating more activities for the community, especially for youth, would encourage participants to be more active rather than sedentary, and promote more interaction with others in the community, especially to unite young people together. This finding is especially important because youth focus group participants stated they spend between 2 to 8 hours per day interacting with their cell phones and viewing screens. One youth focus group participant in Revere mentioned that youth are "Not pushed to be active in the summer". Focus group participants highlighted the need for more activities for older youth and teenagers in particular, as many participants reported there were plenty of opportunities for children. Focus group participants, particularly youth respondents, in Revere and Winthrop stated that a local YMCA would help them stay active. A key informant from the Muslim community reported that Moroccan youth in Revere who would like to play soccer don't feel welcomed by a soccer league in the city. Focus group participants also mentioned that there are too many hotels in Chelsea, stating that the space could be put to greater use in the community. In addition, more green and outdoor spaces would be welcomed in all three of these communities to promote physical activity.

Substance Use

Substance use remains a pervasive issue in Chelsea, Revere, and Winthrop and affects multiple areas of residents' lives. Many key informants and focus group participants mentioned the negative impact of substance use across multiple populations. Participants and key informants stated that many people are using substances to self-medicate. Alcohol and heroin were mentioned as substances used by adults in Winthrop. One participant in Winthrop stated, "We're surrounded by yacht clubs, there's drinking everywhere-we can't do a function without alcohol." Marijuana use and vaping, particularly the JUUL, were mentioned as concerns among youth across all three communities. Youth participants mentioned that vaping is prevalent among young people, and this is especially problematic because it can be used in front of teachers in school. One young person in a focus group in Revere mentioned that she saw a student who took a hit from a JUUL in class while the teacher was looking at him; he easily hid the JUUL in his sweatshirt. Another young person in Chelsea stated, "The other day, I walked around and saw a 10-year-old vaping. You see the middle schoolers vaping before school. It is easy to get them". According to focus group participants, youth do not perceive the JUUL as harmful or addictive and it seems like everyone is doing it. This low perception of harm also applies to marijuana; one focus group

participant in Revere stated, "Since marijuana has been legalized, the youth have been using it more. Sometimes, I have found youth using marijuana treating it like a game, like it's fun…" Participants and key informants stated that more services overall are needed to address addiction and substance use in all three communities.

Community residents hide issues related to substance use and addiction in Winthrop and Revere. Multiple focus group participants and key informants stated that people in the community are often not open about substance use and will keep it a secret from their neighbors. This finding was especially applicable in Winthrop because it is perceived as a small community, which participants stated is a double-edged sword because "Everyone knows everyone's business". This is also related to the presence of stigma that many participants mentioned in multiple focus groups. Participants mentioned they see needles or know of people's family members that have used substances, although people will not admit it because they are ashamed and want to keep the issue to themselves. Similarly, youth in Revere mentioned that people do not want to get help for substance use: "Instead of getting help, they just hide it until it becomes a larger issue, and then it just creates more problems".

Safety

Mixed perceptions of safety in Chelsea and Revere. A few focus group participants mentioned that there are areas in Chelsea and Revere that many people perceive as unsafe, but stated that they do in fact feel safe; a couple of elder focus group participants stated that Chelsea feels a lot safer now than it did before. However, one young focus group participant, a Chelsea resident, mentioned that her car had been broken into three times, causing her to feel unsafe in her neighborhood. In addition, when asked if they feel safe in their community, one participant said no because of racism, community violence such as shootings, and bad traffic; focus group participants were worried about safety after seeing needles in the park and knowing that people are overdosing. One participant in Revere mentioned that is was not safe around Bell Circle due to traffic and the lack of crossing guards. However, in another resident focus group in Revere, participants stated they feel very safe where they live. A few Spanish speaking focus group participants in Revere mentioned they felt safe while walking down the street and on the bus. Participants also said they want the community to be safer in the future, especially regarding immigrants. Key informants mentioned a change in the perception of Chelsea and Revere being unsafe with high crime rates from the past but it is evident that some of those perceptions still exist today; while this may be specific to certain areas of Chelsea and Revere, this finding should be explored further.

Transportation

Transportation was mentioned as both a strength and a challenge to accessing health and social services. Although Chelsea focus group participants noted that access to transportation, especially the 111 bus and the Silver Line, was a strength in Chelsea, participants also stated that transportation was a burden because buses are crowded and do not run frequently enough. Winthrop focus group participants mentioned there is a lack of public transportation, with only one bus running through Winthrop infrequently, making it difficult to access health services. One focus group participant in Winthrop talked about the lack of medical services in town, and the need to travel into Boston to get care, especially specialized care, which means "Parking, money, traffic, time, and people don't have it." Elders also mentioned that the MBTA RIDE needs to improve since many people rely on it to access services but people end up waiting for it for a long time. In addition, the roads were mentioned as an obstacle to getting around Chelsea and commuting to Boston. Many participants in Revere reported satisfaction with transportation in the city; participants mentioned that there is plenty of access to transportation with the blue line and several buses that run frequently. In addition, participants stated that the MGH Shuttle in Revere is more helpful for getting to appointments than the T. Thus, the availability of transportation in most of the communities is appreciated, but the logistics and execution of the various modes of transportation are not always helpful to community residents.

Environment

The streets in Chelsea and Revere need to be cleaned up. Participants stated there was too much trash in Chelsea; they mentioned they see people throw trash on the streets and feel that Broadway is really dirty. One participant stated, "You do not feel good about where you live if there's trash everywhere". Participants in Revere also mentioned that they often see dog mess on the streets. In addition, there are large rats in Revere and Chelsea. One participant stated, "If you're a normal sized rat, that's okay but when you're as big as my face, that's an issue". In addition, one young participant mentioned that she has seen needles on the ground while commuting to school with her mom. When asked what would make a healthy community, a clean environment with clean air and water without trash on the ground was mentioned in several focus groups. The importance of maintaining a clean environment without trash on the ground was prevalent throughout multiple focus groups.

The condition of the environment has made a large, negative impact on health, especially in Chelsea and Winthrop. Participants mentioned traffic, air pollution and noise from the airport, and coastal flooding as environmental issues, especially in Winthrop. Because of the airport, insomnia is an issue for residents. In addition, participants mentioned other diseases and conditions that affect the community, such as diabetes, high blood pressure, and cancer. Focus group participants and key informants stated they have noticed higher rates of breast cancer. In addition, residents have dealt with COPD, respiratory diseases, and asthma due to obesity, as well as poor environmental and industrial conditions; these concerns were mentioned in all three communities. One focus group participant in Winthrop stated, "We've buried a lot of people in their 40s and 50s that wasn't related to substance use", referring to the number of deaths in Winthrop because of environmental cancers and diseases.

Implications for Moving Forward

Need for stronger collaboration and cohesion among services and organizations. While multiple focus group participants commented on the strength of community organizations and stakeholders coming together, especially in Chelsea, participants also stated that it would be in everyone's best interest to strengthen cohesion among these stakeholders. Key informants talked about the importance of capitalizing on individuals who are invested and care about these communities to help improve them; working together was mentioned as an important factor in creating a healthy community. Many key informants talked about the importance of increasing communication and sharing more information with providers and networks to better connect services so that everyone is on the same page. One key informant said there a lot of organizations in Chelsea already working on improving the city but she was not sure how well they are working together: "If we're all taking care of the community together, we should all have communication between each other". A few key informants mentioned that there are many service providers in the community, especially Chelsea, that are all helpful but it would be better for everyone to work together to fully treat community residents. Multiple participants across Chelsea, Revere, and Winthrop, mentioned that it is imperative to come together to find common ground and work in the best interests of the community to create a more comprehensive system for holistic care, which would help improve the lack of communication among providers. A couple of focus group participants mentioned that more leadership accountability and buy-in, and leaders who educate themselves on issues in the community, would be advantageous. Lastly, several focus group participants mentioned the need for more community engagement and participation among residents of all ages to better unite and enhance these communities.

Resistance to change has hindered progress in Winthrop. Several focus group participants stated that people seem to be stuck in their ways and do not readily accept change. Participants also mentioned that people are complacent in Winthrop and resist new people or new things. It is evident that participants hope Winthrop will overcome division and come together to resolve issues to improve the community.

Need to be more proactive than reactive in Winthrop. Focus group participants mentioned that the community is very supportive when something tragic happens, such as an illness or tragedy, but when it comes to making change ahead of time, this usually does not happen. Oftentimes, residents react to issues as they come up but participants feel it would be beneficial to have a more proactive role. One participant stated, "It's a pretty responsive community in general; people try to stay in tune with what's going on in town. They care deeply about what happens in the town, but it's also a negative because we're not as proactive-it's a double-edged sword. It would be nice to be a little more proactive".

Additional Implications

All focus groups and key informant interviews touched upon the need for money and consistent, sustainable funding streams to make lasting change, continue vital programming, and expand services for community residents. Winthrop focus group participants in particular stated that new industry and updated infrastructure within the community would help bring in revenue and improve finances to address community needs that are often not viewed the same as surrounding communities such as Chelsea and Revere. In addition, multiple participants across all three communities advocated for more resources and funding for schools, a crucial step towards making important improvements in these communities. All in all, sustainable, dependable funding is required to expand services and create imperative changes in Chelsea, Revere, and Winthrop.

Appendix D: Data Placemats

DEMOGRAPHICS

Gender, ACS 2012-2016

- Chelsea: Male, 51%; Female, 49%
- Revere: Male, 52%; Female, 48%
- Winthrop: Male, 46%; Female, 54%
- MA: Male, 49%; Female, 51%
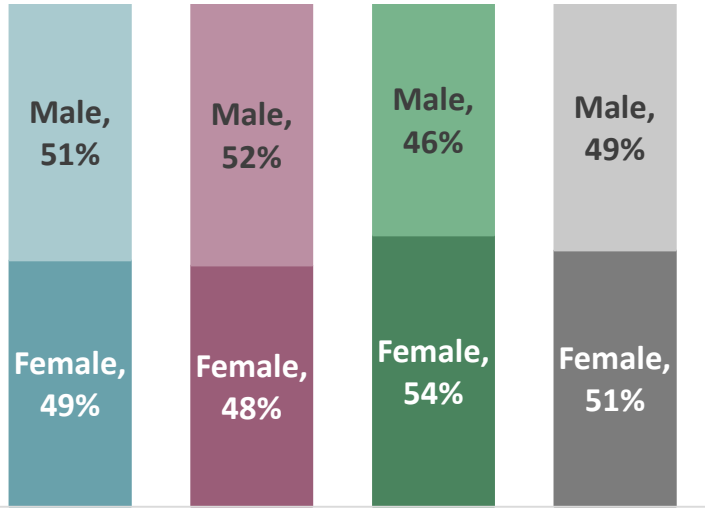
Data Source: American Community Survey (ACS), 2012-2016

Age Distribution, ACS 2012-2016

- Chelsea: 65 & over, 9%; 35-64, 37%; 25-34, 20%; 18-24, 8%; Under 18, 26%
- Revere: 65 & over, 14%; 35-64, 41%; 25-34, 18%; 18-24, 8%; Under 18, 19%
- Winthrop: 65 & over, 17%; 35-64, 44%; 25-34, 14%; 18-24, 5%; Under 18, 19%
- MA: 65 & over, 15%; 35-64, 40%; 25-34, 14%; 18-24, 10%; Under 18, 21%

Data Source: American Community Survey (ACS), 2012-2016

Median Age

- Chelsea 32.8
- Revere 39
- Winthrop 43.2
- MA 39.4
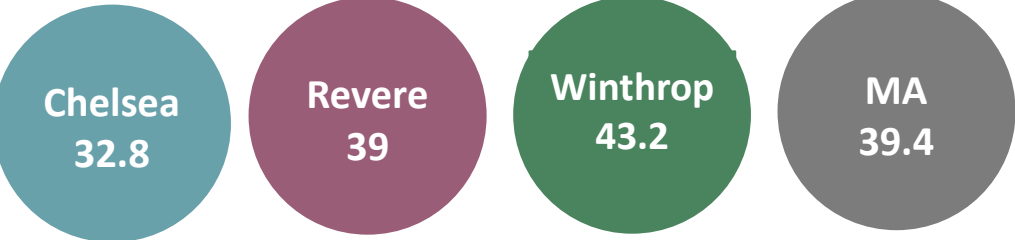
Data Source: American Community Survey (ACS), 2012-2016

Community Survey Respondents, by Gender

- Chelsea (N=549): Other*, 2%; Male, 23%; Female, 75%
- Revere (N=673): Other*, 3%; Male, 20%; Female, 77%
- Winthrop (N=578): Other*, 3%; Male, 22%; Female, 75%
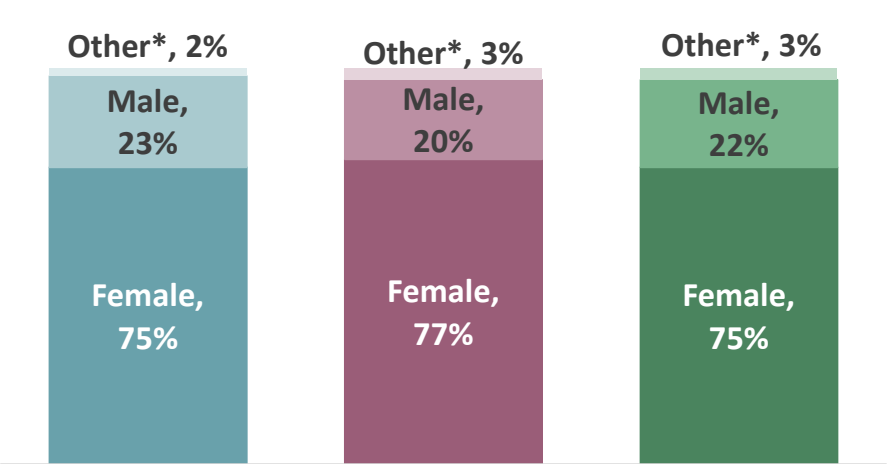
* Includes those who identify as non-binary/third gender, those who preferred not to say what their gender/sex was, or preferred to self-describe

Data Source: North Suffolk Community Health Needs Assessment Community Survey

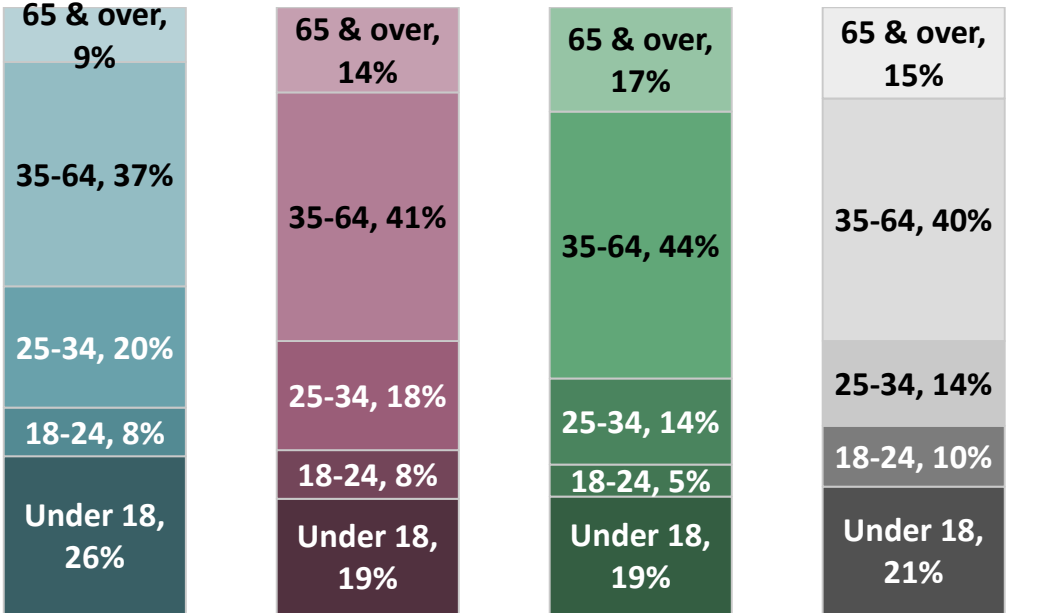## Community Survey Respondents by Age
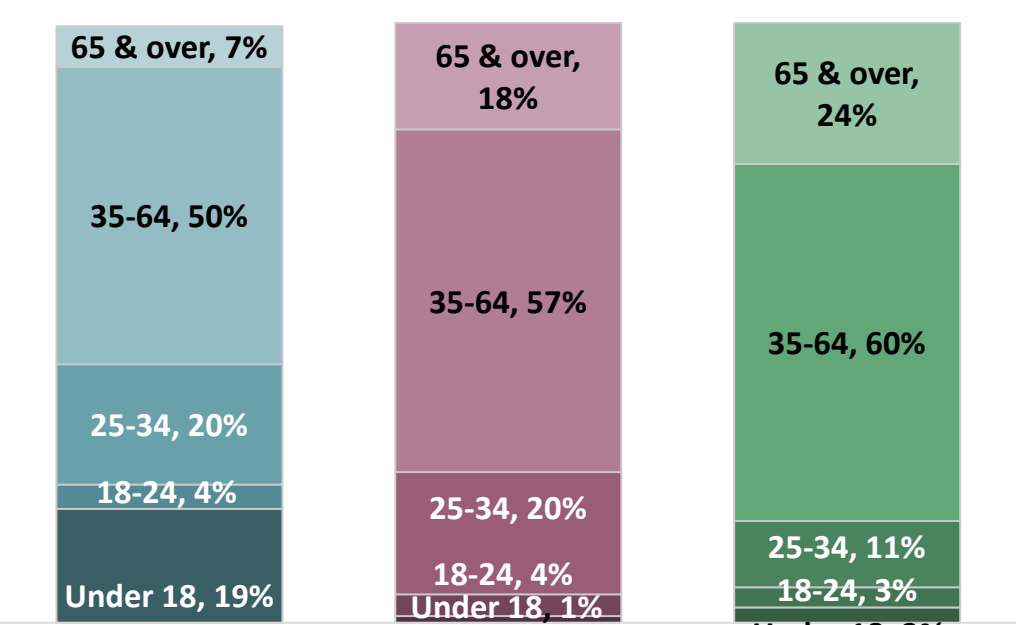
- Chelsea: 65 & over, 7%; 35-64, 50%; 25-34, 20%; 18-24, 4%; Under 18, 19%
- Revere: 65 & over, 18%; 35-64, 57%; 25-34, 20%; 18-24, 4%; Under 18, 1%
- Winthrop: 65 & over, 24%; 35-64, 60%; 25-34, 11%; 18-24, 3%; Under 18, 3%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Total Population

- Chelsea 38,244
- Revere 53,165
- Winthrop 18,031
- MA 6,742,143

Household Characteristics, ACS 2012-2016

	Family Households with Children	Married Family Households with Children	Other Family Households with Children	Female Householder with Children
Chelsea	62.9%	57.9%	67.5%	71.0%
Revere	49.1%	48.2%	50.7%	54.1%
Winthrop	41.6%	38.5%	50.5%	55.2%
MA	46.9%	42.9%	58.3%	61.7%

Data Source: American Community Survey (ACS), 2012-2016

Population with a Disability, ACS 2012-2016
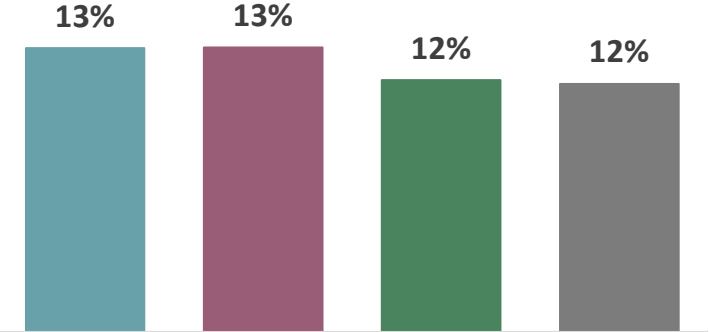
- Chelsea 13%
- Revere 13%
- Winthrop 12%
- MA 12%

Data Source: American Community Survey (ACS), 2012-2016

Type of Disability	Chelsea	Revere	Winthrop	MA
Ambulatory difficulty	8%	8%	7%	6%
Cognitive difficulty	6%	6%	4%	5%
Hearing difficulty	3%	3%	4%	3%
Independent living difficulty	5%	6%	5%	5%
Self-care difficulty	2%	3%	2%	3%
Vision difficulty	4%	3%	2%	2%

Data Source: American Community Survey (ACS), 2012-2016

DEMOGRAPHICS

Race/Ethnicity, ACS 2012-2016

	Chelsea	Revere	Winthrop	MA
Hispanic or Latino	**66%**	28%	12%	11%
Non-Hispanic White alone	23%	**58%**	**85%**	74%
Non-Hispanic Black or African American alone	5%	5%	0.5%	7%
Non-Hispanic Asian alone	3%	6%	1%	6%
Non-Hispanic Two or More Races	3%	2%	2%	2%
Non-Hispanic American Indian, Alaska Native, Native Hawaiian and Other Pacific Islander, or Some Other Race alone	0.8%	0.7%	0.1%	2%

Data Source: American Community Survey (ACS), 2012-2016

Language Proficiency, ACS 2012-2016

Legend: ■ Chelsea ■ Revere ■ Winthrop ■ MA

People speaking another language and do not speak English at all: Chelsea 11%, Revere 3%, Winthrop 0.4%, MA 1%

People speaking another language and do not speak English well: Chelsea 18%, Revere 9%, Winthrop 2%, MA 3%

Data Source: American Community Survey (ACS), 2012-2016

Language Characteristics of Public School Students, 2018-19

	Chelsea	Revere	Winthrop	MA
First Language not English	82%	65%	22%	22%
English Language Learners	38%	23%	8%	11%

Data Source: MA Department of Elementary and Secondary Education (DESE)

Percent of Hispanic/Latino Residents who Responded to the North Suffolk Community Survey

Chelsea (N=197): 61%
Revere (N=118): 26%
Winthrop (N=17): 4%

Includes those who answered 'Yes, I live here" and "Yes, I live and work here"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Primary Language of North Suffolk Community Survey Respondents
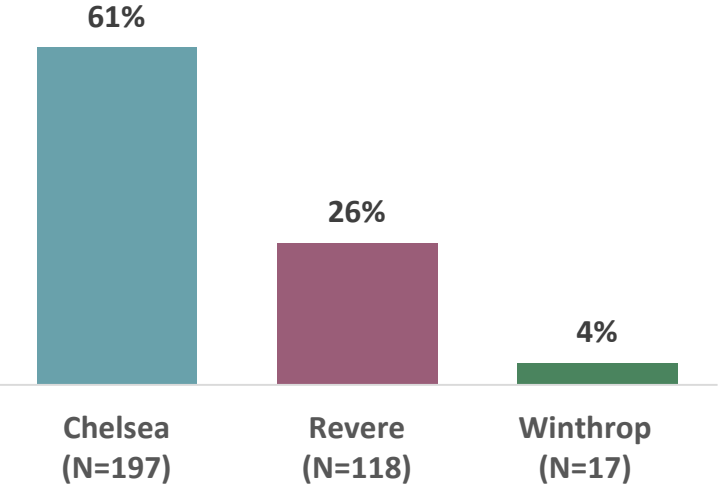

Combined: English, 83%; Spanish, 13%; Portuguese, Arabic, & Other, 4%

Chelsea: English, 71%; Spanish, 26%; Portuguese, Arabic, & Other, 3.2%

Revere: English, 80%; Spanish, 13%; Portuguese, Arabic, & Other, 6%

Winthrop: English, 97%; Spanish, 2%; Portuguese, Arabic, & Other, 2%
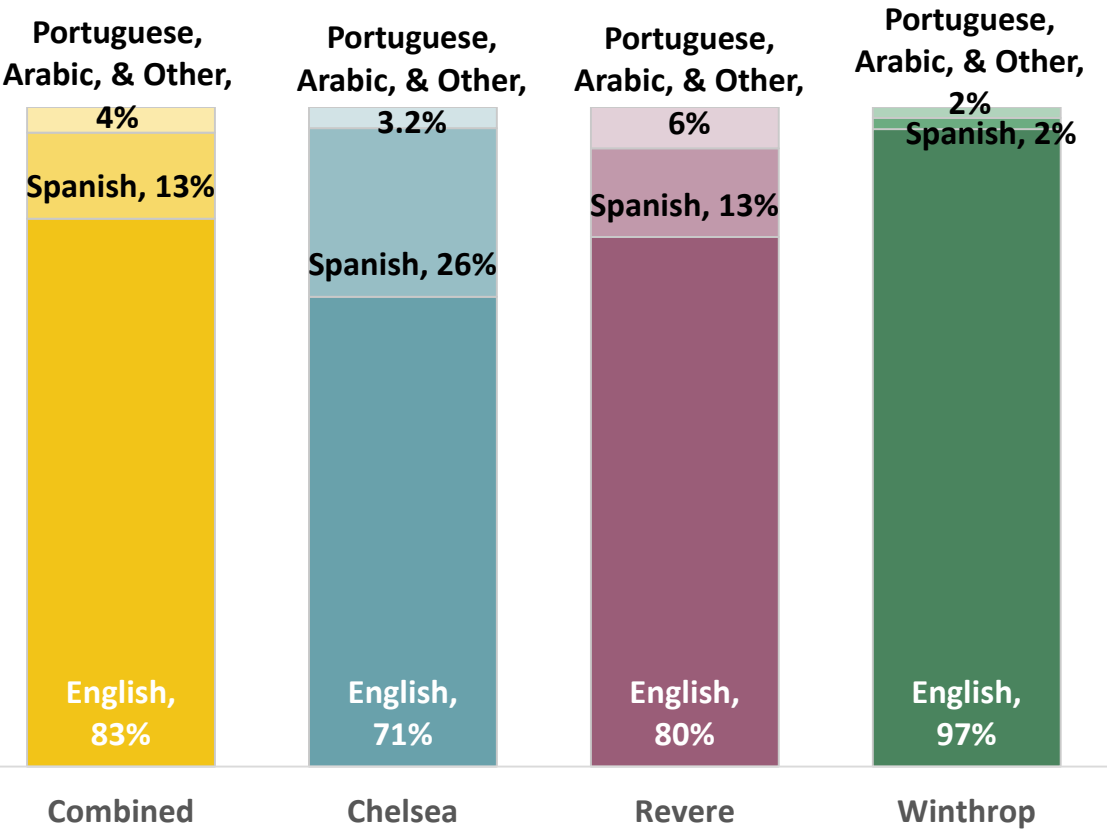
Other included: Hindi, German, Mandarin, Urdu Punjabi, French, Chinese, Haitian Creole, Mai Mai, Croatian, Nepali, Italian, Amharic, Somali
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Foreign-born Residents, ACS 2012-2016

Chelsea: 45%, Revere: 36%, Winthrop: 17%, MA: 16%

Select Places of Birth of Foreign-born Population

	Chelsea	Revere	Winthrop	MA
Africa	7%	16%	9%	9%
Asia	5%	16%	5%	30%
Central America	**70%**	22%	13%	9%
Europe	4%	14%	**45%**	22%
Northern Africa	2%	13%	9%	1.%
South America	9%	**28%**	21%	11%

Data Source: American Community Survey (ACS), 2012-2016

Percent of Foreign-born who Responded to the North Suffolk Community Survey

Combined: 23%, Chelsea (N=70): 33%, Revere (N=101): 26%, Winthrop (N=27): 9%

Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Top Health Concerns

Combined: Top 10 Health Concerns, 2019

Concern	%
Alcohol/drug use/addiction/overdose	74%
Environment	47%
Mental Health	45%
Housing	36%
Aging problems	26%
Poverty	23%
Cancer	22%
Vaping/e-cigs	19%
Violence	19%
Poor diet/inactivity	19%

Chelsea: Top 5 Health Concerns, 2019

Concern	%
Alcohol/drug use/addiction/overdose	75%
Housing	44%
Mental Health	41%
Poverty	38%
Environment	35%

Chelsea: Top 5 Health Concerns, 2015

Concern	%
Alcohol/drug use/addiction/overdose	57%
Crime & Violence	50%
Education	18%
Mental Health	17%
Environment	15%

Revere: Top 5 Health Concerns, 2019

Concern	%
Alcohol/drug use/addiction/overdose	73%
Mental Health	45%
Environment	42%
Housing	37%
Poverty	28%

Revere: Top 5 Health Concerns, 2015

Concern	%
Alcohol/drug use/addiction/overdose	71%
Crime & Violence	36%
Mental Health	21%
Environment	18%
Poor diet/inactivity	13%

Winthrop: Top 5 Health Concerns, 2019

Concern	%
Alcohol/drug use/addiction/overdose	73%
Environment	65%
Mental Health	49%
Cancer	42%
Aging problems	35%

Winthrop: Top 5 Health Concerns, 2014

Concern	%
Environment	47%
Alcohol/drug use/addiction/overdose	46%
Cancer	30%
Aging problems	14%
Mental Health	11%

Data Source: MGH Community Survey, 2014, 2015; North Suffolk CHNA Community Survey

Quality of Life

On a scale of 1-5, with 5 being the most agreeable, please rate how much you agree of disagree with the following statements:

Combined: Quality of Life, 2019

Statement	2019
Business, agencies, and orgs make it a better place to live	3.5
I feel connected to my neighbors & community	3.3
People and orgs support the community	3.7
Good place to grow old	3.4
Good place to raise children	3.4
Overall, satisfied with quality of life	3.4

Chelsea: Quality of Life, 2019 & 2015

Statement	2019	2015
Business, agencies, and orgs make it a better place to live	3.6	3.4
I feel connected to my neighbors & community	3.4	2.9
People and orgs support the community	3.8	3.3
Good place to grow old	3.1	2.6
Good place to raise children	3.1	2.5
Overall, satisfied with quality of life	3.3	2.9
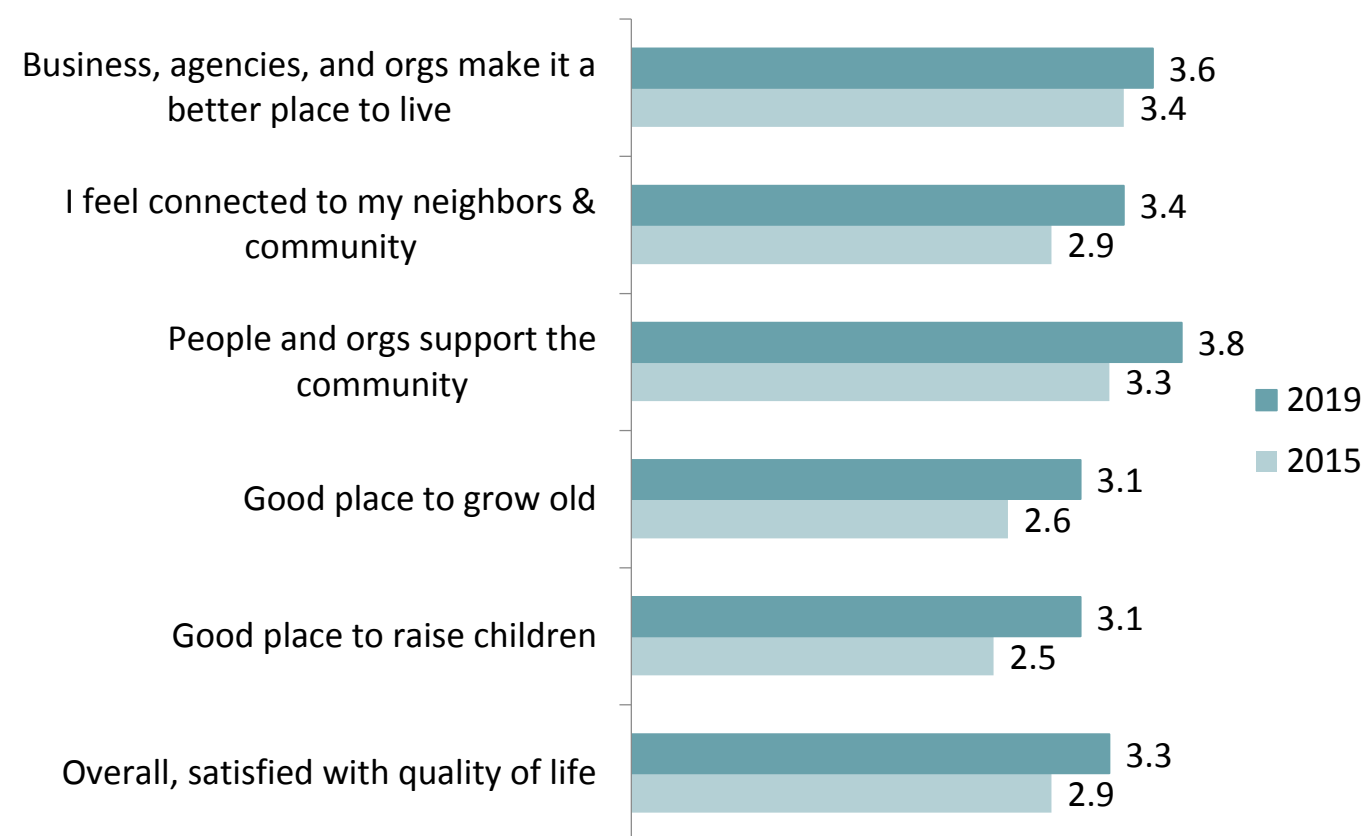
Revere: Quality of Life, 2019 & 2015

Statement	2019	2015
Business, agencies, and orgs make it a better place to live	3.3	3.2
I feel connected to my neighbors & community	3.1	3.1
People and orgs support the community	3.4	3.1
Good place to grow old	3.4	3.1
Good place to raise children	3.3	3.2
Overall, satisfied with quality of life	3.8	3.1
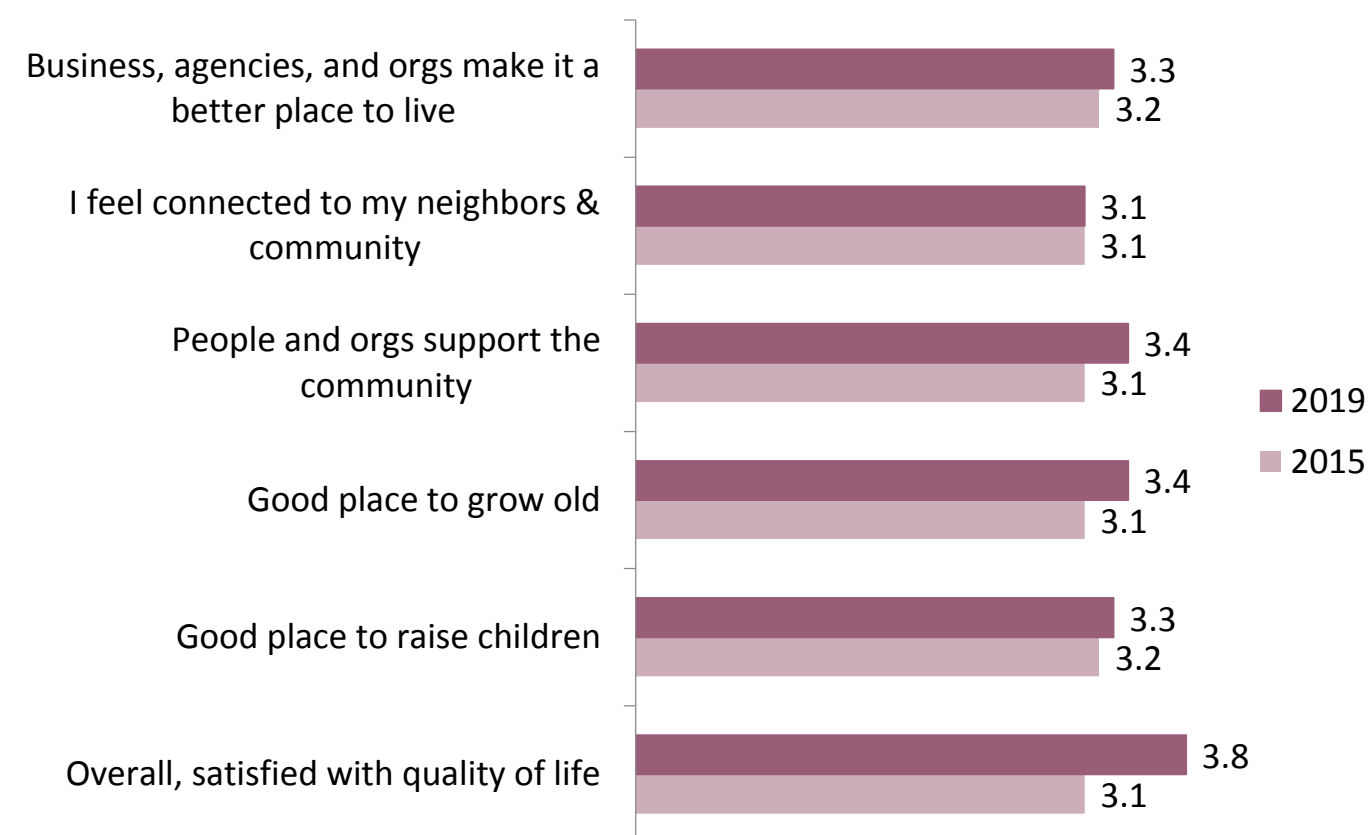
Winthrop: Quality of Life, 2019 & 2015

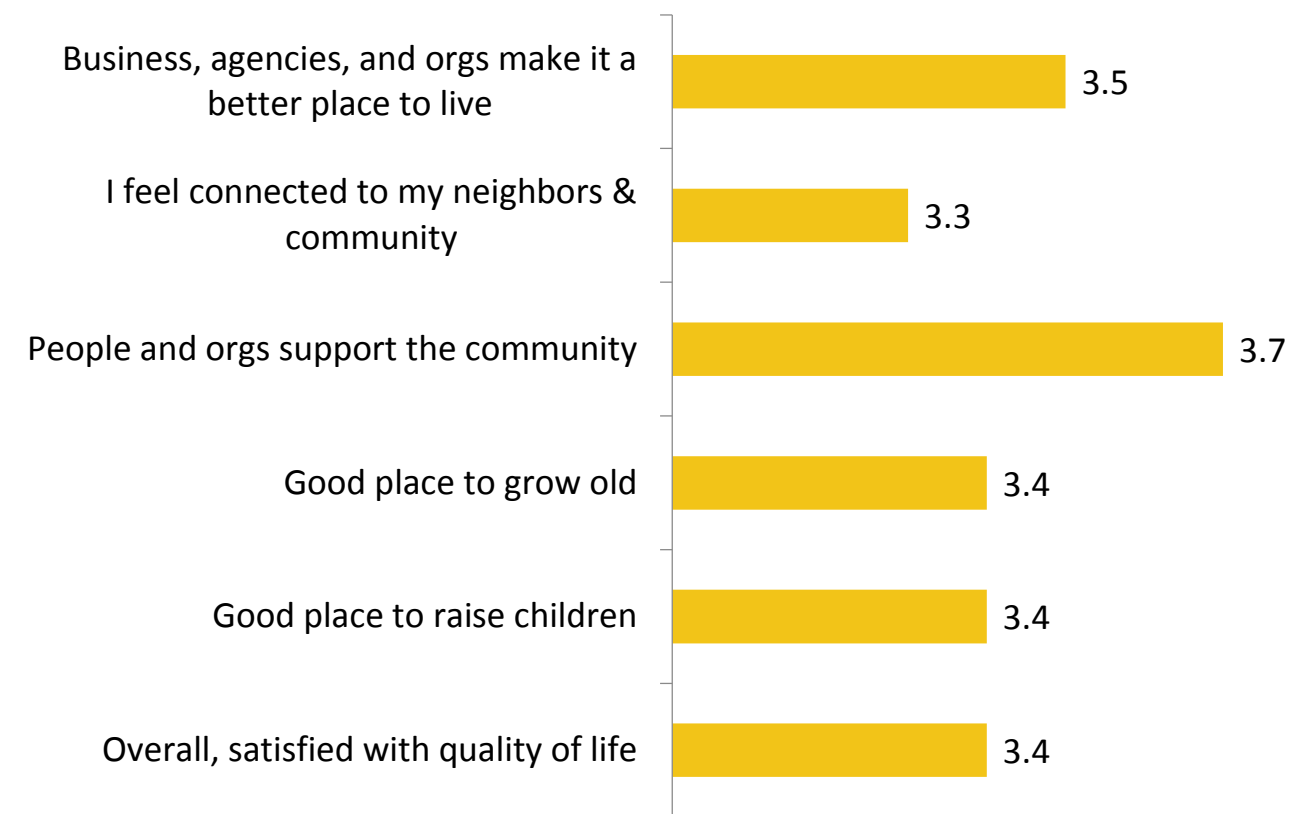| Statement	2019	2015
Business, agencies, and orgs make it a better place to live	3.6	3.9
I feel connected to my neighbors & community	3.5	3.8
People and orgs support the community	3.8	3.5
Good place to grow old	3.7	3.9
Good place to raise children	3.9	3.9
Overall, satisfied with quality of life	3.6	3.8
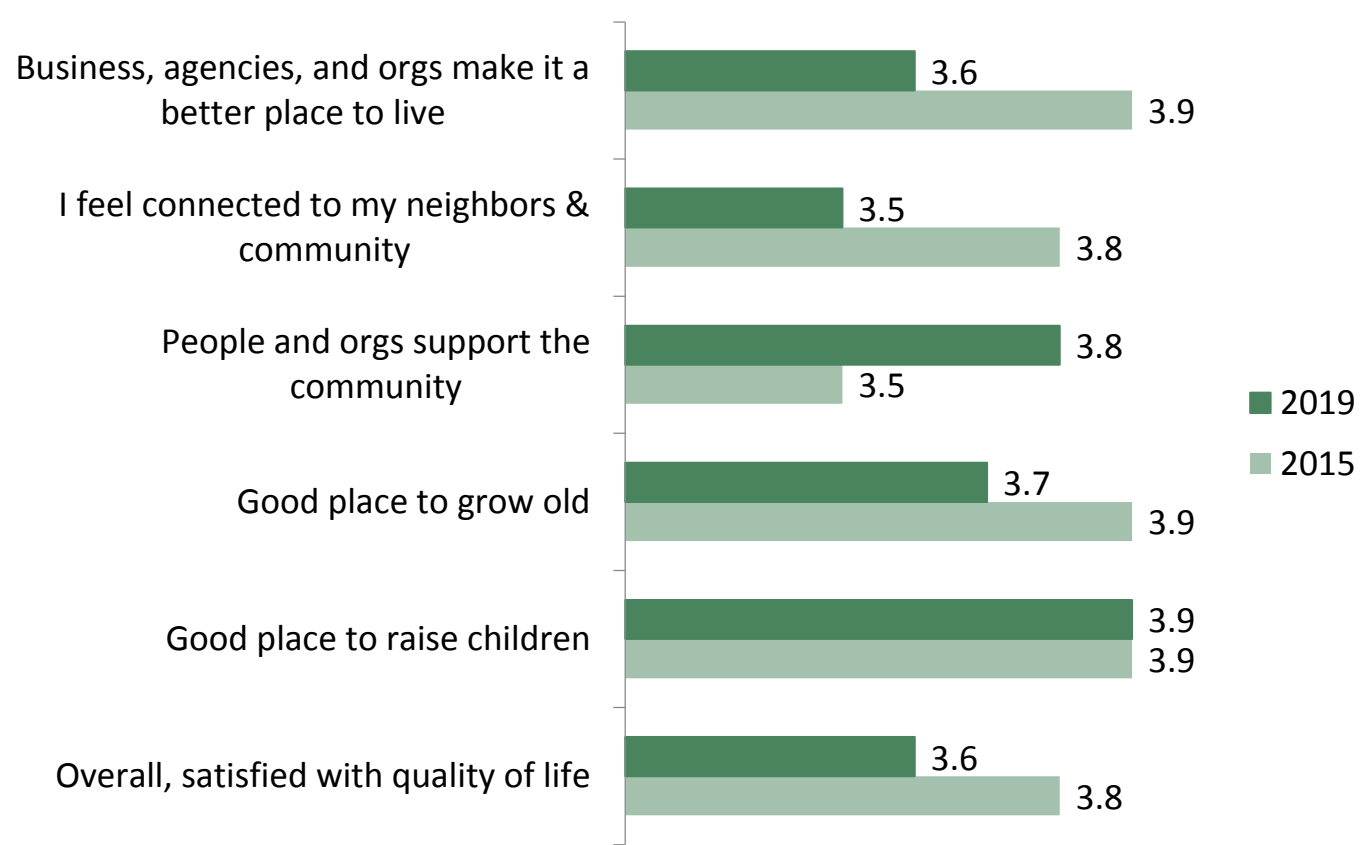
Data Source: MGH Community Survey, 2014, 2015; North Suffolk CHNA Community Survey

YOUTH

Age Distribution

	Chelsea	Revere	Winthrop	MA
Under 5 years old	9.3%	5.7%	5.9%	5.4%
5 to 9 years old	7%	5.5%	4%	5.6%
10 to 14 years old	5.8%	4.9%	6.7%	6%
15-17 years old	3.6%	2.8%	2.7%	3.7%

Data Source: American Community Survey (ACS), 2012-2016

Percent of Public School Students who are Economically Disadvantaged
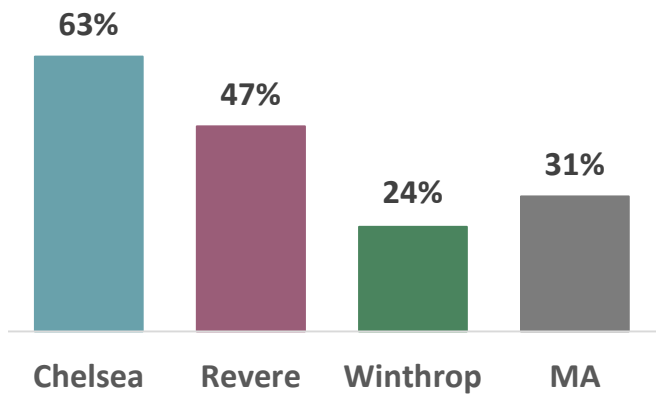
The measure is based on a student's participation in one or more of the following state-administered programs: the Supplemental Nutrition Assistance Program (SNAP); the Transitional Assistance for Families with Dependent Children (TAFDC); the Department of Children and Families' (DCF) foster care program; and MassHealth (Medicaid)

Students Participating in Community Service in Past Year

| Chelsea HS	Revere HS	Winthrop MS and HS
27%	50%	61%

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

Percent of Survey Respondents who Have Difficulty Finding Childcare for Children 0-5 and After-School Programs for Children 5-12
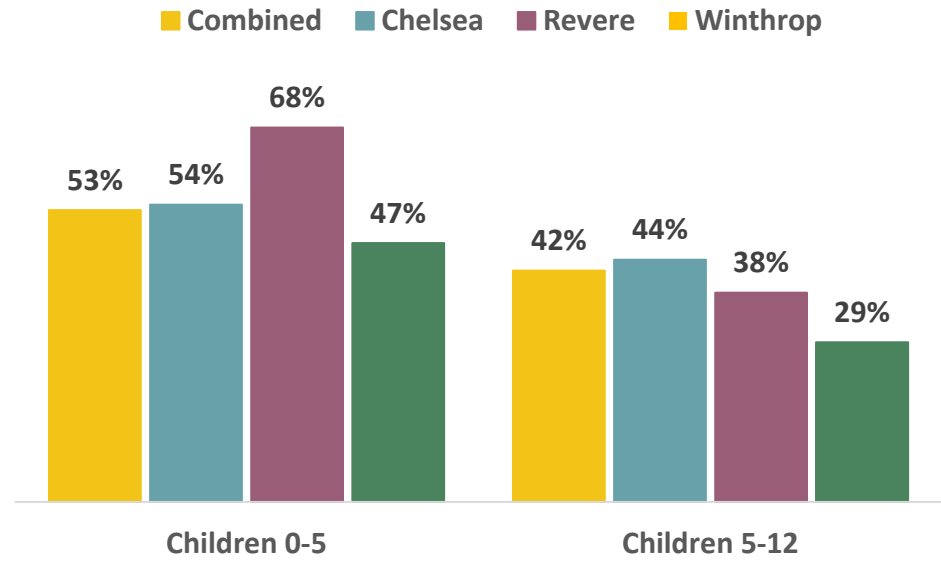
Data Source: North Suffolk Community Health Needs Assessment Community Survey

High School Graduation Rate (2018)
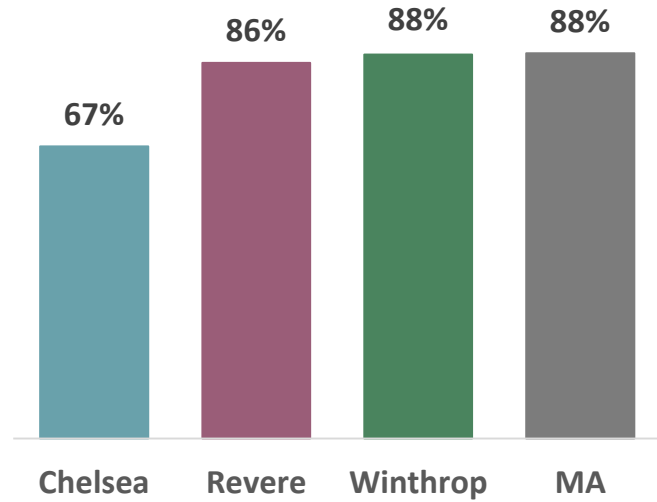
Data Source: MA DESE

High School Dropout Rate 2017-2018

Chelsea	7%
Revere	2%
Winthrop	4%
MA	2%

Data Source: MA DESE

Youth participants and a few key informants stated that creating more activities for the community, especially for youth, would encourage participants to be more active rather than sedentary, and promote more interaction with others in the community, especially to unite young people together. Focus group participants highlighted the need for more activities for older youth and teenagers in particular, as many participants reported there were plenty of opportunities for children. Focus group participants, particularly youth respondents, in Revere and Winthrop stated that a local YMCA would help them stay active. In addition, **more green and outdoor spaces would be welcomed** in all three of these communities to promote physical activity.

Reasons for Difficulty of Finding Childcare for Children 0-5

	Combined	Chelsea	Revere	Winthrop
Cost	**84%**	**81%**	**81%**	**90%**
Location	34%	21%	46%	30%
Quality	46%	48%	39%	53%
Inconvenient hours	29%	48%	39%	53%
Lack of open slots for new children	40%	36%	43%	40%
Lack of available childcare programs	29%	26%	35%	23%
Language barriers	3%	7%	2%	0%
Need a program for children with special needs	8%	10%	7%	8%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Plans After Graduation, 2017-2018 School Year

Plan	Chelsea	Revere	Winthrop	MA
4-Year Private College	8%	19%	**43%**	29%
4-Year Public College	21%	27%	25%	31%
2-Year Private College	0%	**1.1%**	3%	0.5%
2-Year Public College	**38%**	37%	17%	19%
Other Post-Secondary	2%	2%	0%	2%
Work	**12%**	9%	0%	0%
Military	2%	1%	1%	2%
Other	**5%**	2%	2%	2%
Unknown	**11%**	2%	**10%**	5%

Data Source: MA DESE

Percent of Overweight or Obese Public School Students

Grade	Chelsea (2018-19)	Revere (2018-19)	Winthrop (2014-15)	MA (2014-15)
1st Grade	**47%**	**42%**	**35%**	28%
4th Grade	57%	52%	37%	34%
7th Grade	62%	44%	37%	34%
10th Grade	49%	41%	36%	33%

*Massachusetts DPH reports only until 2014-2015 school year.
Data Source: Public School Districts, MDPH

Top Three Reasons for Difficulty of Finding After-School Programs for Children 5-12

Rank	Combined	Chelsea	Revere	Winthrop
1.	Cost (62%)	Cost (55%)	Cost (64%)	Cost (72%)
2.	Lack of available school programs (33%)	Lack of open slots for new youth (40%)	Lack of available school programs (38%)	Lack of available school programs (28%)
3.	Location (25%)	Lack of available school programs (32%)	Inconvenient hours (24%)	Quality (25%)

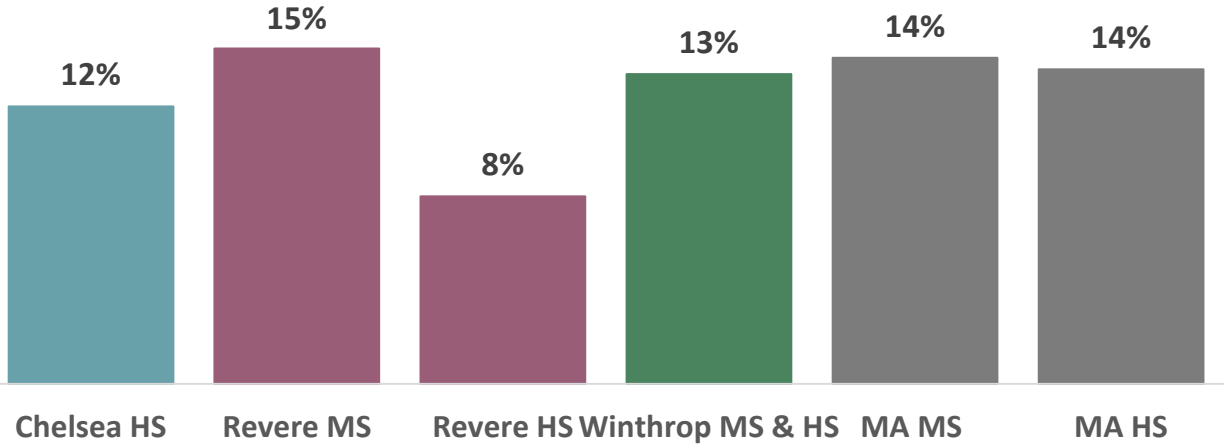*Data Source: North Suffolk Community Health Needs Assessment Community Survey*

YOUTH

Total Number of Homeless Children/Youth According to Primary Nighttime Residence, 2017-18 School Year

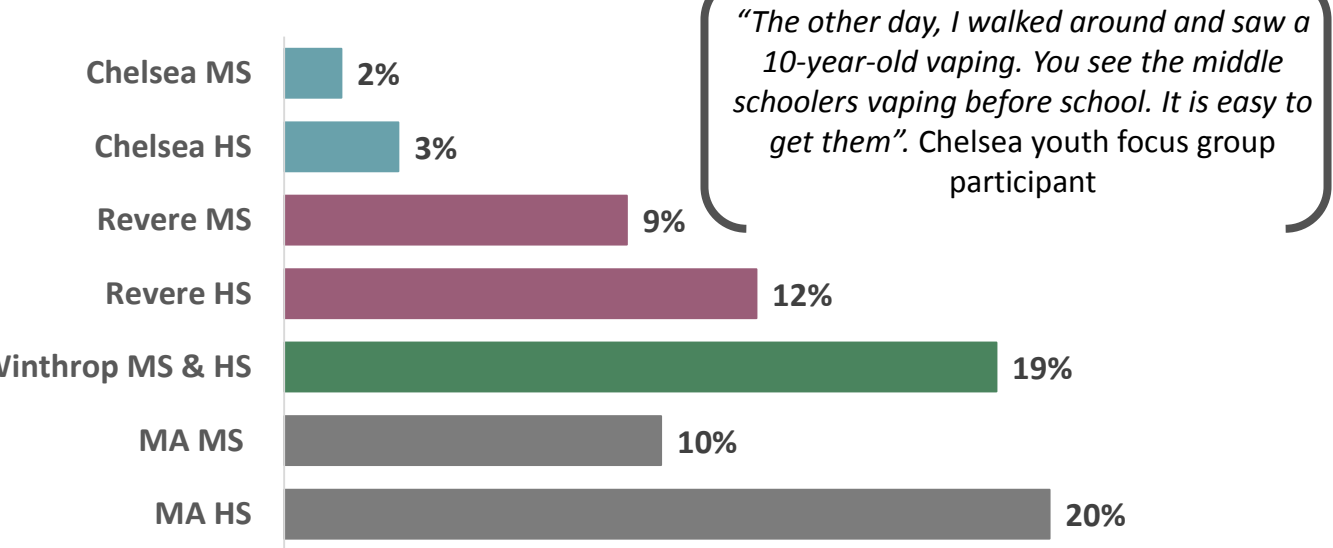|	Chelsea	Revere	Winthrop
Total Number of Students Enrolled in District	6,088	7,544	1,983
Shelters	70	55	
Doubled-up	370	121	
Unsheltered (e.g., cars, parks, campgrounds, etc.)			
Hotel	23	11	
Total	**463**	**191**	**14**
Total Unaccompanied Youth		22	

*The Department redacts numbers less than ten (10) for student privacy reasons
Data Source: Office of Student and Family Support, MA DESE

Percent of Youth Reporting Being Cyber-bullied in the Past 12 Months

Question on cyber-bullying was not asked on the Chelsea MS YRBS
Winthrop reported a combined middle and high school percentage
Data Sources: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, 2017 MA YRBS

Percent of Middle and High School Students Reporting Using Electronic Vapor Products in Past 30 Days

"The other day, I walked around and saw a 10-year-old vaping. You see the middle schoolers vaping before school. It is easy to get them". Chelsea youth focus group participant

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

Percent of Middle and High School Students Reporting Suicide Ideation

Black boxes=did not ask on survey

	Chelsea		Revere		Winthrop	MA	
	MS	HS	MS	HS	Combined MS & HS	MS	HS
Seriously considered suicide	20%	13%	18%	8%	14%	9%	12%
Made suicide plan	11%	■	10%	7%	9%	■	10.9%
Attempted suicide	■	7%	■	5%	2%	4%	5%

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

Marijuana use and vaping, particularly the JUUL, were mentioned as concerns among youth across all three communities. Youth participants mentioned that vaping is prevalent among young people, and this is especially problematic because it can be used in front of teachers in school. *One young person in a focus group in Revere mentioned that she saw a student who took a hit from a JUUL in class while the teacher was looking at him; he easily hid the JUUL in his sweatshirt.* According to focus group participants, youth do not perceive the JUUL as harmful or addictive and it seems like everyone is doing it.

Percent of Middle and High School Students Reporting Feeling Sad or Hopeless for Two Weeks

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

According to focus group participants, youth do not perceive marijuana as harmful; one focus group participant in Revere stated, *"Since marijuana has been legalized, the youth have been using it more. Sometimes, I have found youth using marijuana treating it like a game, like it's fun…"*
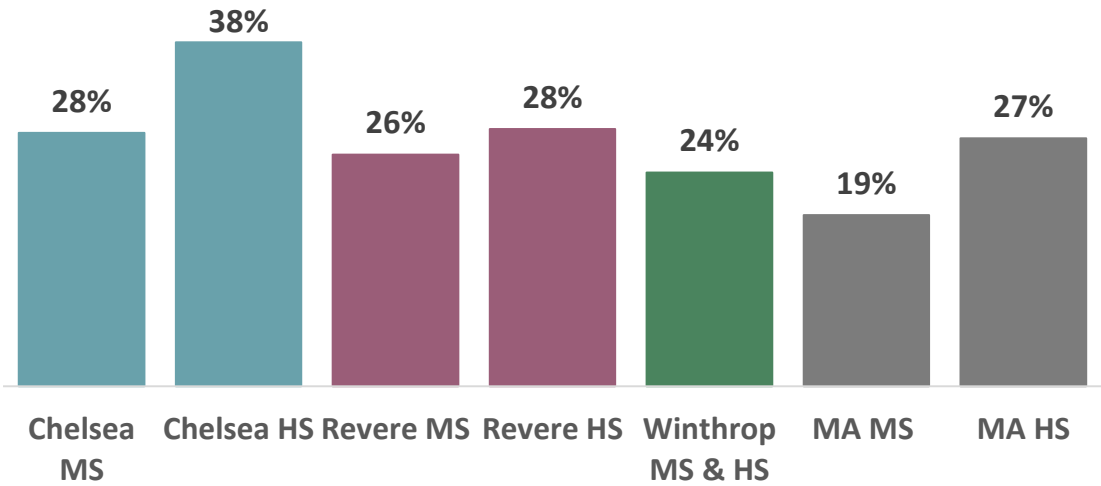
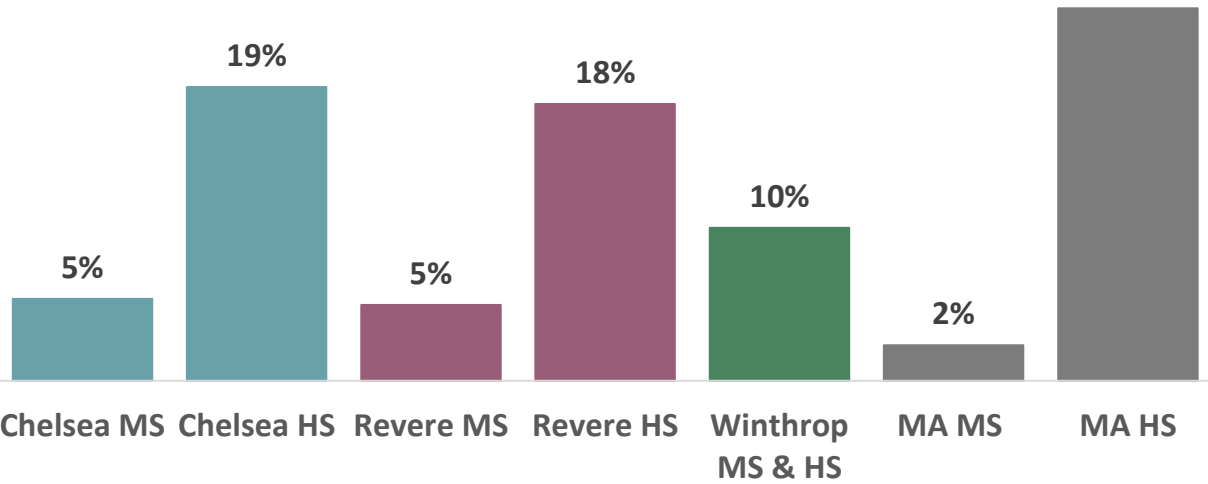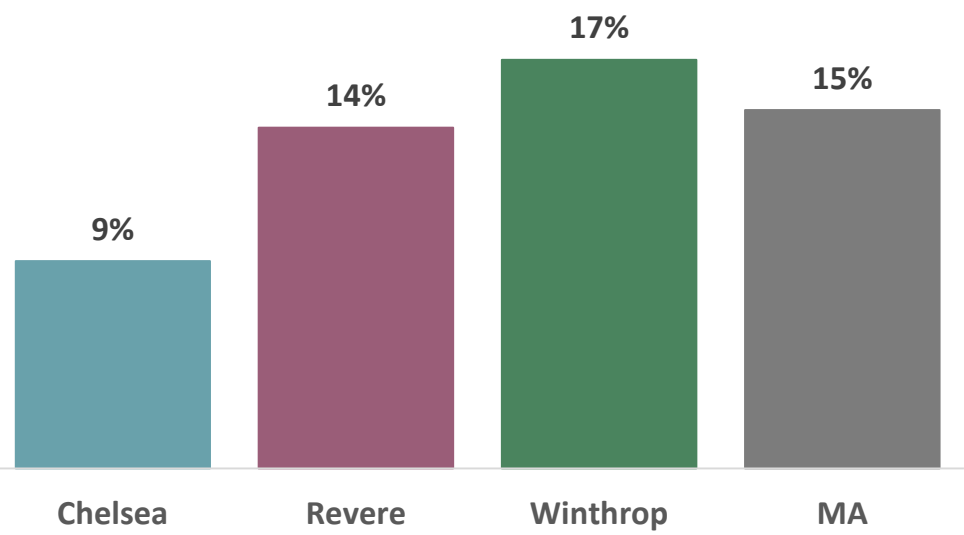## Percent of Middle and High School Students Reporting Using Marijuana in Past 30 Days

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

65+ POPULATION

Percent of Population 65+, ACS 2012-2016

Bar chart:
- Chelsea: 9%
- Revere: 14%
- Winthrop: 17%
- MA: 15%

Data Source: American Community Survey (ACS), 2012-2016

Percent of Population 65+, by Age Group, 2012-16

	Chelsea	Revere	Winthrop	MA
65 to 66 years old	1.3%	1.7%	**2.4%**	2.2%
67 to 69 years old	2%	2.7%	**2.8%**	2.7%
70 to 74 years old	1.5%	3.3%	**4.4%**	3.5%
75 to 79 years old	1.3%	**2.8%**	**3.3%**	2.5%
80 to 84 years old	1.2%	1.7%	**2.7%**	2%
85 years and over	1.4%	2.1%	1.6%	2.3%

Data Source: American Community Survey (ACS), 2012-2016

Percent of 65+ Below Poverty Line in Past Year, 2012-2016

Bar chart:
- Chelsea: 19%
- Revere: 13%
- Winthrop: 10%
- MA: 9%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/

Age-sex Adjusted 1-year Mortality Rate

Chelsea	Revere	Winthrop	MA
5.1%	4.1%	4.6%	4.2%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/

Percent of 65+ with 0 Chronic Conditions

Bar chart:
- Chelsea: 8%
- Revere: 6%
- Winthrop: 7%
- MA: 7%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/

	Chelsea	Revere	Winthrop	MA
% 65+ households with annual income <$20,000	**43.5%**	**36.1%**	**24.8%**	23.6%
% 60+ receiving food stamps past year	**32.5%**	**17.7%**	10.7%	12.3%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/

	% 65+ clinically diagnosed obese	% 65+ with stroke
Chelsea	26.1%	11.8%
Revere	25.7%	10.8%
Winthrop	22.9%	9.5%
MA	19.0%	12.0%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/

How Survey Respondents, 65+, Ranked Their Health

	Poor or Fair	Good	Very Good or Excellent
Physical Health	15.1%	45.9%	38.9%
Overall Health	12.7%	47.7%	39.6%

Data source: North Suffolk Community Health Needs Assessment community survey

Percent of 60+ With Self-Reported Fair or Poor Health Status

Bar chart:
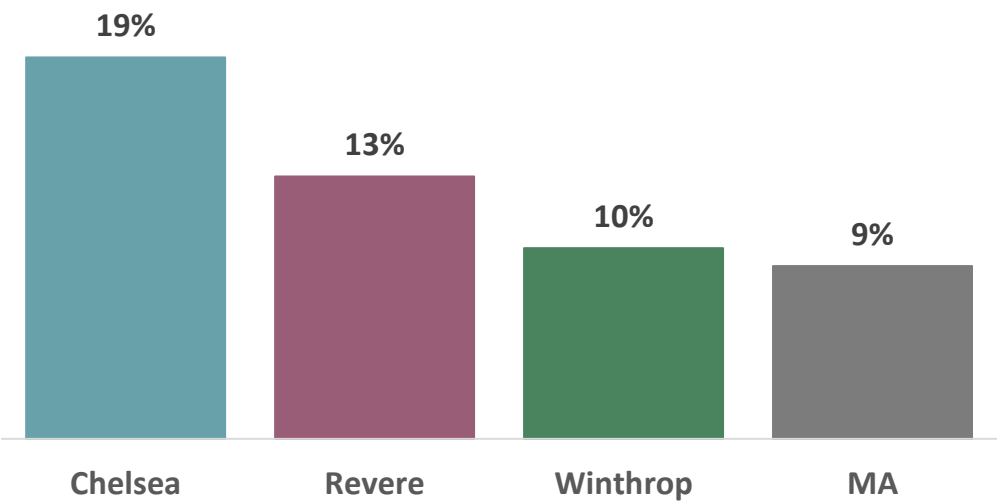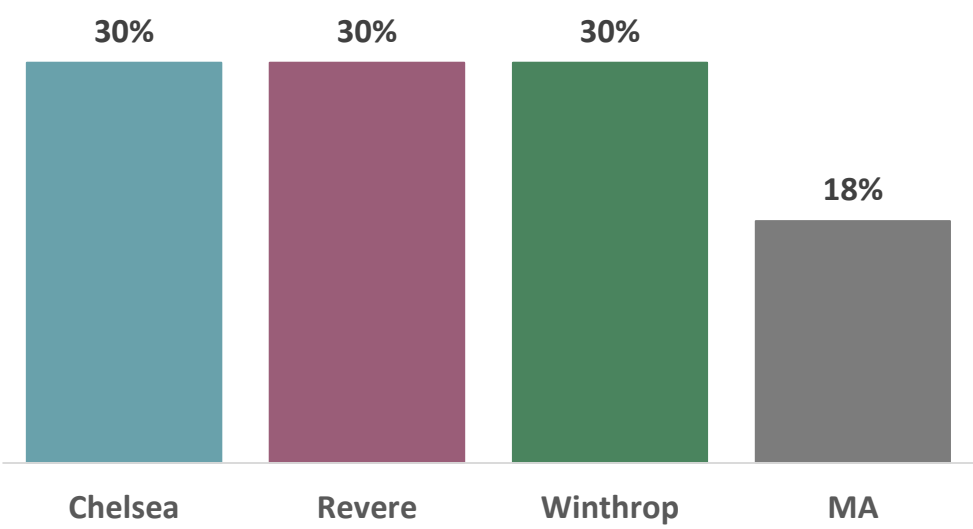- Chelsea: 30%
- Revere: 30%
- Winthrop: 30%
- MA: 18%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/

65+ POPULATION

Percent of 65+ Population Living Alone, 2012-2016

Chelsea	Revere	Winthrop	MA
45%	34%	38%	30%

Data source: American Community Survey (ACS), 2012-2016

Social isolation and loneliness is high among elder populations. Key informants stated that **elders choose to be alone; they live alone without company.** This may lead to unaddressed health risks and affects how residents work with others to access care.

How Survey Respondents, 65+, Ranked Their…

	Poor or Fair	Good	Very Good or Excellent
Mental Health	4%	33%	63%
Satisfaction with social activities and relationships	12%	33%	55%

Data source: North Suffolk Community Health Needs Assessment community survey

Percent of Survey Respondents 65+ Who Feel Safe in Their Community

87%

Data source: North Suffolk Community Health Needs Assessment community survey

Percent of 65+ with Substance Use Disorders (Drugs Use +/or Alcohol Abuse)
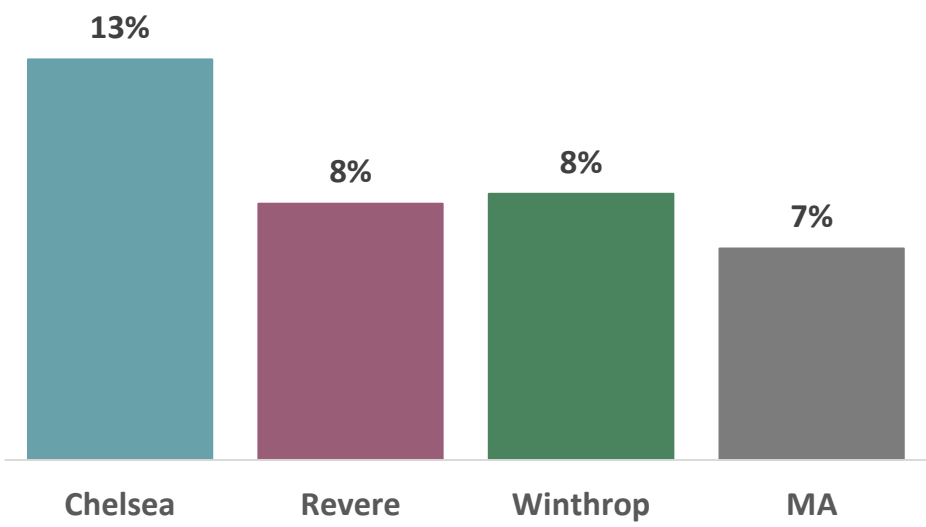
Chelsea	Revere	Winthrop	MA
13%	8%	8%	7%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/
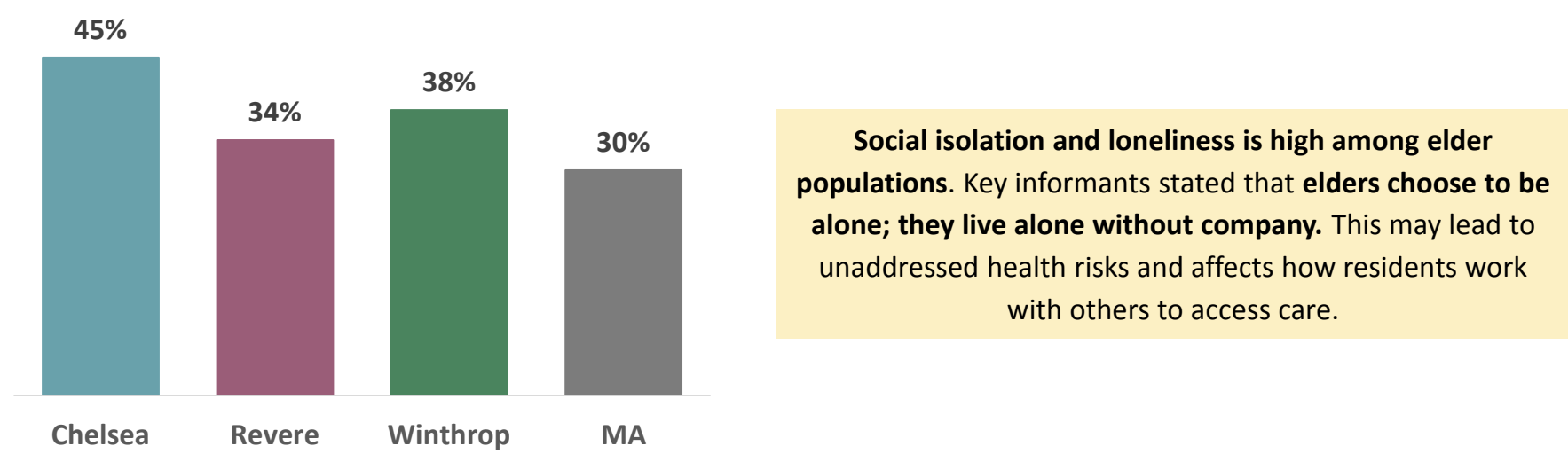
Percent of 65+ with Depression

Chelsea	42%
Revere	38%
Winthrop	35%
MA	32%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/
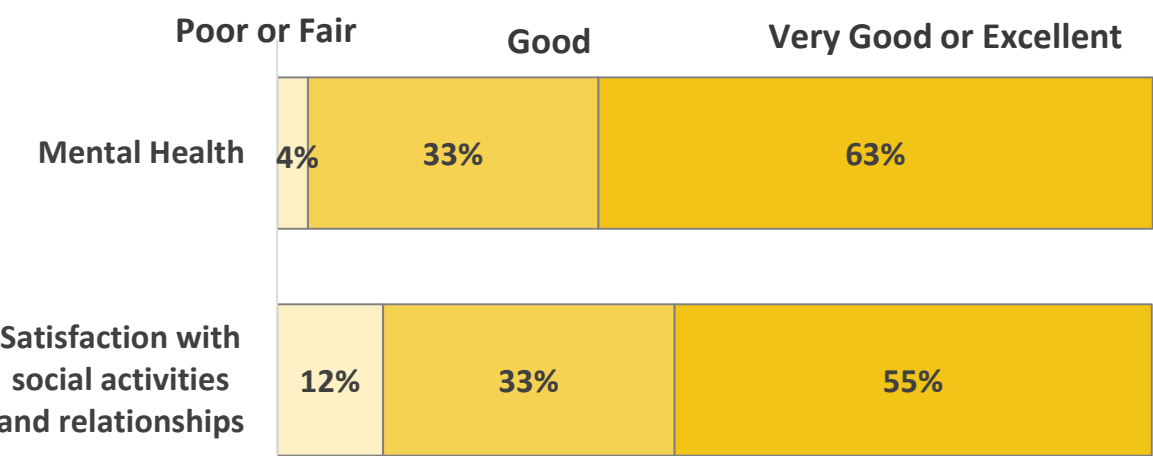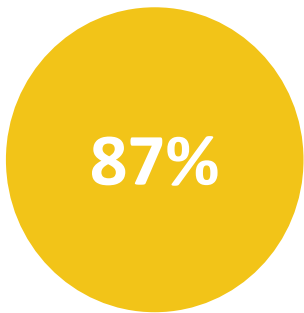
Percent of 65+ with Anxiety Disorders

Chelsea	32%
Revere	30%
Winthrop	28%
MA	25%

Data Source: 2018 MA Healthy Aging Community Profile-Tufts Health Plan Foundation, https://mahealthyagingcollaborative.org/data-report/explore-the-profiles/community-profiles/

FOREIGN-BORN POPULATION

Percent of Foreign-born Residents, ACS 2012-2016

- Chelsea: 45%
- Revere: 36%
- Winthrop: 17%
- MA: 16%

Data Source: American Community Survey (ACS), 2012-2016

Select Places of Birth of Foreign-born Population

	Chelsea	Revere	Winthrop	MA
Africa	7%	16%	9%	9%
Asia	5%	16%	5%	30%
Central America	**70%**	22%	13%	9%
Europe	4%	14%	**45%**	22%
Northern Africa	2%	13%	9%	1.%
South America	9%	**28%**	21%	11%

Data Source: American Community Survey (ACS), 2012-2016

Percent of Foreign-born who Responded to the North Suffolk Community Survey

- Combined: 23%
- Chelsea (N=70): 33%
- Revere (N=101): 26%
- Winthrop (N=27): 9%

Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

	Chelsea	Revere	Winthrop	MA
Foreign Born Population that are Naturalized U.S. citizens	28.7%	48.7%	47.8%	52.0%
Foreign Born Population that are Not a U.S. citizen	**71.3%**	**51.3%**	**52.2%**	47.8%

Data Source: American Community Survey (ACS), 2012-2016

Survey Respondents who Rated Their Physical Health 'Poor or Fair', by Foreign-born Status

Chelsea		Revere		Winthrop	
Foreign-born % (N)	Non Foreign-Born % (N)	Foreign-born % (N)	Non Foreign-Born % (N)	Foreign-born % (N)	Non Foreign-Born % (N)
24% (16)	25% (41)	32% (32)	24% (68)	15% (4)	18% (56)

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the Ns for those individuals that answered that question
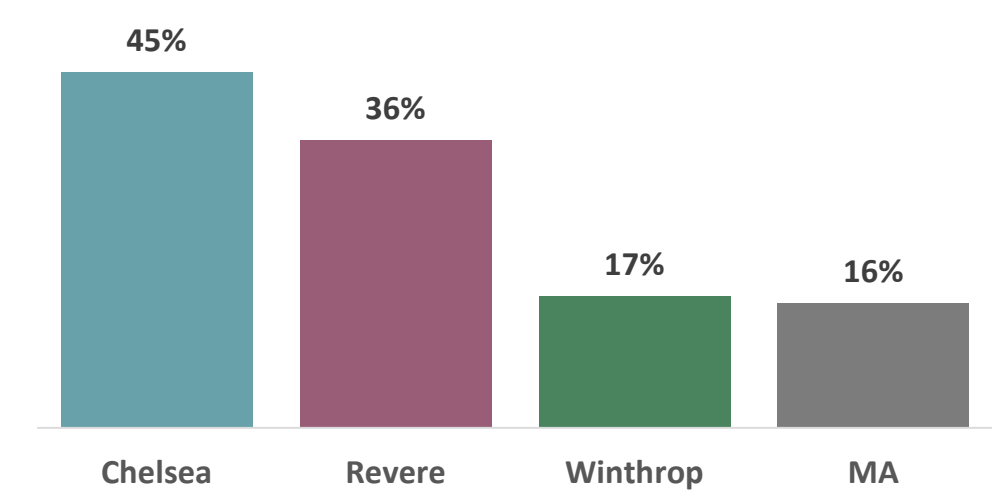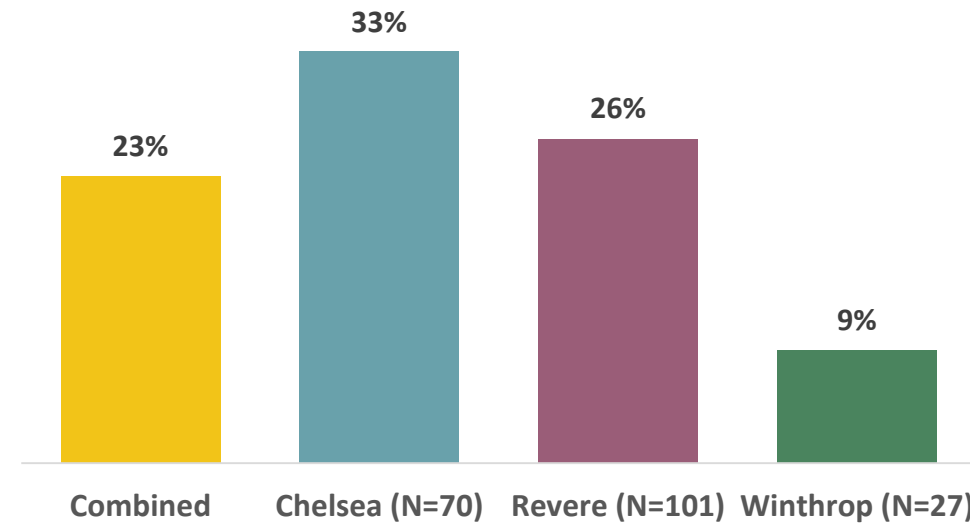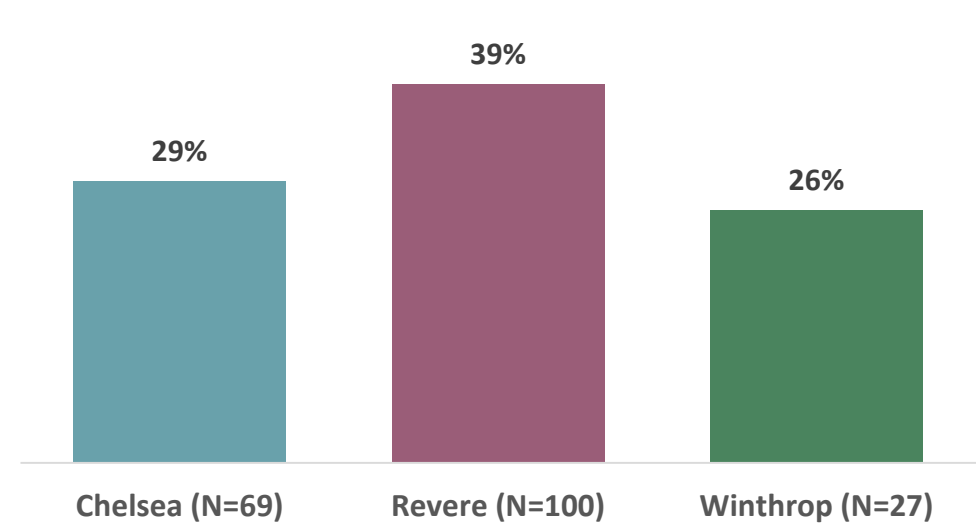*Foreign-born is those that answered "How long have you live in the United States?"*
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Foreign-born Survey Respondents Who Checked that Cultural Food Affects where They Shop for Groceries

- Chelsea (N=69): 29%
- Revere (N=100): 39%
- Winthrop (N=27): 26%

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the total N for the foreign-born population in each community
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Survey Respondents Who Have Went Hungry Because There Was Not Enough Money for Food in the Past 12 Months

	Overall % (N)	Foreign-Born % (N)	Non Foreign-Born % (N)
Chelsea	10% (35)	9% (6)	14% (23)
Revere	9% (43)	6% (6)	10% (29)
Winthrop	6% (24)	11% (3)	6% (19)

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the Ns for those individuals that answered that question
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

FOREIGN-BORN POPULATION

Percent of Foreign-born Survey Respondents who Fear They Will be Evicted or Foreclosed Due to No Rent/Mortgage Payment

- Chelsea (N=66): 26%
- Revere (N=99): 25%
- Winthrop (N=27): 15%

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the total N for the foreign-born population in each community
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Fear Might Become Homeless in Next Year

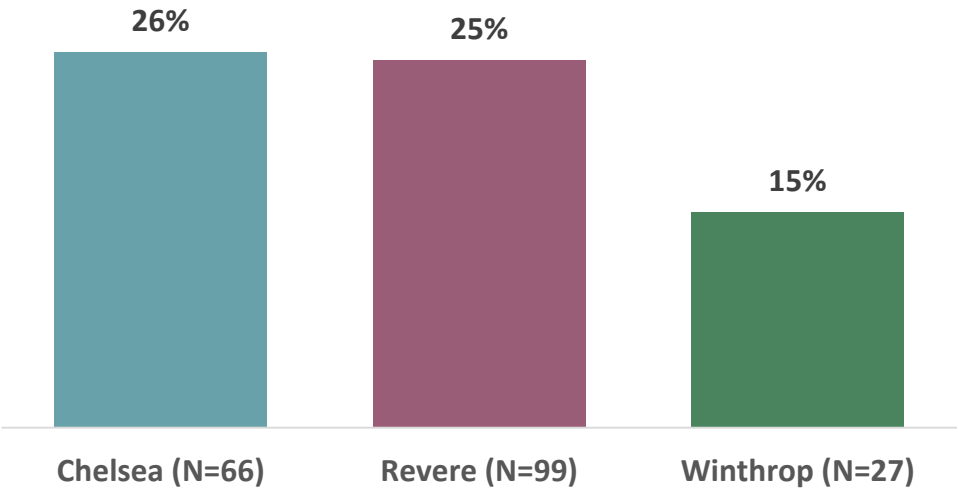|	Foreign-Born % (N)	Non Foreign-Born % (N)
Chelsea	16% (11)	8% (12)
Revere	16% (16)	7% (20)
Winthrop	22% (6)	5% (17)

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the Ns for those individuals that answered that question
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Survey Respondents who Rated Their Mental Health 'Poor or Fair', by Foreign-born Status

Chelsea		Revere		Winthrop	
Foreign-born % (N)	Non Foreign-Born % (N)	Foreign-born % (N)	Non Foreign-Born % (N)	Foreign-born % (N)	Non Foreign-Born % (N)
13% (9)	20% (32)	15% (15)	19% (53)	22% (6)	14% (45)

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the Ns for those individuals that answered that question
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Foreign-born Survey Respondents who Feel Safe in their Community

- Chelsea (N=67): 88%
- Revere (N=101): 90%
- Winthrop (N=27): 96%

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the total N for the foreign-born population in each community
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Foreign-born Survey Respondents who Have been Treated Badly or Unfairly Because of Their Race or Ethnicity

- Chelsea (N=69): 22%
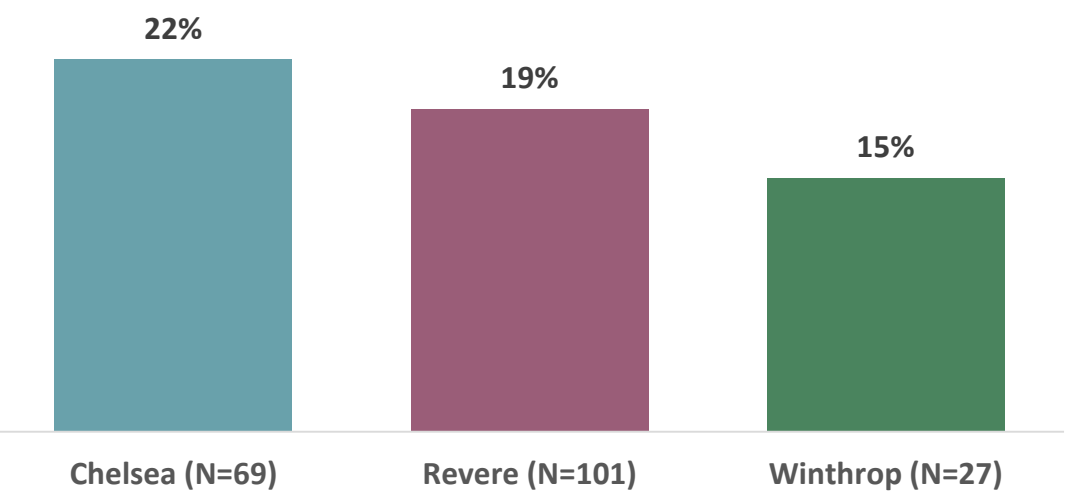- Revere (N=101): 19%
- Winthrop (N=27): 15%

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the total N for the foreign-born population in each community
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

ENVIRONMENT

Select Modes of Transportation to Work/School

	Chelsea	Revere	Winthrop	MA
Bicycle	0.7%	0.3%	0.2%	0.8%
Drive	**60%**	**67%**	**72%**	79%
Work from home	2%	2%	3%	5%
Public Transit	**28%**	**27%**	**21%**	10%
Walk	8%	3%	3%	5%

Data Source: American Community Survey (ACS), 2012-2016

Travel Time to Work

	Chelsea	Revere	Winthrop	MA
< 15 min commute	20%	17%	19%	23%
15-30 min commute	**27%**	27%	23%	32%
30-45 min commute	**27%**	**29%**	**34%**	22%
45-60 min commute	9%	12%	12%	10%
60-90 min commute	12%	11%	8%	9%

Data Source: American Community Survey (ACS), 2012-2016

Percent Residing in a Block Group Where One or More Environmental Justice Criteria is Met
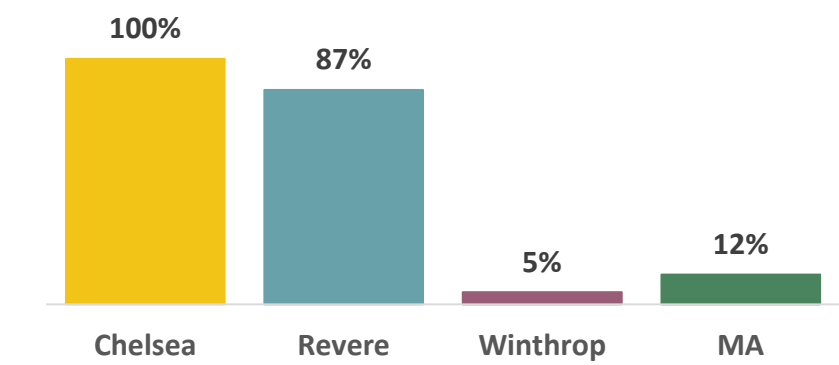
Environmental Justice (EJ) neighborhoods are where more than one of these criteria are met may be the most at risk of exposure to environmental and health hazards.
- *Median annual household income is at or below 65% of the statewide median income;*
- *25% or more of the residents are a minority; or*
- *25% or more of the residents are not fluent in the English language.*

Data Source: MA Environmental Public Health Tracking (EPHT)

Along with the modes and travel time to get to work and school, transportation was described as both a strength and challenge to accessing health and social services in the key informant interviews and focus groups. Although Chelsea focus group participants noted that access to transportation, especially the 111 bus and the Silver Line, was a strength, they also stated that transportation was a burden due to crowded buses and infrequent schedules.

Winthrop focus group participants mentioned there is a lack of public transportation, with only one bus running through Winthrop infrequently, making it difficult to access health services. One focus group participant discussed the lack of medical services in town, and the need to travel into Boston to get care, especially specialized care, which means *"Parking, money, traffic, time, and people don't have it."* Elders also mentioned that the MBTA RIDE needs to improve since many people rely on it to access services but people end up waiting for it for a long time.

Many participants in Revere reported satisfaction with transportation in the city; participants mentioned that there is plenty of access to transportation with the blue line and several buses that run frequently. In addition, participants stated that the MGH Shuttle in Revere is more helpful for getting to appointments than the T.

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the Ns for those individuals that answered that question
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Vehicle Ownership

Data Source: American Community Survey (ACS), 2012-2016
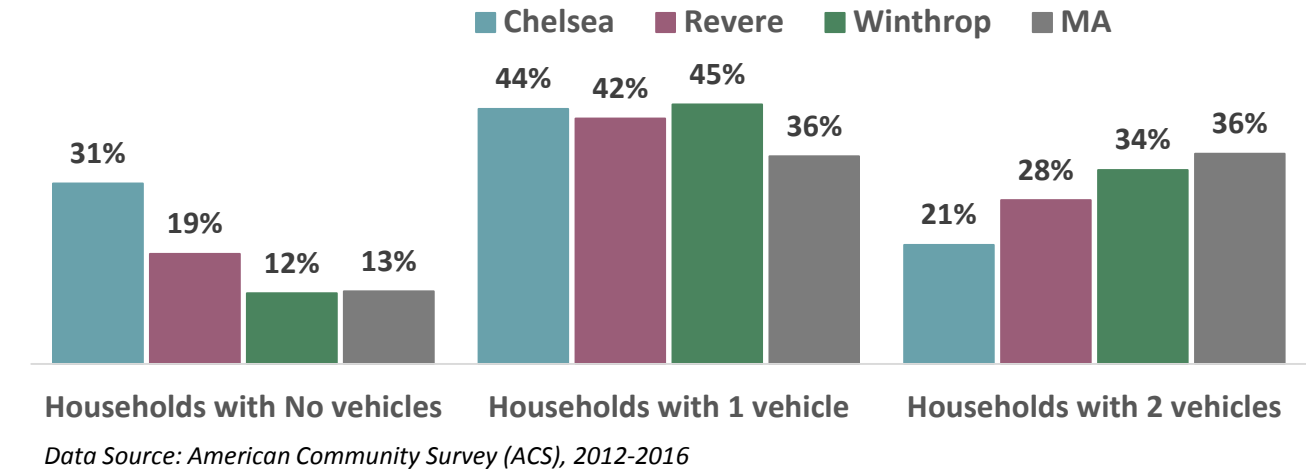
Survey Respondents Get the Majority of Their Groceries from the Supermarket or Grocery Store*
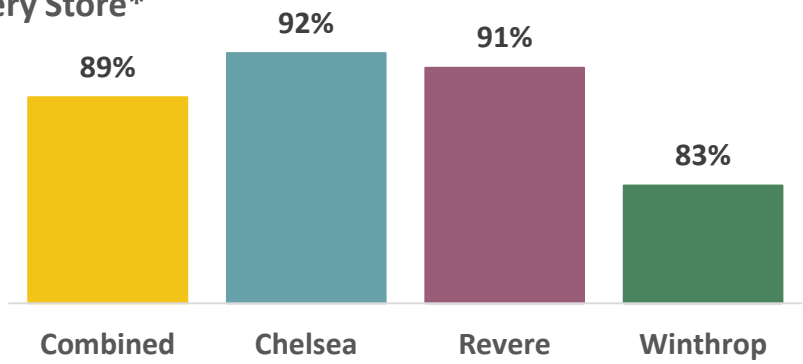
*They were only able to select 1 answer for this question on the survey
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Top 3 Reasons that Affect Where Survey Respondents Shop for Groceries

	Overall	Chelsea	Revere	Winthrop
Prices	81%	82%	82%	78%
Quality of food	51%	45%	54%	52%
Distance to store	47%	44%	48%	49%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Cultural Food Affecting Where Survey Respondents Shop for Groceries, by Select Populations

Foreign-Born
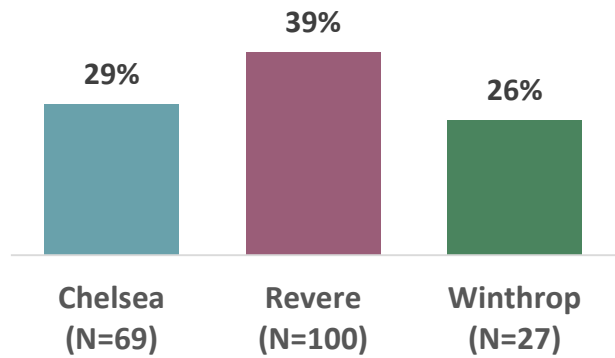
	Not Hispanic/Latino % (N)	Hispanic/Latino % (N)
	6% (54)	38% (113)

ENVIRONMENT

The Top 5 Most Important Environmental Health Problems

Combined: Environment was the **2nd overall health concern** for survey respondents

Category	%
Outdoor air quality	65%
Trash/litter	57%
Airport and airplanes	54%
Water pollution	46%
Noise	37%

Chelsea: Environment was the **5th overall health concern** for survey respondents

Category	%
Trash/litter	65%
Outdoor air quality	63%
Water pollution	40%
Airport and airplanes	39%
Indoor air pollution	39%

"You do not feel good about where you live if there's trash everywhere". Chelsea focus group participant

Revere: Environment was the **3rd overall health concern** for survey respondents

Category	%
Trash/litter	64%
Outdoor air quality	62%
Water pollution	45%
Noise	35%
Indoor air pollution	32%

"If you're a normal sized rat, that's okay but when you're as big as my face, that's an issue". Revere focus group participant

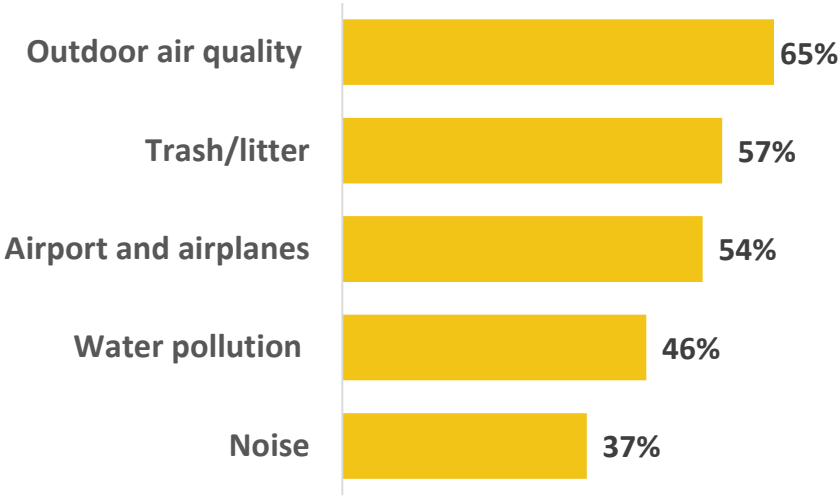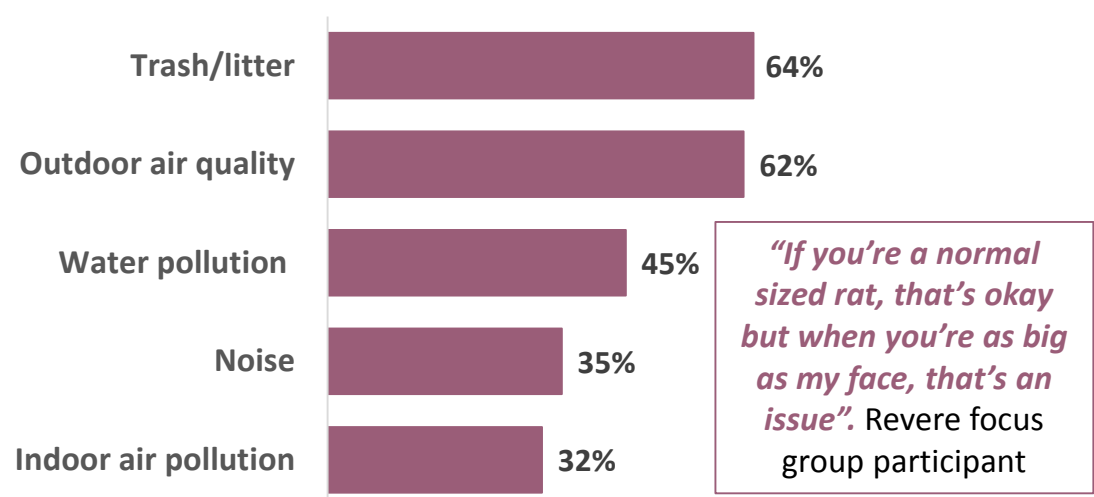**Winthrop:** Environment was the **2nd overall health concern** for survey respondents

Category	%
Airport and airplanes	85%
Outdoor air quality	69%
Water pollution	52%
Noise	45%
Trash/litter	41%

"We've buried a lot of people in their 40s and 50s that wasn't related to substance use".- Winthrop participant in reference to the number of deaths because of environmental cancers and diseases.

Heat Islands*

North Suffolk Collaborative

Open Space

*Heat islands are areas with land surface temperatures greater than 100 degrees Fahrenheit on hot summer days. These areas were delineated in an MAPC analysis based on remotely sense images from hot, cloudless days in 2010 and 2016. Areas with high land surface temperature are associated with higher air temperature, and are typically located in areas with a high proportion of impervious cover.

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Produced by: Metropolitan Area Planning Council
Data Sources: MAPC, MassGIS
Date: February 2019

0 0.25 0.5 0.75 1 Miles

When asked what would make a healthy community, a clean environment with clean air and water without trash on the ground was mentioned in several focus groups. The importance of maintaining a clean environment without trash on the ground was prevalent throughout multiple focus groups. **The condition of the environment has made a large, negative impact on health, especially in Chelsea and Winthrop.** Participants mentioned traffic, air pollution and noise from the airport, and coastal flooding as environmental issues, especially in Winthrop. Because of the airport, insomnia is an issue for residents. In addition, participants mentioned other diseases and conditions that affect the community, such as diabetes, high blood pressure, and cancer.

HEALTH ACCESS AND STATUS

Premature Mortality Age-Adjusted Rate per 100,000, 2010-2016

- 427.7 ... 471.5 Chelsea
- 425.5 Winthrop
- 308.1 ... 389.9 Revere
- 273.6 ... 282.2 MA
- 245.7

2010 2011 2013 2014 2015 2016
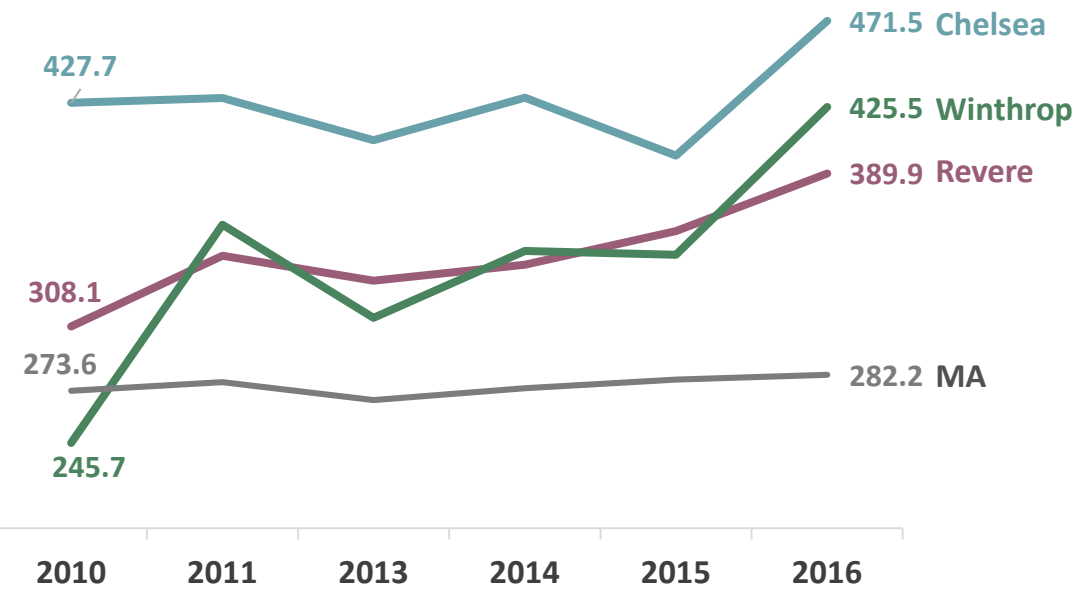
*Premature mortality rates are age-adjusted to the 2000 US Standard Population for persons ages 0-74 years. Data for 2012 not available
Data Source: MA DPH, Registry of Vital Records and Statistics

Age-Adjusted Death Rate per 100,000, 2013-2016

- 963.8 Chelsea
- 928.7 Winthrop
- 734 Revere
- 668.9 MA

2013 2014 2015 2016

Data Source: MA DPH, Registry of Vital Records and Statistics
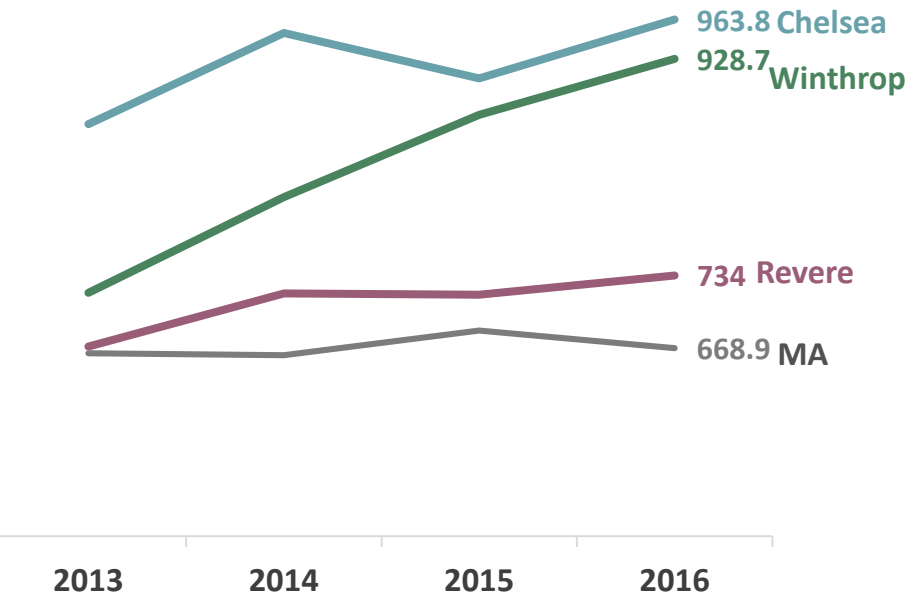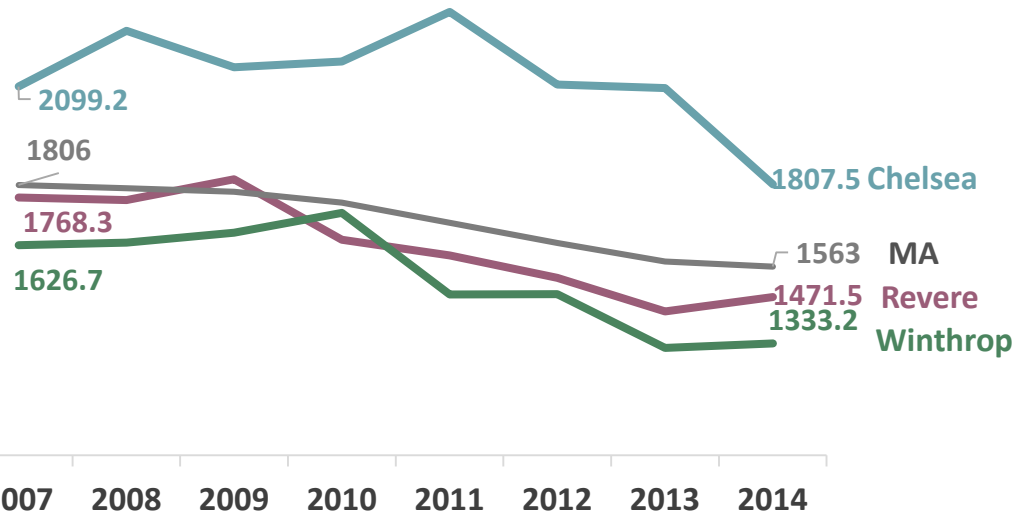
Percent of Survey Respondents in the Past 12 Months who…

	Combined	Chelsea	Revere	Winthrop
Saw their primary care doctor	89%	89%	90%	87%
Had dental checkup	74%	70%	72%	79%
Had eye exam	60%	61%	62%	56%

Cardiovascular Hospital Admissions Age-Adjusted Rate per 100,000, 2007-2014

- 2099.2 ... 1807.5 Chelsea
- 1806 ... 1563 MA
- 1768.3 ... 1471.5 Revere
- 1626.7 ... 1333.2 Winthrop

2007 2008 2009 2010 2011 2012 2013 2014

Data Source: Center for Health Information and Analysis (CHIA)

Percent of Survey Respondents Rating Their Physical Health…

	Combined	Chelsea	Revere	Winthrop
Poor or Fair	21%	24%	17%	17%
Good	33%	35%	40%	47%
Very Good or Excellent	39%	41%	36%	37%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Hispanic/Latino Survey Respondents who Rated Their Physical Health 'Poor or Fair'

- Not Hispanic/Latino (N=820): 19%
- Hispanic/Latino (N=284): 29%
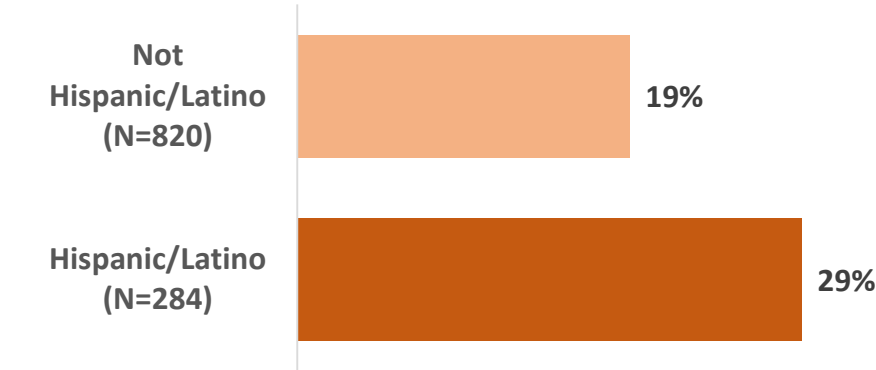
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Focus group participants mentioned diseases and conditions that affect the community, such as diabetes, high blood pressure, and cancer. Focus group participants and key informants stated they have noticed higher rates of breast cancer. In addition, residents have dealt with COPD, respiratory diseases, and asthma due to obesity, as well as poor environmental and industrial conditions; these concerns were mentioned in all three communities.

Male Cancer Standardized Incidence Rates, 2011-15

	Chelsea	Revere	Winthrop
All sites/types	90.6	96.5	111
Brain and other nervous system	96.4	64.2	nc
Breast	-	-	nc
Colon/rectum	116.6	106.4	127.9
Lung	127.5	148.2	134.8
Prostate	72.7	70.9	95.7

Female Cancer Standardized Incidence Rates, 2011-15

	Chelsea	Revere	Winthrop
All sites/types	108.6	100.1	105.4
Brain and other nervous system	117	135.2	nc
Breast	90.5	87.9	95.4
Cervical	209.9	71.2	nc
Colon/rectum	45.1	81	120.3
Lung	139.8	135.1	136.1
Ovarian	53.1	69.2	66.2

*nc=Incidence rate not calculated when N<5
A Standardized Incidence Ratio (SIR) of exactly 100 indicates that a city/town's incidence of a certain type of cancer is equal to that expected based on statewide average age-specific incidence rates.
An SIR of more than 100 indicates that a city/town's incidence of a certain type of cancer is higher than expected for that type of cancer based on statewide average annual age-specific incidence rates.
Data Source: Massachusetts Cancer Registry

Data Source: North Suffolk Community Health Needs Assessment Community Survey

HEALTH ACCESS AND STATUS

Diabetes Hospital Admissions Age-Adjusted Rate per 100,000, 2007-2014

- 244.3 → 255.5 Chelsea
- 161.1 → 181.3 Revere
- 159 → 163.4 Winthrop
- 142.4 → 159 MA

2007 2008 2009 2010 2011 2012 2013 2014

Data Source: Center for Health Information and Analysis (CHIA)

While discussing rising obesity rates, multiple **focus group participants reported there is a lack of activities and opportunities for people to move around in the community**; participants noted there were limited affordable opportunities to engage in exercise, sports and recreation programs, as well as a lack of walking trails and outdoor bike paths. Youth focus group participants said having more activities in the community would provide a positive outlet for youth to help them avoid turning to alcohol or drugs because they are bored and have nothing to do.

Percent of Overweight or Obese Public School Students

Grade	Chelsea (2018-19 school year)	Revere (2018-19 school year)	Winthrop (2014-15 school year)	Massachusetts (2014-15 school year)
1st Grade	**47%**	**42%**	**35%**	28%
4th Grade	**57%**	**52%**	**37%**	34%
7th Grade	**62%**	**44%**	**37%**	34%
10th Grade	**49%**	**41%**	**36%**	33%

*Massachusetts DPH reports only until 2014-2015 school year.

Youth participants and a few key informants stated that creating more activities for the community, especially for youth, would encourage participants to be more active rather than sedentary, and promote more interaction with others in the community, especially to unite young people together. Focus group participants highlighted the need for more activities for older youth and teenagers in particular, as many participants reported there were plenty of opportunities for children. Focus group participants, particularly youth respondents, in Revere and Winthrop stated that a local YMCA would help them stay active. In addition, **more green and outdoor spaces would be welcomed** in all three of these communities to promote physical activity.

Insurance is a barrier for many patients, especially immigrants. A couple of key informants and focus group participants stated that it is difficult for immigrants to access medical and mental health services in Chelsea and Revere. A lot of the care that one receives is based on insurance that is unfortunately difficult to obtain. In addition, focus group participants mentioned that insurance payments are too high, especially for people who do not bring in a lot of income. Participants shared that it is difficult to access dental care because insurance is not affordable. Key informants also mentioned that insurance may not cover all necessary costs and medicine that patients need so they go without care due to lack of finances and coverage. Lastly, participants in all three communities mentioned that some hospitals and clinics may not take certain insurance plans, creating an obstacle to receiving affordable care.

How Much Survey Respondents Agree or Disagree with the Statement: I Am Satisfied with the Health Care System in My Community

	Strongly Disagree/Disagree	Neutral	Strongly Agree/Agree
Combined	19%	35%	45%
Chelsea	14%	36%	50%
Revere	17%	34%	49%
Winthrop	28%	36%	36%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Top 5 Barriers to Getting Non-Emergency Medical Care in Survey Respondents Community

Combined	Chelsea	Revere	Winthrop
Overall cost 24%	Overall cost 30%	Wait time too long 27%	Location of health care 29%
Wait time too long 23%	Wait time too long 25%	Overall cost 25%	Inconvenient hours 19%
Insurance 18%	Insurance 19%	Insurance 20%	Overall cost 17%
Location of health care 17%	Inconvenient hours 18%	Location of health care 14%	Wait time too long 17%
Inconvenient hours 17%	No doctors available 11%	Inconvenient hours 14%	Insurance 15%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Language barriers between providers and patients makes it difficult to provide care. Many key informants and focus group participants touched on the idea that language barriers play a large role in preventing individuals from accessing services.

HOUSING

Combined: Housing was the **4th overall health concern** for survey respondents

Chelsea: Housing was the **2nd overall health concern** for survey respondents

Revere: Housing was the **4th overall health concern** for survey respondents

Winthrop: Housing was the **6th overall health concern** for survey respondents

Owner-Occupied Units by Race/Ethnicity, ACS 2012-2016

	Chelsea	Revere	Winthrop	MA
Hispanic	18%	39%	30%	25%
White, non-Hispanic	40%	53%	60%	69%
Black	20%	42%	21%	33%
Asian	33%	44%	53%	52%
Multi-race	13%	40%	49%	35%
American Indian	0%	65%	NA	37%
Other Race	21%	54%	0%	23%
Pacific Islander	NA	NA	NA	36%

Note: Certain population groups have a smaller overall N so certain percentages may appear high due the effect of a small sample size.
Data Source: American Community Survey (ACS), 2012-2016
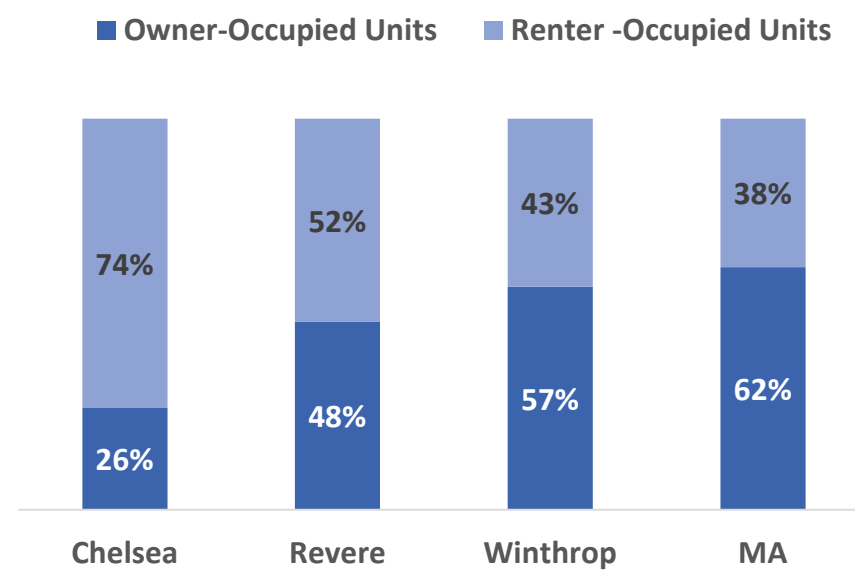
Percent Subsidized Housing Inventory, 2017

Chelsea	Revere	Winthrop	MA
19%	8%	8%	10%

Data Source: American Community Survey (ACS), 2012-2016

	Chelsea	Revere	Winthrop	MA
% of Children Screened for Lead	**94%**	**83%**	**82%**	73%
% of Children with Elevated Blood Lead Levels	3%	2%	2%	2%

Data Source: Massachusetts Environmental Public Health Tracking (EPHT)

Percent Owner and Renter-Occupied Units, ACS 2012-2016


Data Source: American Community Survey (ACS), 2012-2016

Renter-Occupied Units by Race/Ethnicity, ACS 2012-2016

	Chelsea	Revere	Winthrop	MA
Hispanic	82%	61%	70%	75%
White, non-Hispanic	60%	47%	40%	31%
Black	80%	58%	79%	67%
Asian	67%	56%	47%	48%
Multi-race	87%	60%	51%	65%
American Indian	100%	35%	NA	63%
Other Race	79%	46%	100%	77%
Pacific Islander	NA	NA	NA	64%

Note: Certain population groups have a smaller overall N so certain percentages may appear high due the effect of a small sample size.
Data Source: American Community Survey (ACS), 2012-2016

Percent of Housing Built before 1978
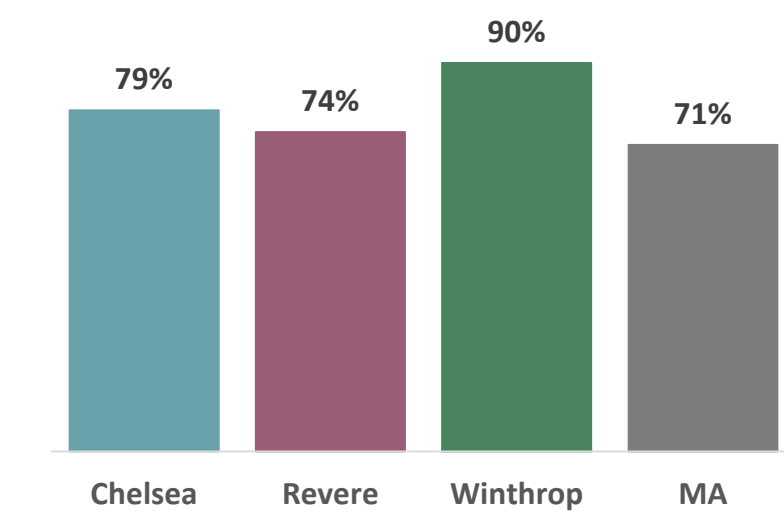
Current Housing Status of Survey Respondents

	Combined	Chelsea	Revere	Winthrop
Own	**54%**	36%	**54%**	**71%**
Rent	37%	**53%**	39%	21%
Live with parents	8%	13%	6%	6%
Residential/program dormitory	0.2%	0.6%	0%	0%
Shared housing	0.8%	0.3%	1%	1%
Homeless/homeless shelter/street or vehicle	0.5%	0.3%	1.1%	0%
Public housing	2%	3%	1%	2%
Section 8 voucher	2%	2%	3%	1%
Massachusetts Rental Voucher Program (MRVP)	0.4%	0.6%	0.4%	0.3%
Live with friends or relatives	3%	3%	3%	2%
Sober housing	0.2%	0.3%	0.2%	0%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Eviction Rate, 2008-2016

Data Source: Eviction Lab, https://evictionlab.org/

HOUSING

Rising housing costs and gentrification are a burden on families, especially for people from low-income households. Most focus group participants and key informants across a variety of populations in Chelsea and Revere reported that current housing conditions have led to stress for individuals and families. High rental prices and poor housing conditions create a cycle that affects multiple areas of life; for example, one young focus group participant said that *if the housing situation was better and people could spend more time at home rather than working to afford their housing*, they would be able to spend more time meal prepping, eating healthier foods, and connecting with the community.

"You work harder to have a little extra income but the more money you make, the more you have to pay"-Focus group participant on the disconnect between earned income and rent costs

Percent of Cost Burdened Households, 2012-2016

Focus group participants reported that gentrification is pushing people out, which threatens the closeness of the community as well as the multicultural diversity.

"They are raising the price, kicking us out, and getting rid of the things we love." -Youth focus group participant

Total Number of Homeless Children/Youth According to Primary Nighttime Residence. 2017-18 School Year

	Chelsea	Revere	Winthrop
Total Number of Students Enrolled in District	6,088	7,544	1,983
Shelters	70	55	
Doubled-up	370	121	
Unsheltered (e.g., cars, parks, campgrounds, etc.)			
Hotel	23	11	
Total	**463**	**191**	**14**
Total Unaccompanied Youth		22	

*The Department redacts numbers less than ten (10) for student privacy reasons
Data Source: Office of Student and Family Support, MA DESE

Focus group participants and key informants reported that a lack of affordable housing has increased the homeless population. Furthermore, the increase in rent and housing costs has led to overcrowded conditions, as people are doubling and tripling up in apartments because they cannot afford to live alone or pay for extra rooms.
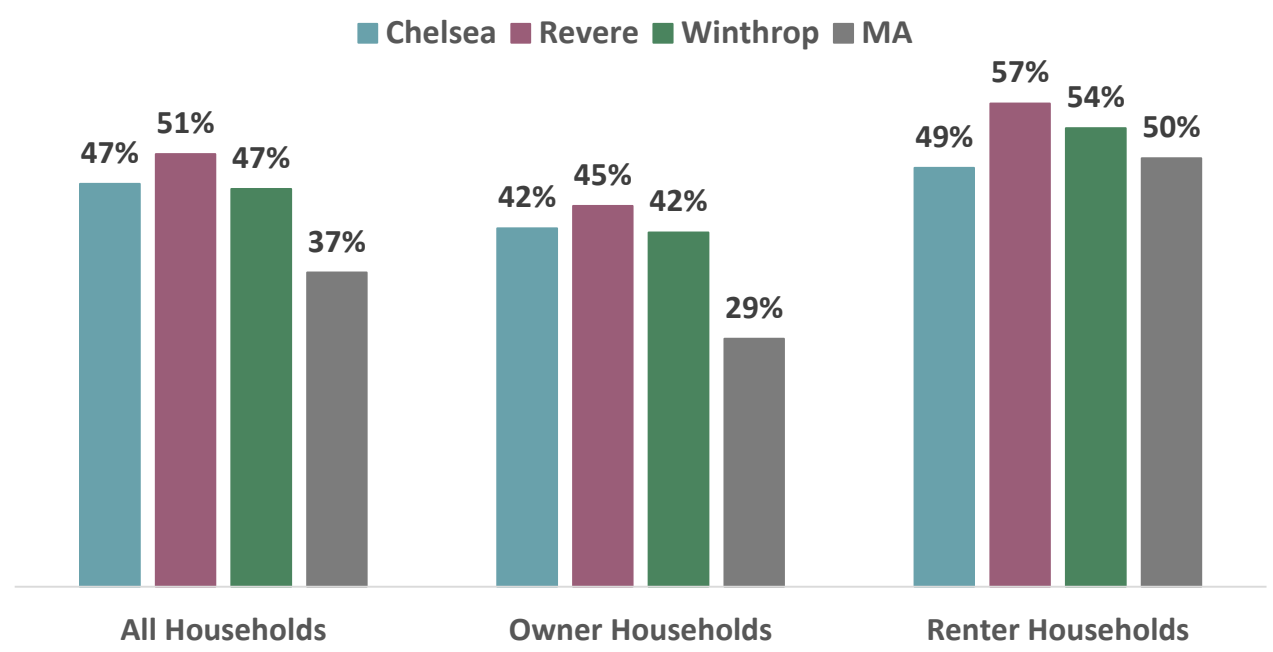
Point in Time of Unsheltered Persons Count, 2019

Chelsea	Revere
1	3

Data Source: CAPIC conducted the point in time count on 1/31/19 from 12:30am-3:30am.

"While the official count for that evening was 1 and 3 respectively, service providers familiar with homeless individuals have indicated that the numbers are low and not reflective of the complete homeless population in Chelsea and Revere "

Percent of Cost Burdened Households, by Race/Ethnicity, 2012-2016

	Chelsea	Revere	Winthrop	MA
Black or African-American Cost Burdened	26%	24%	78%	25%
American Indian or Alaska Native Cost Burdened	10%	0%	NA	23%
Asian Cost Burdened	16%	25%	9%	19%
Hispanic (any race) Cost Burdened	26%	23%	23%	26%
Other Race Cost Burdened	11%	19%	8%	21%
White Cost Burdened	20%	23%	25%	18%

Note: Certain population groups have a smaller overall N so certain percentages may appear high due the effect of a small sample size.
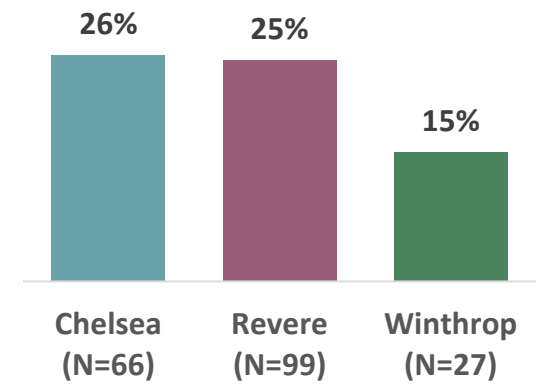
Definitions: Cost Burdened: Those paying 30-50% of their monthly income on housing
Data Source: American Community Survey (ACS), 2012-2016

	Combined	Chelsea	Revere	Winthrop
Fear will be evicted or foreclosed because no rent/mortgage payment	14%	14%	16%	12%
Fear might become homeless in next year	9%	10%	11%	6%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Foreign-born Survey Respondents who Fear They Will be Evicted or Foreclosed Due to No Rent/Mortgage Payment

Chelsea (N=66)	Revere (N=99)	Winthrop (N=27)
26%	25%	15%

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the total N for the foreign-born population in each community
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Survey Respondents who Fear will be Evicted or Foreclosed Because No Rent/Mortgage Payment

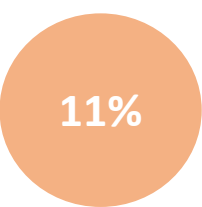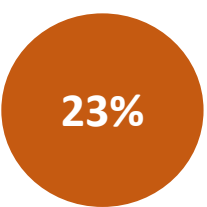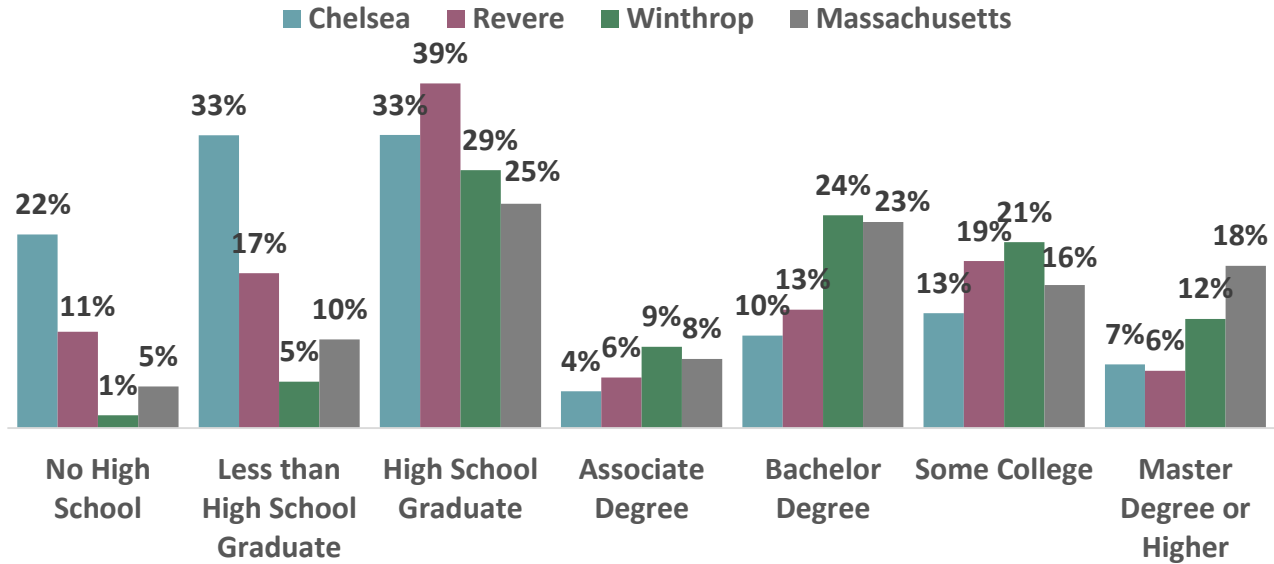| Not Hispanic/Latino (N=826)	Hispanic/Latino (N=292)
11%	23%

INCOME, EDUCATION, & EMPLOYMENT

Education Attainment, ACS 2012-2016

Legend: Chelsea, Revere, Winthrop, Massachusetts

Category	Chelsea	Revere	Winthrop	Massachusetts
No High School	22%	11%	1%	5%
Less than High School Graduate	33%	17%	5%	10%
High School Graduate	33%	39%	29%	25%
Associate Degree	4%	6%	9%	8%
Bachelor Degree	10%	13%	24%	23%
Some College	13%	19%	21%	16%
Master Degree or Higher	7%	6%	12%	18%

Data Source: American Community Survey (ACS), 2012-2016

Plans After Graduation, 2017-2018 School Year

Plan	Chelsea	Revere	Winthrop	MA
4-Year Private College	8%	19%	**43%**	29%
4-Year Public College	21%	27%	25%	31%
2-Year Private College	0%	1.1%	3%	0.5%
2-Year Public College	**38%**	37%	17%	19%
Other Post-Secondary	2%	2%	0%	2%
Apprenticeship	0%	0.%	0%	0.4%
Work	**12%**	9%	0%	0%
Military	2%	1%	1%	2%
Other	5%	2%	2%	2%
Unknown	11%	2%	10%	5%

Data Source: MA DESE

High School Graduation Rate (2018)

Chelsea	Revere	Winthrop	MA
67%	86%	88%	88%

Data Source: MA DESE

High School Dropout Rate 2017-2018

Chelsea	7%
Revere	2%
Winthrop	4%
MA	2%

Data Source: MA DESE

Top 5 Industries of the Employed, 2014

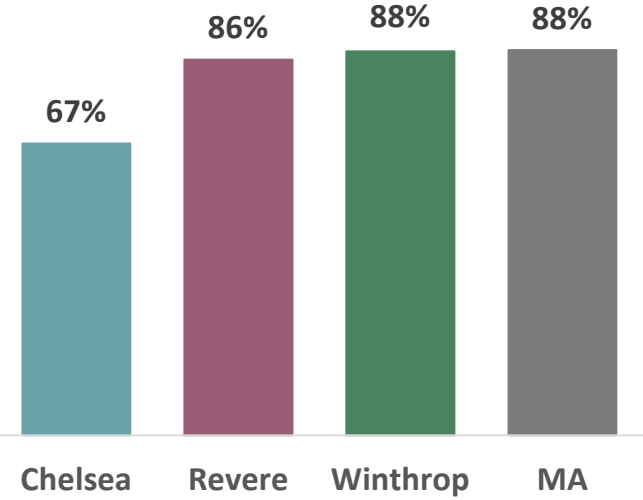| Rank	Chelsea	Revere	Winthrop	MA
1.	Service (89%)	Service (92%)	Service (89%)	Service (88%)
2.	Trade, Transportation & Utilities (31%)	Education & Health Services (28%)	Education & Health Services (32%)	Education & Health Services (28%)
3.	Education & Health Services (23%)	Trade, Transportation & Utilities (24%)	Leisure and Hospitality (18%)	Trade, Transportation & Utilities (17%)
4.	Professional & Business Services (12%)	Leisure and Hospitality (16%)	Trade, Transportation & Utilities (13%)	Professional & Business Services (15%)
5.	Goods Producing (11%)	Goods Producing (8%)	Goods Producing (11%)	Goods Producing (12%)

Data Source: American Community Survey (ACS)

Employment Status of Survey Respondents

	Combined	Chelsea	Revere	Winthrop
Employed full time	**50%**	**57%**	**54%**	**54%**
Employed part time or seasonal work	13%	13%	13%	15%
Self-employed	4%	3%	4%	6%
A homemaker	6%	6%	8%	4%
A student	8%	16%	6%	6%
Out of work	2%	2%	3%	1%
Unable to work	3%	3%	5%	4%
Retired	12%	6%	16%	18%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

INCOME, EDUCATION, & EMPLOYMENT

Percent of Survey Respondents with Children, Ages 5-12, who Have Difficulty Finding After-School Programs

- Combined: 42%
- Chelsea: 44%
- Revere: 38%
- Winthrop: 29%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Combined: Poverty was the **6th overall health concern** for survey respondents

Revere: Poverty was the **5th overall health concern** for survey respondents

Chelsea: Poverty was the **4th overall health concern** for survey respondents

Winthrop: Poverty was the **19th overall health concern** for survey respondents
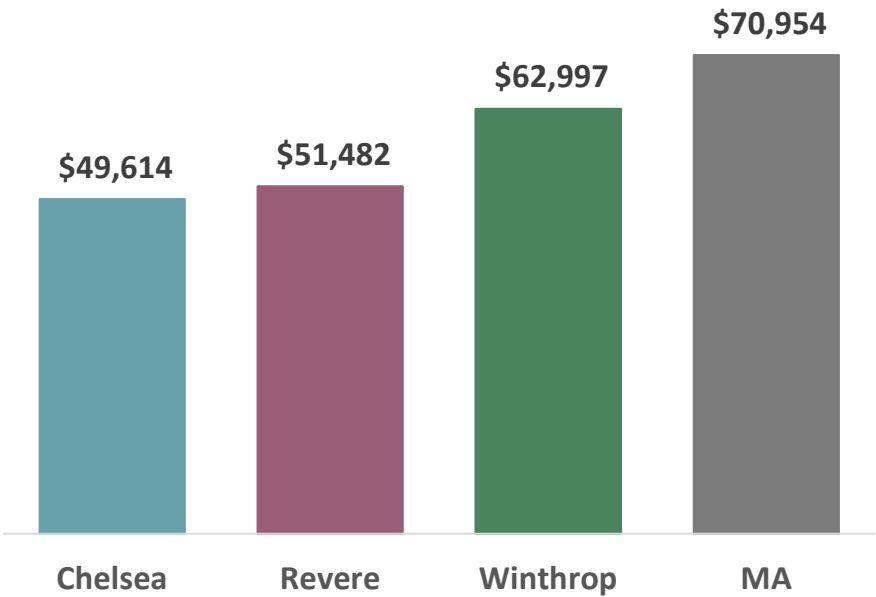
Percent of Population in Poverty, 2012-2016

Under 6 Years old			
29%	19%	14%	17%

- Chelsea: 19%
- Revere: 13%
- Winthrop: 9%
- MA: 11%

Data Source: American Community Survey (ACS), 2012-2016

Top 3 Reasons for Difficulty of Finding After-School Programs

Rank	Combined	Chelsea	Revere	Winthrop
1.	Cost (62%)	Cost (55%)	Cost (64%)	Cost (72%)
2.	Lack of available school programs (33%)	Lack of open slots for new youth (40%)	Lack of available school programs (38%)	Lack of available school programs (28%)
3.	Location (25%)	Lack of available school programs (32%)	Inconvenient hours (24%)	Quality (25%)

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Median Household Income by Race/Ethnicity

	Chelsea	Revere	Winthrop	MA
Overall	$49,164	$51,482	$62,997	$70,954
Black alone	$46,000	$62,637	$0	$44,117
Asian alone	$42,478	$70,455	$0	$82,020
Latino	$50,298	$56,497	$66,726	$37,100
Multi-race	$56,149	$67,722	$40,880	$52,864
White Non-Hispanic	$50,855	$47,469	$63,892	$77,261
Some Other Race alone	$35,938	$68,073	$0	$35,169
White alone	$49,593	$49,439	$64,219	$75,387

***Note:** Certain population groups have a smaller overall N so certain percentages may appear high due the effect of a small sample size.*
Data Source: American Community Survey (ACS), 2012-2016

Percent of Population in Poverty, by Race/Ethnicity, ACS 2012-2016

	Chelsea	Revere	Winthrop	MA
American Indian population	42%	6%	NA	22%
Asian population	7%	13%	15%	14%
Black population	17%	8%	8%	22%
Latino population	21%	11%	7%	29%
Multi-race population	21%	12%	18%	19%
Other race alone population	29%	5%	42%	30%
White Non-Hispanic population	13%	14%	9%	8%

***Note:** Certain population groups have a smaller overall N so certain percentages may appear high due the effect of a small sample size.*
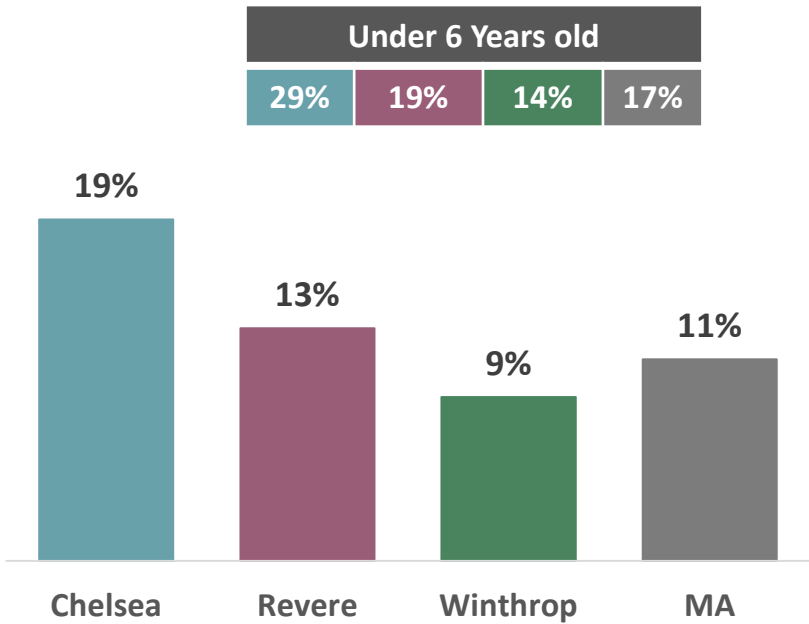*Data Source: American Community Survey (ACS), 2012-2016*

Indices of Economic Well-being

	Chelsea	Revere	Winthrop	MA
GINI Index	0.4449	0.4425	0.4756	0.4826

The Gini index or Gini coefficient is a statistical measure of distribution developed by the Italian statistician CorradoGini in 1912. It is often used as a gauge of economic inequality, measuring income distribution or, less commonly, wealth distribution among a population

	Chelsea	Revere	Winthrop	MA
Hardship Index	45.73	38.44	28.58	--

The MA Hardship Index is a standardized index across all census tracts in Massachusetts. Higher scores indicate greater economic hardship.

Data Source: Analysis and Hardship Index calculation by Monica Gerber, MPH.

Median Household Income, ACS 2012-2016

- Chelsea: $49,614
- Revere: $51,482
- Winthrop: $62,997
- MA: $70,954

Data Source: American Community Survey (ACS), 2012-2016

MENTAL HEALTH

**Combined:** Mental health was the **3rd overall health concern** for survey respondents

Revere: Mental health was the **2nd overall health concern** for survey respondents

Chelsea: Mental health was the **3rd overall health concern** for survey respondents

Winthrop: Mental health was the **3rd overall health concern** for survey respondents

Mental Health Emergency Department Visits, 2007-2014
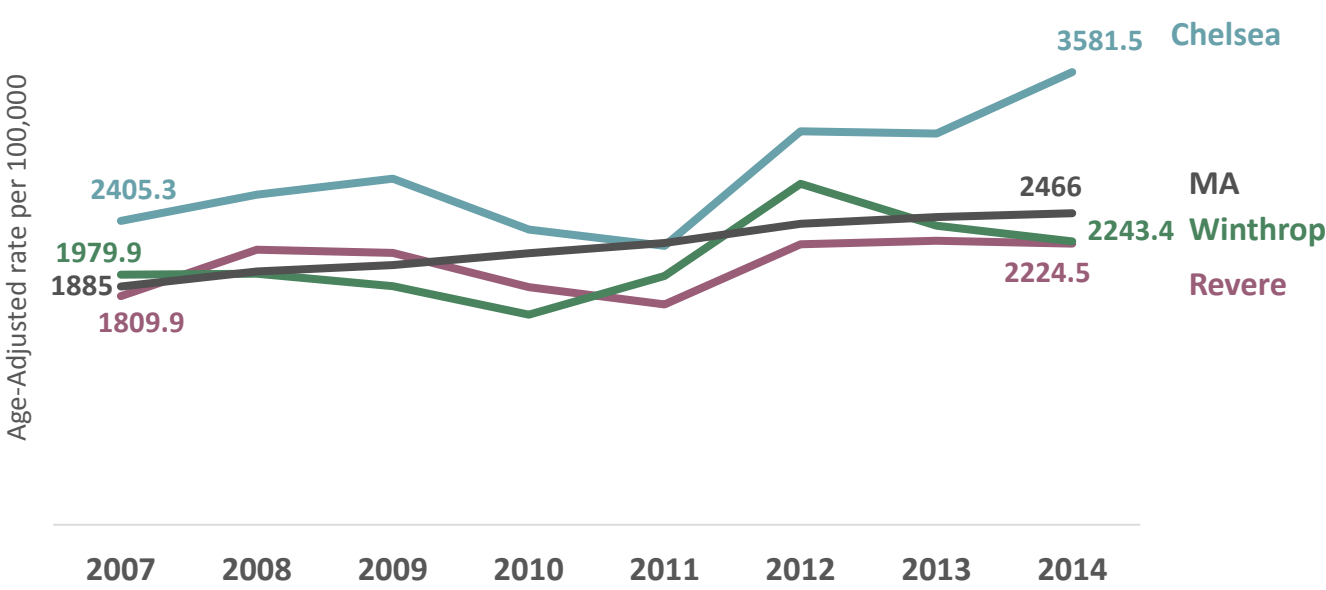
Data source: Center for Health Information and Analysis (CHIA) - Each chronic disease indicator is calculated by analyzing the primary diagnosis code associated with the emergency department visit or hospitalization. The following ICD-9-CM diagnosis codes were used to identify Mental health: 290*-319*

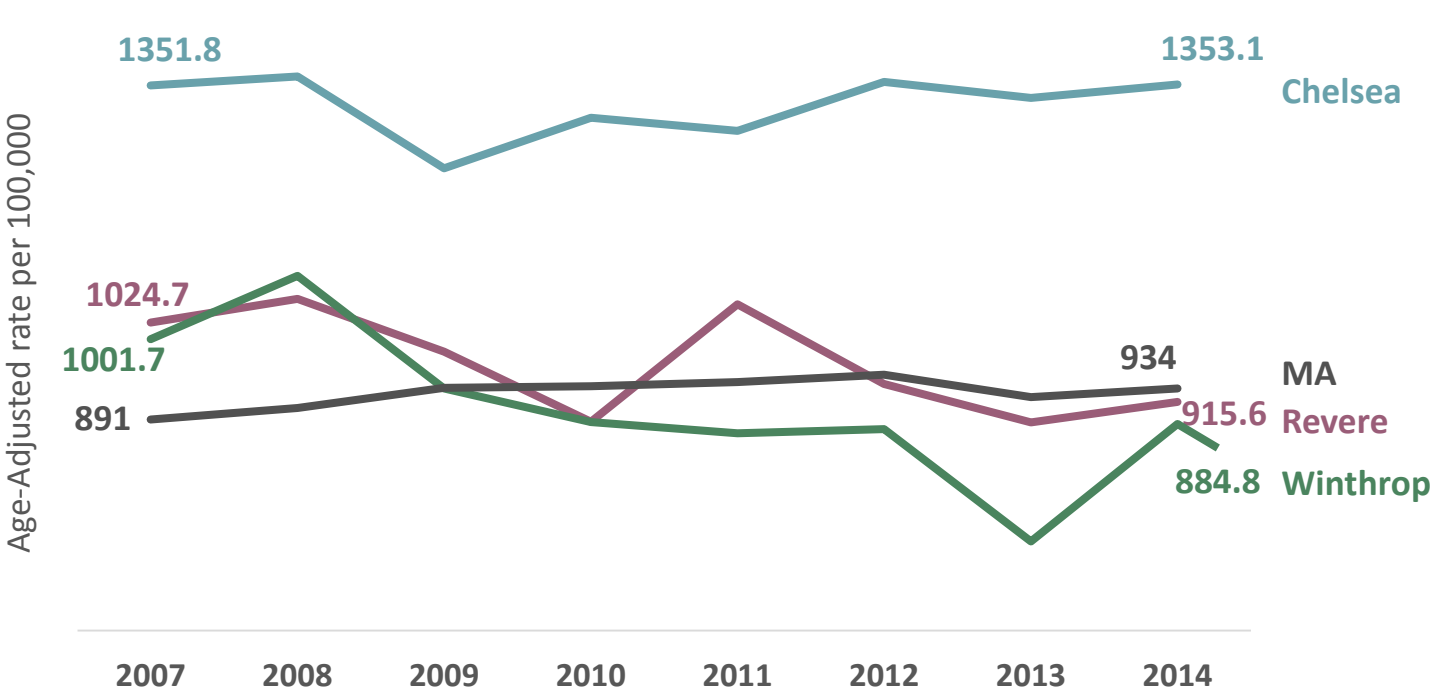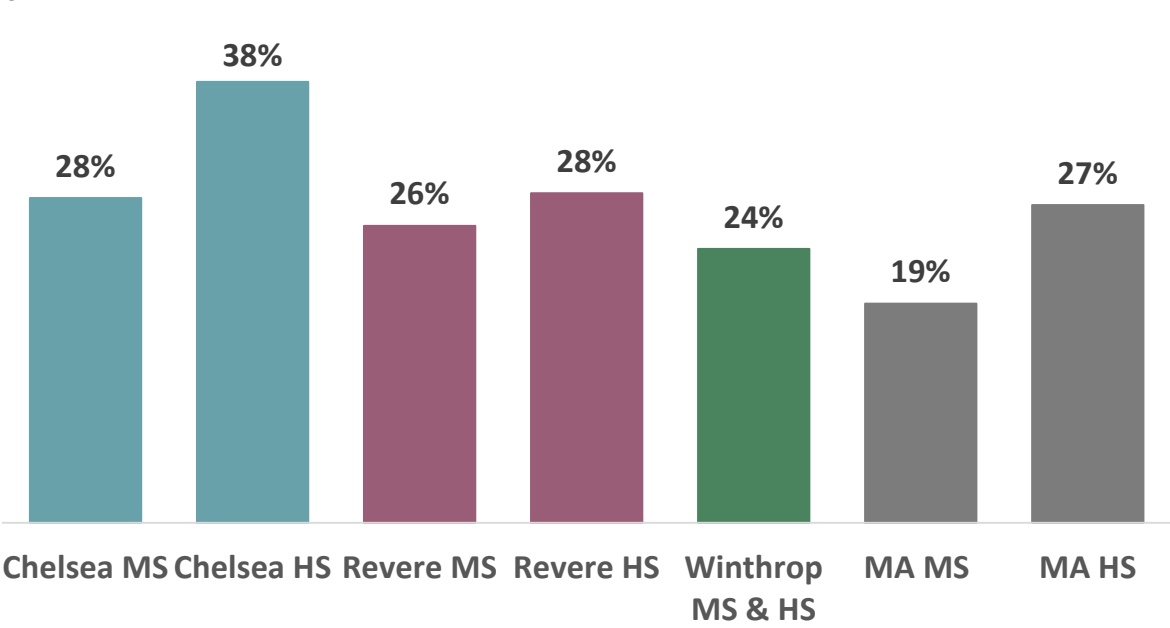## Mental Health Hospital Admissions, 2007-2014

Data source: Center for Health Information and Analysis (CHIA) - Each chronic disease indicator is calculated by analyzing the primary diagnosis code associated with the emergency department visit or hospitalization. The following ICD-9-CM diagnosis codes were used to identify Mental health: 290*-319*

Focus group participants and key informants reported that **stigma poses a barrier for people to access care for mental health services**, stating that shame, guilt, and fear prevent those who are using substances from seeking treatment, support, and services; this in turn ***"stops people from living their lives".***

Mental Health Emergency Department Visits Age-Adjusted Rate per 100,000, by Sex, 2007-14

Year	Chelsea Male	Chelsea Female	Revere Male	Revere Female	Winthrop Male	Winthrop Female	MA Male	MA Female
2007	**3014.5**	**1769.1**	2003.1	1622.7	**2177.1**	**1800.2**	2156	1629
2008	**3266.1**	**1925.9**	**2316.9**	**2033.9**	2106.4	**1882.7**	2313	1715
2009	**3690.3**	**1725.5**	2373.3	**1934.2**	2270.4	1523	2425	1708
2010	**2938.6**	1700.7	2215.9	1550.8	1791.9	1552.9	2531	1791
2011	**2774.2**	1614.6	2042.9	1450.7	2165.2	1800.6	2622	1860
2012	**4216.9**	1913.3	2410.9	**2036.4**	3085.8	**2343.7**	2818	1969
2013	**4105.2**	1984.3	2511.2	1992.4	**2832.2**	1918.6	2880	2013
2014	**5006.7**	**2020.4**	2575	1875.9	2326.5	**2158.4**	2950	2007

Mental health, especially untreated mental illness, is a huge concern for youth and adults. Mental health, notably anxiety and depression, was mentioned in a variety of focus groups as a need that has gone unmet across several populations, including people in recovery or current substance users, youth, elders, and veterans, especially due to trauma. Multiple participants reported that people were dealing with a lot of stress and pressure, but oftentimes mental health is not taken seriously.
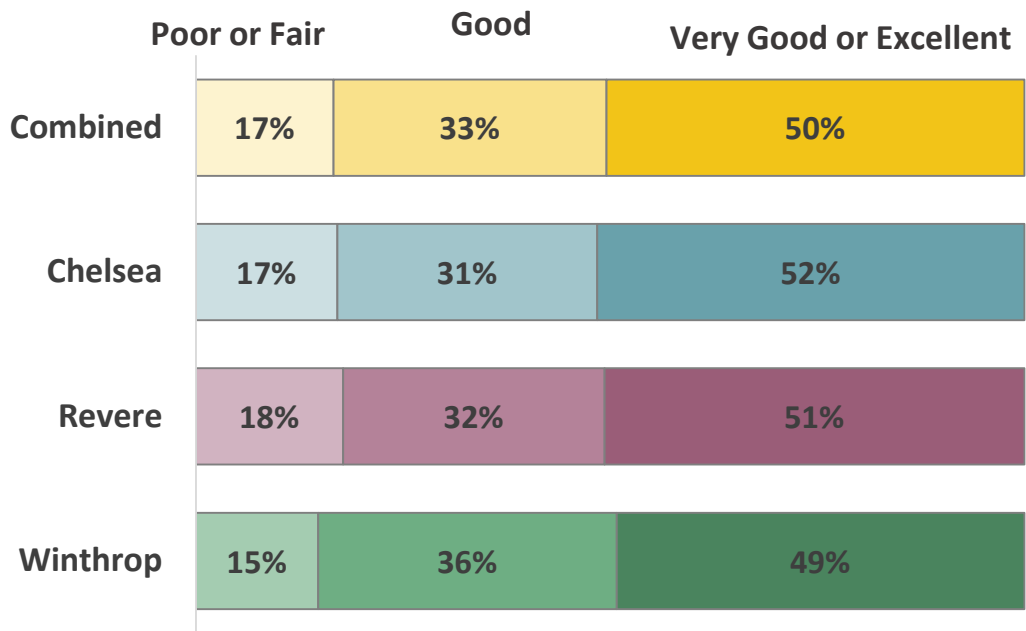
Percent of Middle and High School Students Reporting Feeling Sad or Hopeless for Two Weeks

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

MENTAL HEALTH

In general, how would you rate your mental health?

	Poor or Fair	Good	Very Good or Excellent
Combined	17%	33%	50%
Chelsea	17%	31%	52%
Revere	18%	32%	51%
Winthrop	15%	36%	49%

Data source: North Suffolk Community Health Needs Assessment community survey

Percent of Survey Respondents who Rated Their Mental Health 'Poor or Fair', by Hispanic/Latino Ethnicity

Not Hispanic/Latino (N=820): 14.8%
Hispanic/Latino (N=284): 20.8%

Data source: North Suffolk Community Health Needs Assessment community survey

Survey Respondents who Rated Their Mental Health 'Poor or Fair' by Foreign-born Status

	Foreign-Born % (N)	Non Foreign-Born % (N)
Chelsea	13% (9)	20% (32)
Revere	15% (15)	19% (53)
Winthrop	22% (6)	14% (45)

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the Ns for those individuals that answered that question
Foreign-born is those that answered "How long have you live in the United States?"
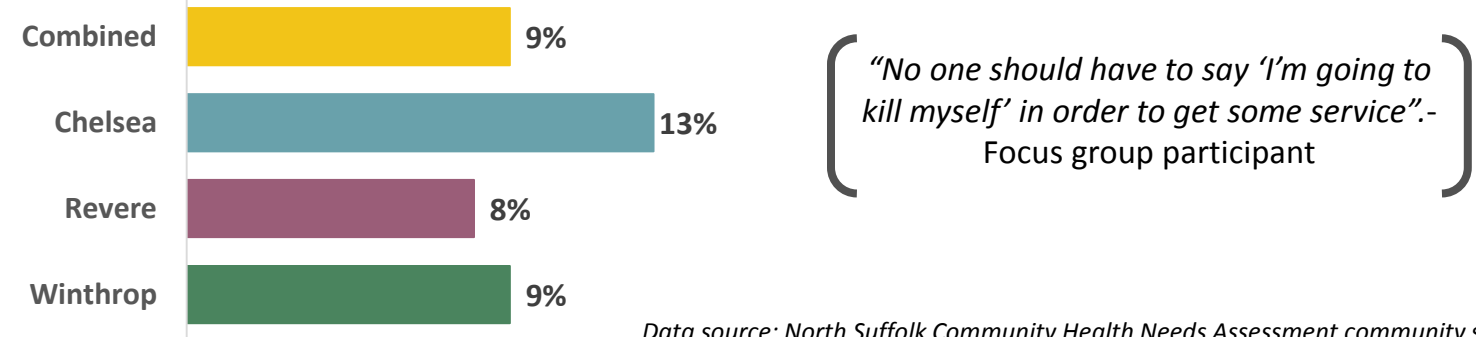*Data Source: North Suffolk Community Health Needs Assessment Community Survey*

In general, how would you rate your satisfaction with your social activities and relationships?

	Combined	Chelsea	Revere	Winthrop
Poor or Fair	20%	19%	22%	18%
Good	34%	31%	33%	37%
Very Good or Excellent	47%	50%	45%	46%

Data source: North Suffolk Community Health Needs Assessment community survey

Percent of Middle and High School Students Reporting Suicide Ideation
Black boxes=did not ask on survey

	Chelsea MS	Chelsea HS	Revere MS	Revere HS	Winthrop Combined MS & HS	MA MS	MA HS
Seriously considered suicide	20%	13%	18%	8%	14%	9%	12%
Made suicide plan	11%	■	10%	7%	9%	■	10.9%
Attempted suicide	■	7%	■	5%	2%	4%	5%

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

Percent of Survey Respondents who Needed Mental Health Services but Could Not Access

Combined: 9%
Chelsea: 13%
Revere: 8%
Winthrop: 9%

"No one should have to say 'I'm going to kill myself' in order to get some service".- Focus group participant

Data source: North Suffolk Community Health Needs Assessment community survey

Percent of 65+ Population Living Alone

Chelsea: 45%
Revere: 34%
Winthrop: 38%
MA: 30%

Data source: American Community Survey (ACS), 2012-2016

SOCIAL ENVIRONMENT

Top 5 Strengths of Community

Combined

Community is close to the city of Boston	89%
Community has people of many races and cultures	62%
Community has good access to resouces	49%
People are proud of their community	47%
People care about improving their community	47%

Chelsea

Community is close to the city of Boston	84%
Community has people of many races and cultures	82%
Community has good access to resouces	58%
People accept other who are different than themselves	56%
People care about improving their community	51%

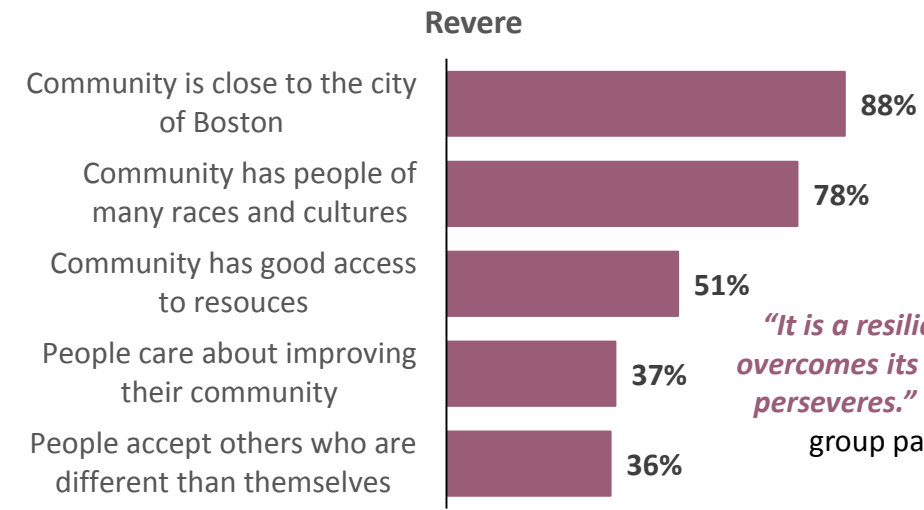*"I don't feel that, when I walk in Chelsea, people will judge me because of who I am".* Chelsea focus group participant
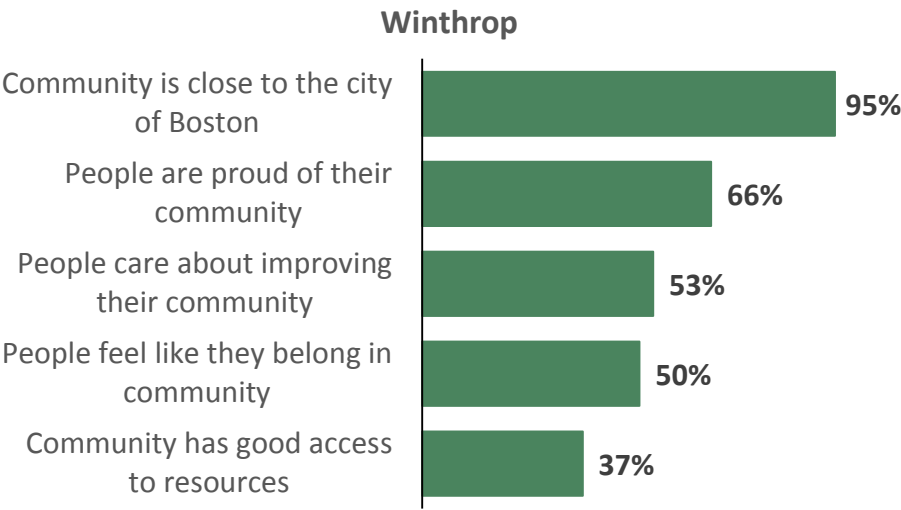
"...We are an immigrant city, you get to know about different people and make friends. I belong to a lot of groups." Chelsea focus group participant

Revere

Community is close to the city of Boston	88%
Community has people of many races and cultures	78%
Community has good access to resouces	51%
People care about improving their community	37%
People accept others who are different than themselves	36%

"It is a resilient city that overcomes its obstacles and perseveres." Revere focus group participant

Winthrop

Community is close to the city of Boston	95%
People are proud of their community	66%
People care about improving their community	53%
People feel like they belong in community	50%
Community has good access to resources	37%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Physical location and proximity to Boston is a strength for all three communities. Focus group participants and key informants across multiple populations discussed the benefit of being so close to Boston to access services and care. The physical location of these communities was a highlight for many focus group participants in particular.

Resilience was mentioned several times as a strength in Chelsea and Revere. Participants in both communities reported that the populations they work with or are a part of are strong willed and have a desire to access services to improve, despite all of the adversity they have faced.

The Amount of First Names of their Neighbors Survey Respondents Know

	None	A few/Some	Most	All
Combined	10%	57%	27%	6%
Chelsea	15%	61%	21%	2%
Revere	12%	61%	23%	4%
Winthrop	2%	50%	37%	10%

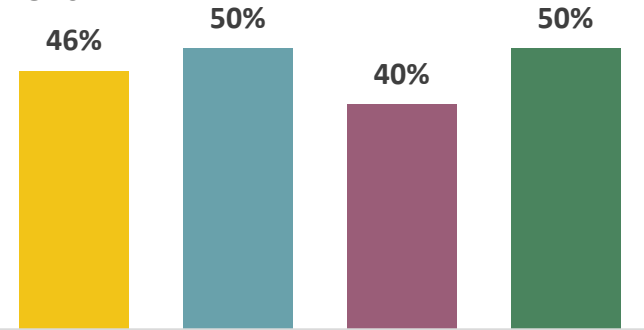Data source: North Suffolk Community Health Needs Assessment community survey

The beach is a strength in both Revere and Winthrop. Multiple focus group participants stated that the beach in Winthrop is beautiful, and that the beach in Revere helps to bring the community together. One youth participant stated, *"There are people from other cities that come to the beach; you get to learn about other people's cultures and it exposes us to different things that people in other cities that are predominantly White don't get".*

Youth Participating in Community Service in Past Year
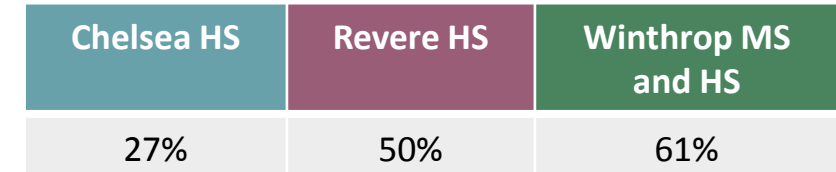
Chelsea HS	Revere HS	Winthrop MS and HS
27%	50%	61%

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

Survey Respondents Volunteering at Least 1 hour Per Month

Combined	Chelsea	Revere	Winthrop
46%	50%	40%	50%

Data source: North Suffolk Community Health Needs Assessment community survey

Percent of Public School Students who are Economically Disadvantaged
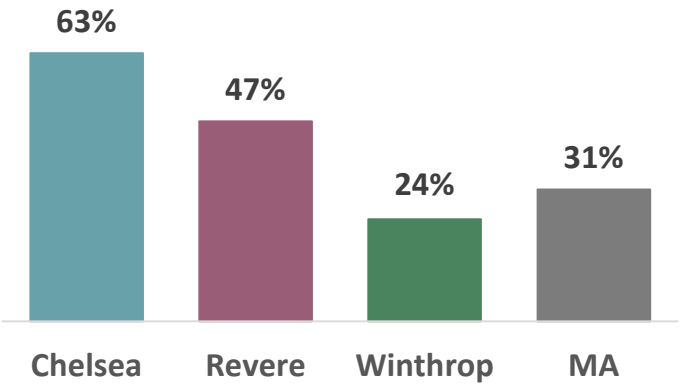
Chelsea	Revere	Winthrop	MA
63%	47%	24%	31%

The measure is based on a student's participation in one or more of the following state-administered programs: the Supplemental Nutrition Assistance Program (SNAP); the Transitional Assistance for Families with Dependent Children (TAFDC); the Department of Children and Families' (DCF) foster care program; and MassHealth (Medicaid)

SOCIAL ENVIRONMENT

Top 5 Factors that Define a Healthy Community

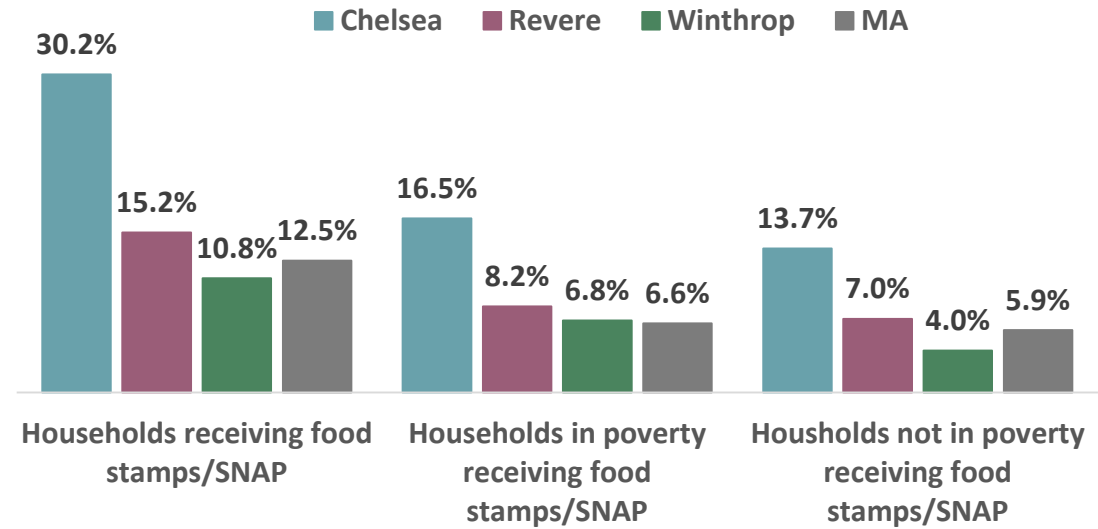| Rank	Combined	Chelsea	Revere	Winthrop
1.	Access to health care (58%)	Affordable housing (63%)	Access to health care (59%)	Low crime; low violence & safe neighborhoods (61%)
2.	Low crime; low violence & safe neighborhoods (56%)	Access to health care (62%)	Low crime; low violence & safe neighborhoods (55%)	Good schools (58%)
3.	Affordable housing (56%)	Low crime; low violence & safe neighborhoods (53%)	Good schools (53%)	Access to health care (55%)
4.	Good schools (54%)	Good schools (52%)	Affordable housing (53%)	Affordable housing (53%)
5.	Access to healthy food (42%)	Access to health food (48%)	Effective city services (36%)	Clean environment (45%)

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Survey Respondents Who Have Attended the Following in Past Year

	Combined	Chelsea	Revere	Winthrop
City sponsored public hearing	35%	36%	28%	43%
Meeting with city staff or elected official(s)	31%	32%	28%	34%
Community event	**70%**	**68%**	**70%**	**74%**
Apartment or homeowners group meeting	12%	16%	10%	11%
Neighborhood association/organization meeting	16%	18%	17%	13%
Issue-based advocacy group meeting	16%	19%	8%	21%
Ethnic or cultural organization meeting	11%	19%	9%	6%
Faith-based group meeting	22%	23%	25%	19%
Interest-based organization/cub	20%	21%	13%	27%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Households Receiving Food Stamps/SNAP, 2012-2016

Chelsea, Revere, Winthrop, MA

- Households receiving food stamps/SNAP: 30.2%, 15.2%, 10.8%, 12.5%
- Households in poverty receiving food stamps/SNAP: 16.5%, 8.2%, 6.8%, 6.6%
- Houslds not in poverty receiving food stamps/SNAP: 13.7%, 7.0%, 4.0%, 5.9%

Data Source: American Community Survey (ACS), 2012-2016

SNAP Gap Percentage, 2018

- Chelsea: 59%
- Revere: 62%
- Winthrop: 53%
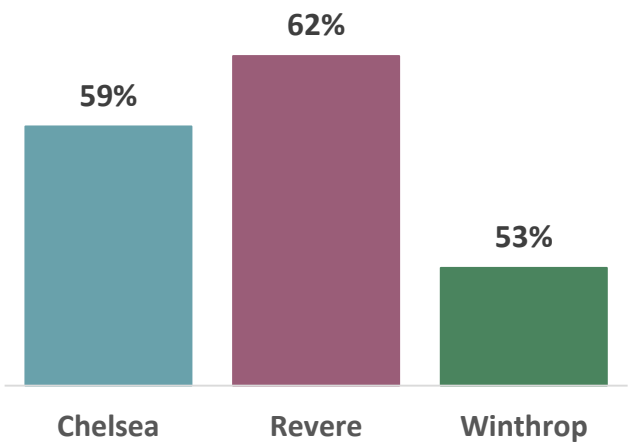
The SNAP Gap is the difference between the number of low-income MA residents receiving MassHealth who are likely SNAP eligible and the number of people actually receiving SNAP.

Top 4 Avenues for Information Gathering of Survey Respondents

	Combined	Chelsea	Revere	Winthrop
Local newspaper	52%	43%	50%	63%
Neighbors, family, or friends	49%	45%	47%	54%
City website or newsletters	43%	43%	38%	48%
Socia media	65%	63%	62%	69%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Households Receiving Food Stamps/SNAP, by Select Race/Ethnicity 2012-16

	Chelsea	Revere	Winthrop	MA
Black Households	36%	9%	6%	29%
Asian Households	5%	15%	0%	12%
Hispanic Households	38%	14%	16%	39%
Multi-race Households	36%	26%	0%	26%
White Non-Hispanic Households	21%	16%	11%	8%
Other Race Households	34%	5%	0%	41%

Note: Certain population groups have a smaller overall N so certain percentages may appear high due the effect of a small sample size.
Data Source: American Community Survey (ACS), 2012-2016

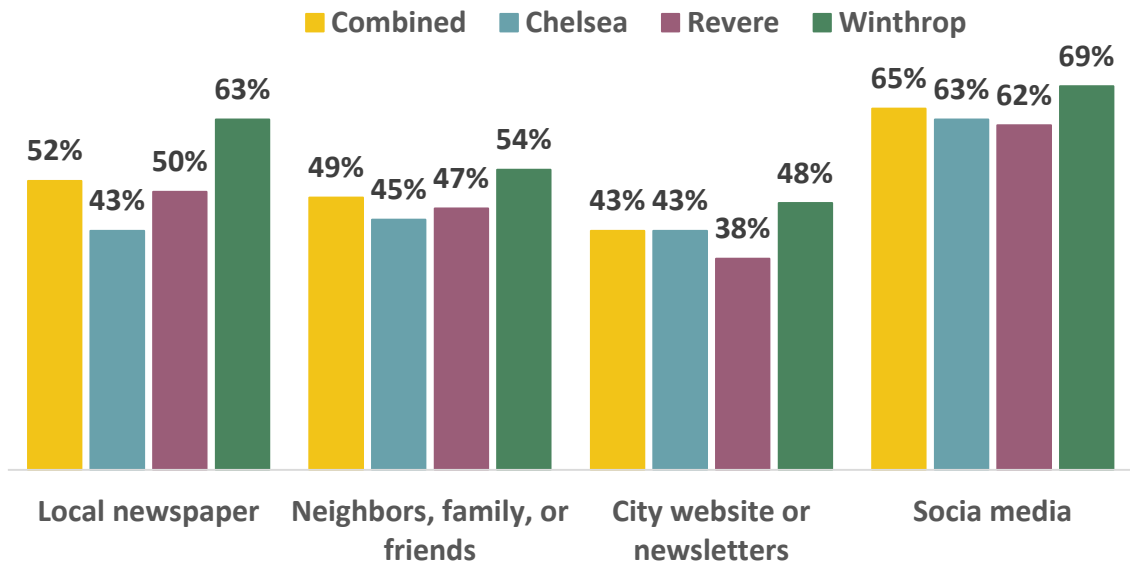|	SNAP	SNAP Gap #
Chelsea	8,097	11,551
Revere	7,943	13,027
Winthrop	1,567	1,772

Data Source: The Food Bank of Western Massachusetts, accessed:
https://public.tableau.com/profile/food.bank.of.western.ma#!/vizhome/SNAPGap2018/DistrictData

Survey Respondents who have Went Hungry Because There Was not Enough Money for Food in Past 12 Months

	Overall % (N)	Foreign-Born % (N)	Non Foreign-Born % (N)
Chelsea	10% (35)	9% (6)	14% (23)
Revere	9% (43)	6% (6)	10% (29)
Winthrop	6% (24)	11% (3)	6% (19)

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the Ns for those individuals that answered that question.
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey
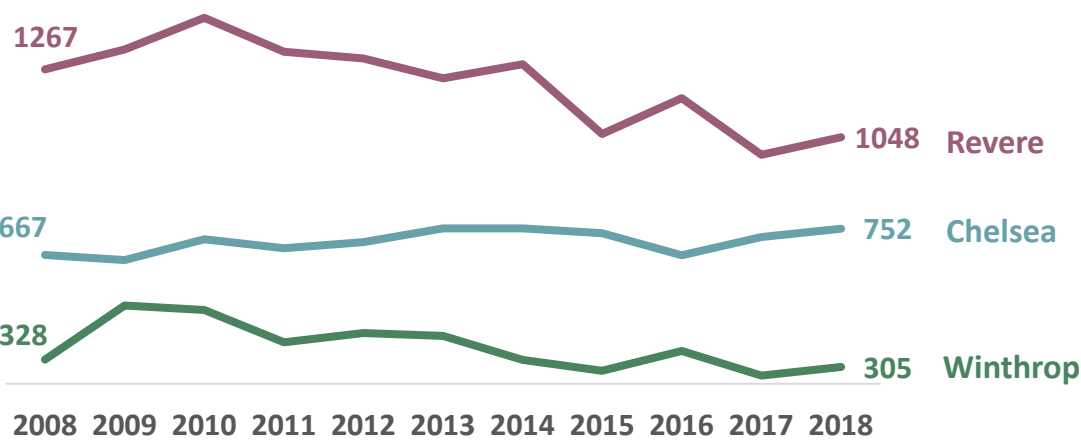
SUBSTANCE USE DISORDERS (SUDs)

Combined: SUDs was the **top overall health concern** for survey respondents

Revere: SUDs was the **top overall health concern** for survey respondents

Chelsea: SUDs was the **top overall health concern** for survey respondents

Winthrop: SUDs was the **top overall health concern** for survey respondents

Among focus group participants and key informants, substance use remains a pervasive issue in Chelsea, Revere, and Winthrop, affecting multiple areas of residents' lives. mentioned the negative impact of substance use across multiple populations.

Primary Drug of Use: Alcohol, Percent of BSAS Admissions, FY2008-2018

- 41%
- 30%
- 29%
- 21%
- 32% Chelsea
- 30% MA
- 30% Revere
- 24% Winthrop

"We're surrounded by yacht clubs, there's drinking everywhere-we can't do a function without alcohol."- Winthrop focus group participant

At admission, clients identify a "primary drug" of use, which is the substance for which they seek treatment.
Data Source: Treatment statistics prepared by the Office of Statistics and Evaluation, Bureau of Substance Addiction Services, MDPH

Total Number of BSAS Admissions in FY2008-2018

- 1267
- 1048 Revere
- 667
- 752 Chelsea
- 328
- 305 Winthrop

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Data Source: Treatment statistics prepared by the Office of Statistics and Evaluation, Bureau of Substance Addiction Services, MDPH on February 27th, 2019 with data as of January 10th, 2019

Select BSAS Enrollment Characteristics, FY2017

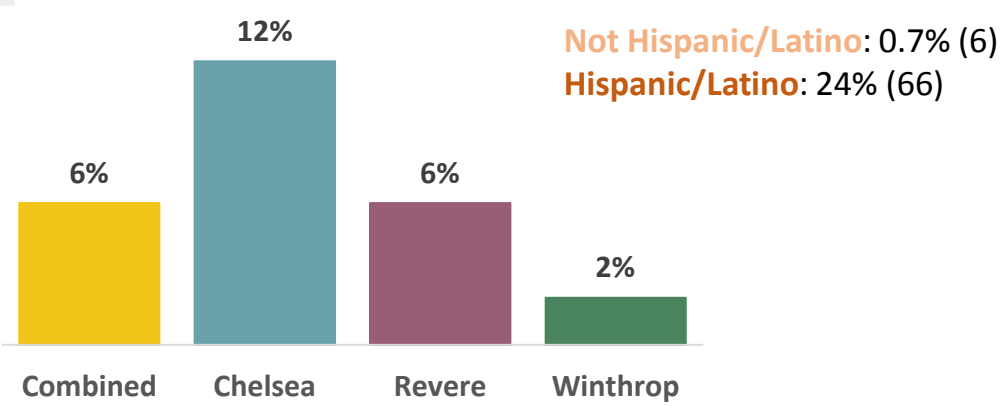|	Chelsea	Revere	Winthrop	MA
Homelessness at enrollment	33%	22%	18%	30%
Prior mental health treatment	39%	39%	47%	46%
Past year needle use	41%	51%	39%	48%

Homelessness at enrollment is collected and analyzed by: whether the client has a completed intake with 14 days prior to an enrollment and reported their address type (Home, Homeless). If there was no address type available within 14 days of a completed intake, or the address type was unable to establish certain homelessness status (e.g. Business or Mailing address types), then the variables "Does the client rent or own a house or apartment" and "Where did the client stay last night" are used to determine whether the client was homeless at the point of enrollment.
Data Source: Treatment statistics prepared by the Office of Statistics and Evaluation, Bureau of Substance Addiction Services, MDPH
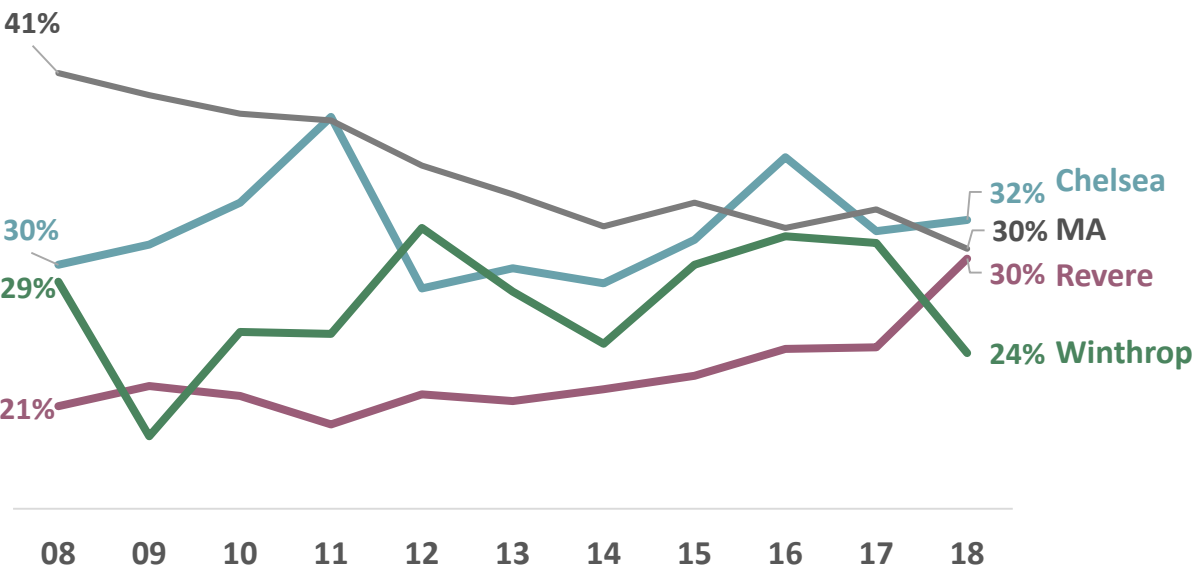
Community residents hide issues related to substance use and addiction in Winthrop and Revere. Multiple focus group participants and key informants stated that people in the community are often not open about substance use and will keep it a secret from their neighbors. This is also related to the presence of stigma that many participants mentioned in multiple focus groups. **Participants mentioned they see needles or know of people's family members that have used substances, although people will not admit it because they are ashamed and want to keep the issue to themselves.** Similarly, **youth in Revere** mentioned that people do not want to get help for substance use: *"Instead of getting help, they just hide it until it becomes a larger issue, and then it just creates more problems".*

Percent of Survey Respondents who Needed Substance Use Disorder Services or Treatment but Could Not Access

Not Hispanic/Latino: 0.7% (6)
Hispanic/Latino: 24% (66)

- 6% Combined
- 12% Chelsea
- 6% Revere
- 2% Winthrop

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Primary Drug of Use: Heroin, Percent of BSAS Admissions, FY2008-2018

- 57%
- 51%
- 48%
- 37%
- 48% Revere
- 44% MA
- 40% Winthrop
- 39% Chelsea

08 09 10 11 12 13 14 15 16 17 18

At admission, clients identify a "primary drug" of use, which is the substance for which they seek treatment.
Data Source: Treatment statistics prepared by the Office of Statistics and Evaluation, Bureau of Substance Addiction Services, MDPH

Count of Opioid-Related Overdose Deaths, 2013-2017

Year	Chelsea	Revere	Winthrop
2013	7	15	2
2014	7	27	3
2015	18	18	7
2016	14	26	4
2017	14	24	10

Data Source: Massachusetts Registry of Vital Records and Statistics, MDPH
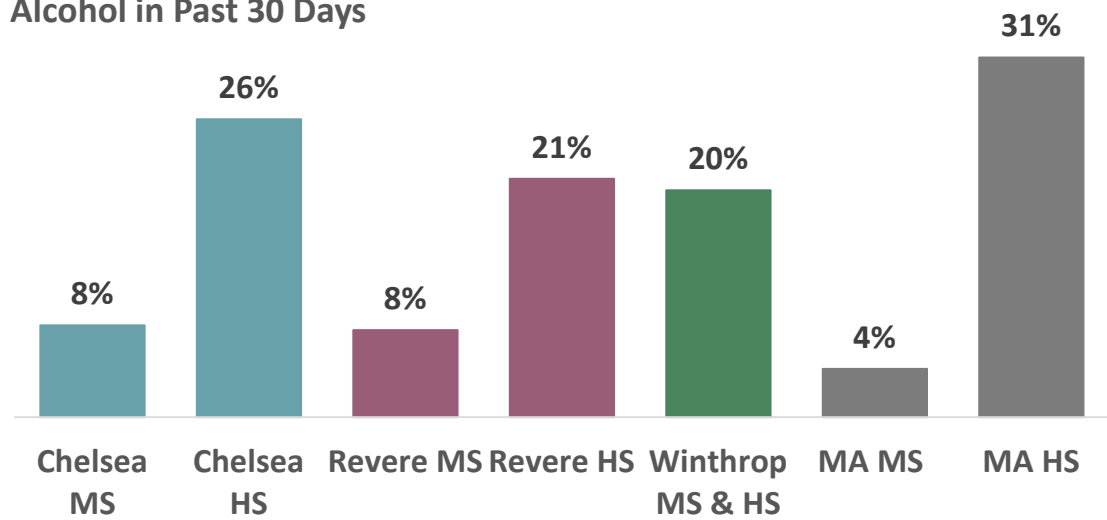
SUBSTANCE USE DISORDERS (SUDs)

Heroin Overdose Hospitalization Age-Adjusted Rate per 100,000, 2007-2014

171.7 Revere
116.7 Chelsea
105 MA
87.2 Winthrop
108.8*
59.0
47.2
29

2007 2008 2009 2010 2011 2012 2013 2014

*Number suppressed due to confidentiality for Winthrop for years 2007, 2008, and 2010
Data Source: Massachusetts Center for Health Information and Analysis (CHIA)

Non-Opioid Overdose Hospitalization Age-Adjusted Rate per 100,000, 2007-2014

301.9
262.1
238.7
229

270.7 Chelsea
269.7 Revere
237.1 Winthrop
233 MA

2007 2008 2009 2010 2011 2012 2013 2014

Data Source: Massachusetts Center for Health Information and Analysis (CHIA)

Percent of Middle and High School Students Reporting Drinking Alcohol in Past 30 Days

8% Chelsea MS
26% Chelsea HS
8% Revere MS
21% Revere HS
20% Winthrop MS & HS
4% MA MS
31% MA HS

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

According to focus group participants, youth do not perceive marijuana as harmful; one focus group participant in Revere stated, *"Since marijuana has been legalized, the youth have been using it more. Sometimes, I have found youth using marijuana treating it like a game, like it's fun..."*

Percent of Middle and High School Students Reporting Using Marijuana in Past 30 Days

5% Chelsea MS
19% Chelsea HS
5% Revere MS
18% Revere HS
10% Winthrop MS & HS
2% MA MS
24% MA HS

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey
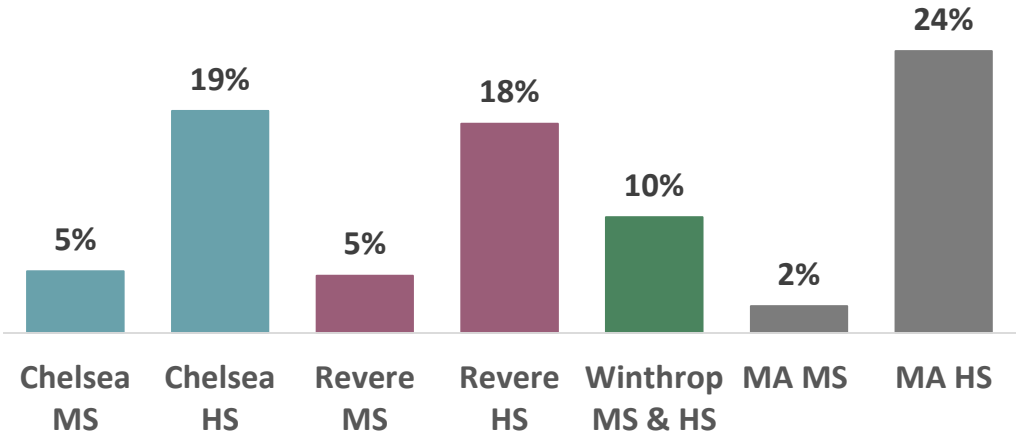
Percent of Middle and High School Students Reporting Using Electronic Vapor Products in Past 30 Days

Chelsea MS — 2%
Chelsea HS — 3%
Revere MS — 9%
Revere HS — 12%
Winthrop MS & HS — 19%
MA MS — 10%
MA HS — 20%

Winthrop reported a combined Middle and High school percentage.
Data source: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, and 2017 MA Youth Health Survey

"The other day, I walked around and saw a 10-year-old vaping. You see the middle schoolers vaping before school. It is easy to get them". Chelsea youth focus group participant

Marijuana use and vaping, particularly the JUUL, were mentioned as concerns among youth across all three communities. Youth participants mentioned that vaping is prevalent among young people, and this is especially problematic because it can be used in front of teachers in school. *One young person in a focus group in Revere mentioned that she saw a student who took a hit from a JUUL in class while the teacher was looking at him; he easily hid the JUUL in his sweatshirt.* According to focus group participants, youth do not perceive the JUUL as harmful or addictive and it seems like everyone is doing it.
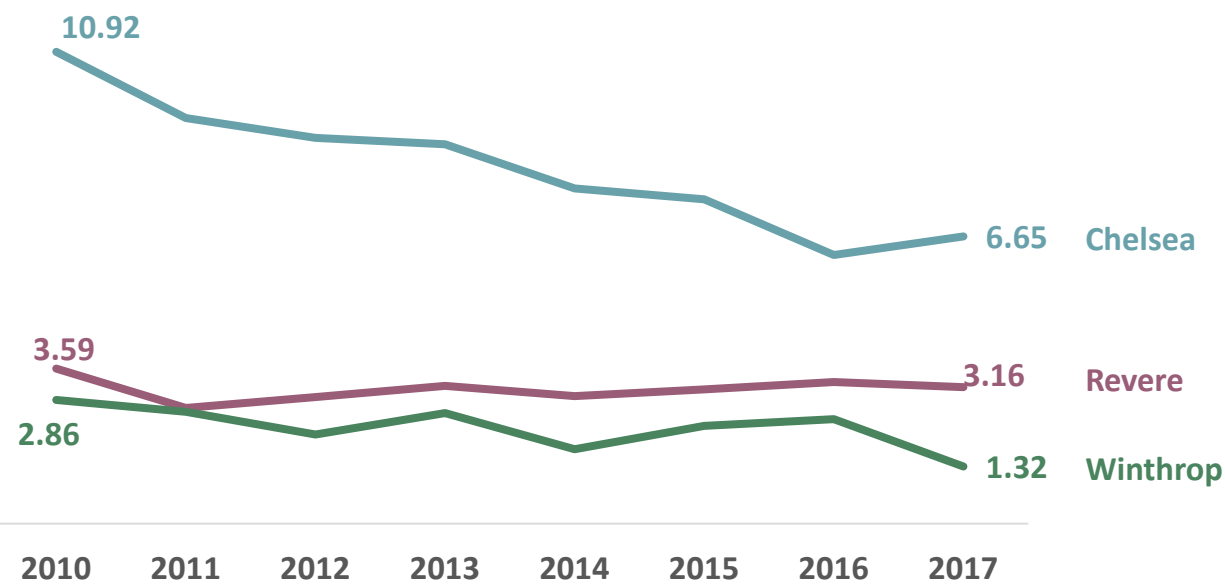
VIOLENCE AND TRAUMA

Combined: Violence was the **9th overall health concern** for survey respondents

Chelsea: Violence was the **6th overall health concern** for survey respondents

Revere: Violence was the **11th overall health concern** for survey respondents

**Winthrop:** Mental health was the **20th overall health concern** for survey respondents

Crimes Against Persons Arrests Incident Rate per 1000, 2010-2017

Chelsea: 10.92 → 6.65
Revere: 3.59 → 3.16
Winthrop: 2.86 → 1.32

2010 2011 2012 2013 2014 2015 2016 2017

Crimes Against Persons includes: murder, manslaughter, rape, sexual assault, aggravated assault, and simple assault
Data Sources: CrimeSOLV is an application which allows users to view tables and charts of crime data from police agencies in Massachusetts which report data to the Crime Reporting Unit in the format of the "National Incident Based Reporting System."

Crimes Against Property Arrests Incident Rate per 1000, 2010-2017

Chelsea: 5.34 → 2.18
Revere: 3.42 → 3.09
Winthrop: 1.43 → 0.22

2010 2011 2012 2013 2014 2015 2016 2017
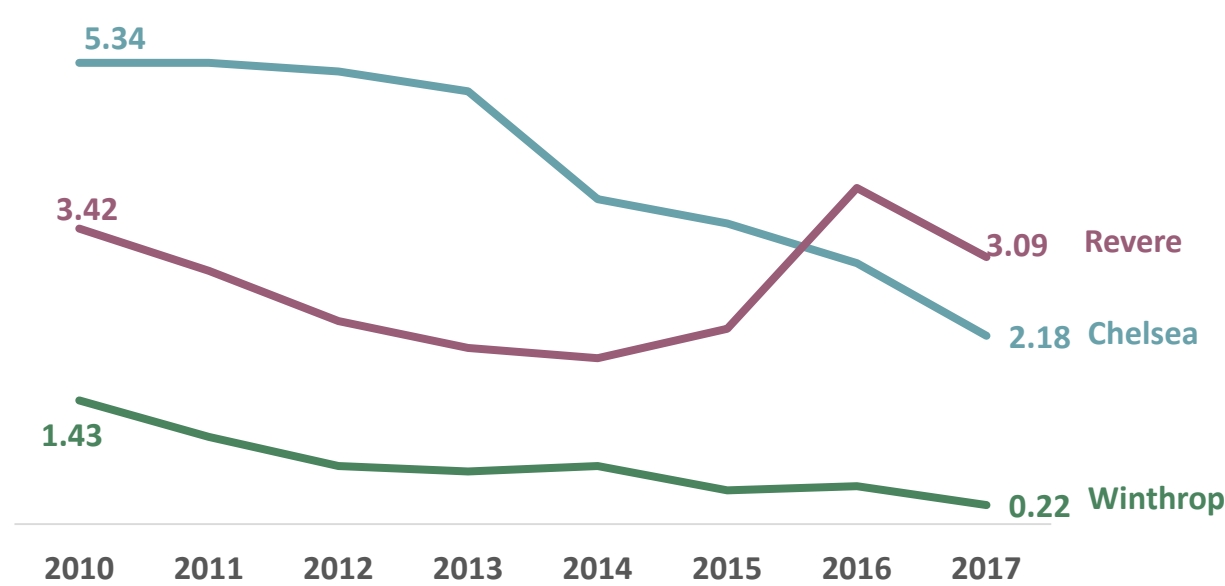
Crimes Against Property includes: arson, burglary, robbery, property damage
Data Sources: CrimeSOLV is an application which allows users to view tables and charts of crime data from police agencies in Massachusetts which report data to the Crime Reporting Unit in the format of the "National Incident Based Reporting System."
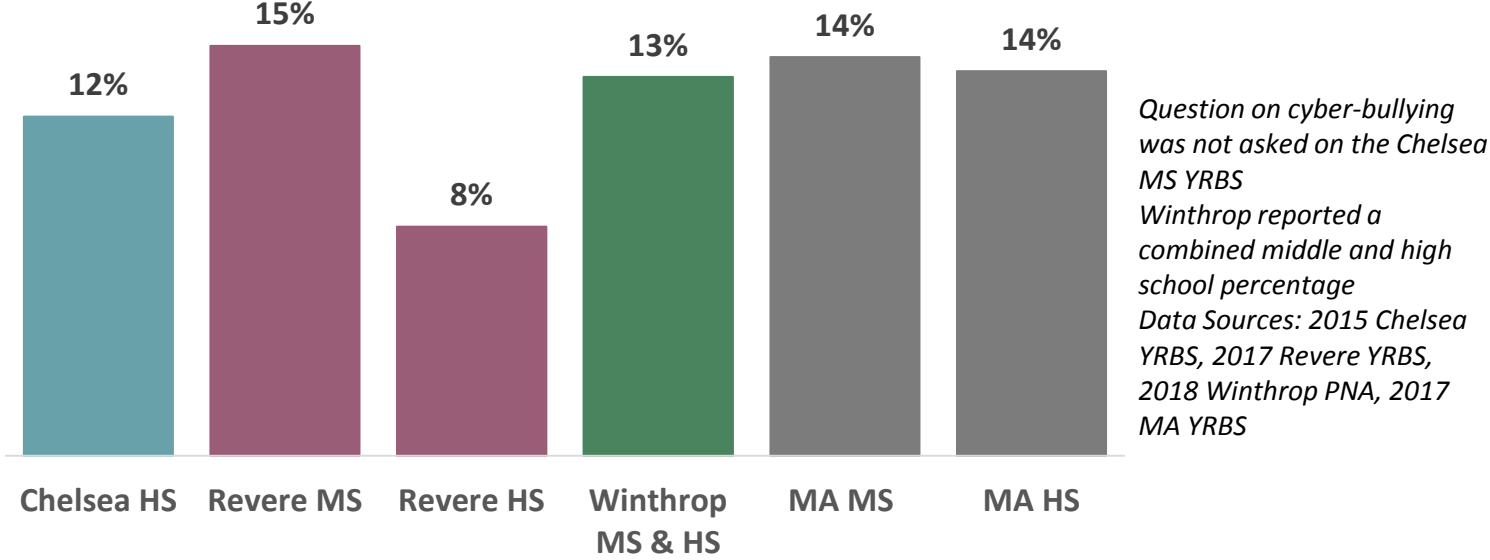
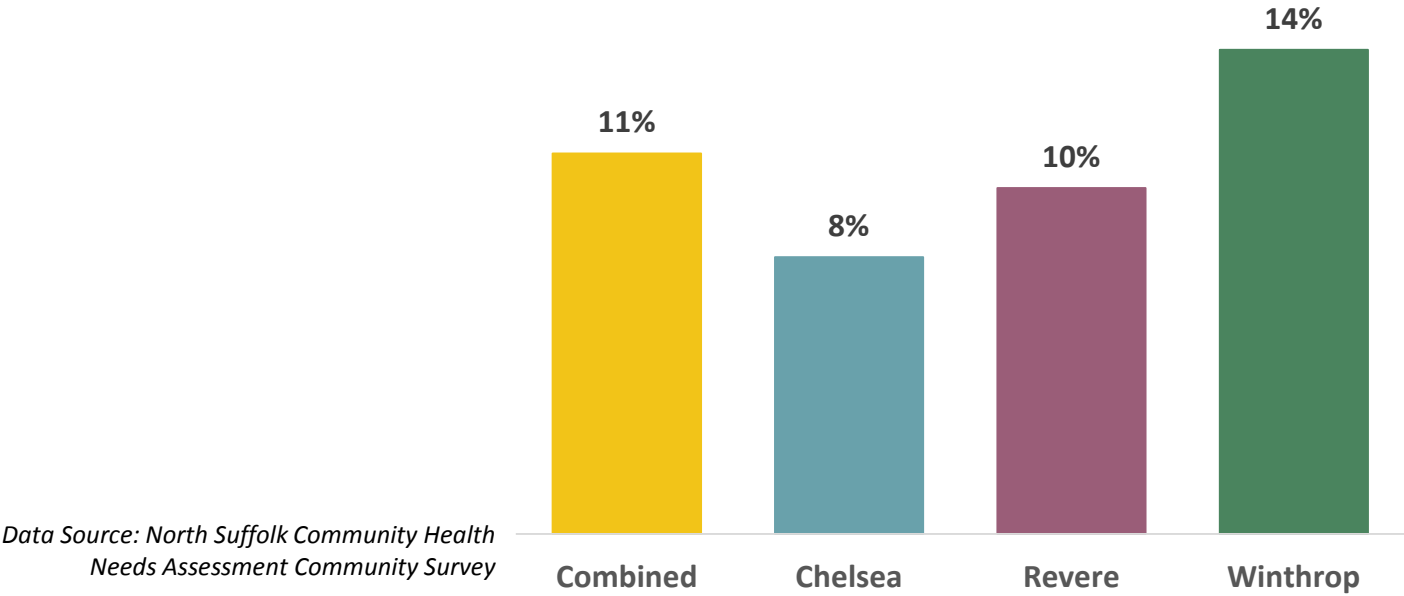## Percent of Youth Reporting Being Cyber-bullied in the Past 12 Months

Chelsea HS	Revere MS	Revere HS	Winthrop MS & HS	MA MS	MA HS
12%	15%	8%	13%	14%	14%

Question on cyber-bullying was not asked on the Chelsea MS YRBS
Winthrop reported a combined middle and high school percentage
Data Sources: 2015 Chelsea YRBS, 2017 Revere YRBS, 2018 Winthrop PNA, 2017 MA YRBS

Homicide Crude Death Rate per 100,000, 2013-16

	Chelsea Rate (N)	Revere Rate (N)	Winthrop Rate (N)	MA Rate (N)
2013	8.53 (3)	5.80 (3)	0 (0)	2.37 (155)
2014	11.37 (4)	0 (0)	0 (0)	2.32 (152)
2015	5.69 (2)	5.80 (3)	0 (0)	2.21 (145)
2016	11.37 (4)	1.93 (1)	0 (0)	2.14 (140)

Data Source: MDPH Registry of Vital Records and Statistics

Percent of Survey Respondents in the Past 12 Months Who Were Harassed or Bullied Online or Through the Phone
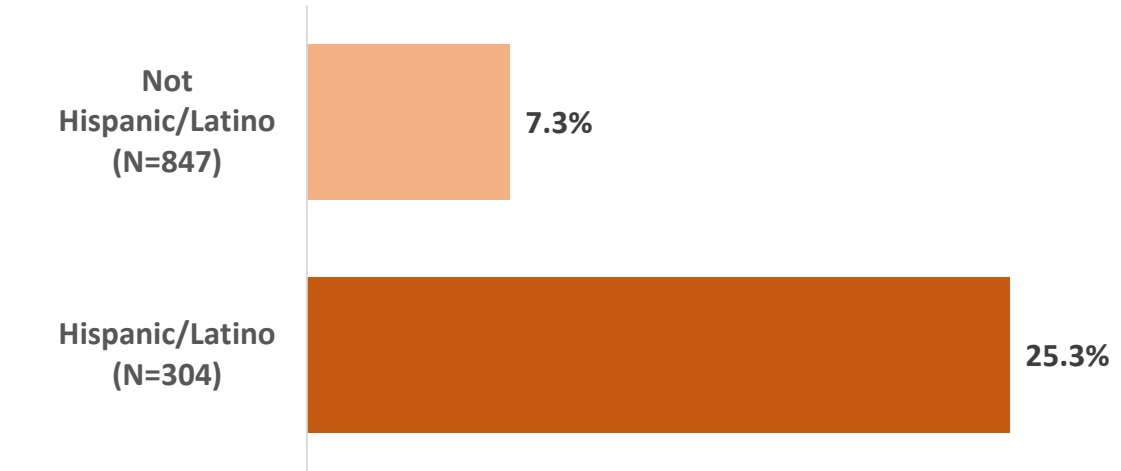

Combined	Chelsea	Revere	Winthrop
11%	8%	10%	14%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

VIOLENCE AND TRAUMA

Percent of Survey Respondents in the Past 12 Months Who Were Treated Badly or Unfairly Because of Their….

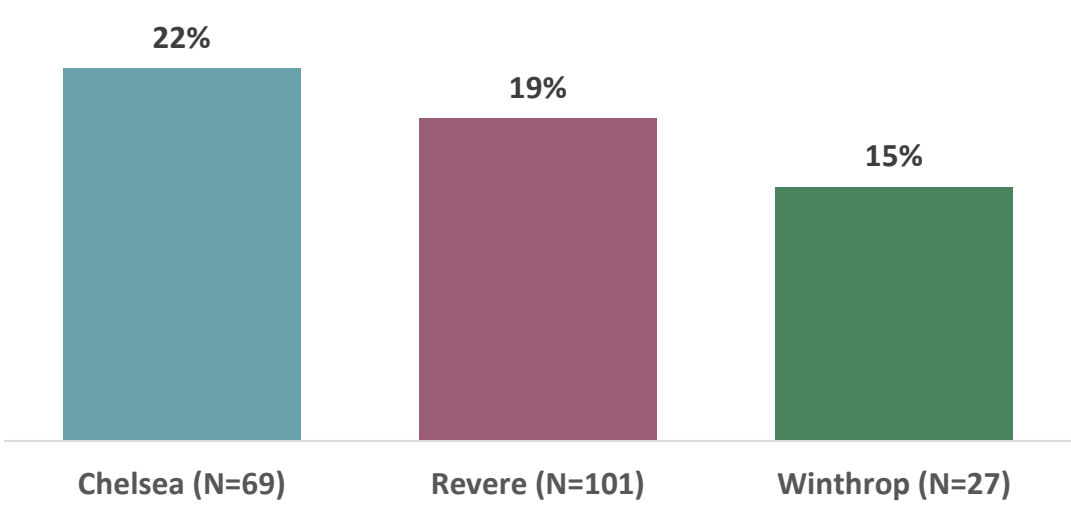|	Combined	Chelsea	Revere	Winthrop
Race or ethnicity	12%	17%	15%	5%
Gender or sexuality	11%	13%	9%	11%
Religion	3%	3%	4%	3%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Survey Respondents in the Past 12 Months Who Were Treated Badly or Unfairly Because of Their Race or Ethnicity

Not Hispanic/Latino (N=847) — 7.3%
Hispanic/Latino (N=304) — 25.3%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

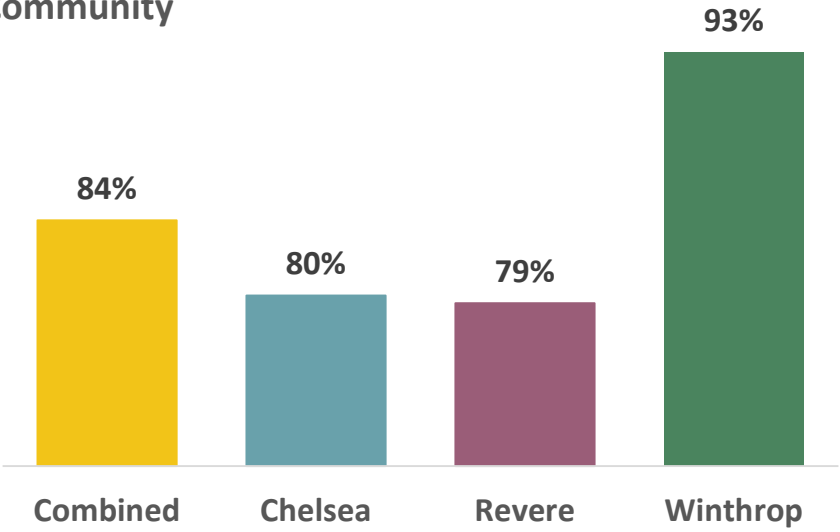## Percent of Foreign-born Survey Respondents who Have been Treated Badly or Unfairly Because of Their Race or Ethnicity

Chelsea (N=69) — 22%
Revere (N=101) — 19%
Winthrop (N=27) — 15%

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the total N for the foreign-born population in each community
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Survey Respondents who Feel Safe in Their Community

Combined — 84%
Chelsea — 80%
Revere — 79%
Winthrop — 93%

Data Source: North Suffolk Community Health Needs Assessment Community Survey

There were mixed perceptions of safety in **Chelsea** and **Revere**. A few focus group participants mentioned that there are areas in Chelsea and Revere that many people perceive as unsafe, but stated that they do in fact feel safe; a couple of elder focus group participants stated that Chelsea feels a lot safer now than it did before. However, one young focus group participant, a **Chelsea resident**, mentioned that her car had been broken into three times, causing her to feel unsafe in her neighborhood. However, in another resident focus group in Revere, participants stated they feel very safe where they live.

When focus group participants were asked if they feel safe in their community, one participant said no because of racism, community violence such as shootings, and bad traffic. A few Spanish speaking **focus group participants** in **Revere** mentioned they felt safe while walking down the street and on the bus. Participants also said they want the community to be safer in the future, especially regarding immigrants.

Percent of Foreign-born Survey Respondents who Feel Safe in their Community

Chelsea (N=67) — 88%
Revere (N=101) — 90%
Winthrop (N=27) — 96%

Note: Breaking down foreign-born status by community makes a smaller sample size for each community. It is important to note the total N for the foreign-born population in each community
Foreign-born is those that answered "How long have you live in the United States?"
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Percent of Survey Respondents who Feel Safe in Their Community

Not Hispanic/Latino (N=848) — 84.9% (15.1%)
Hispanic/Latino (N=299) — 81.9% (18.1%)
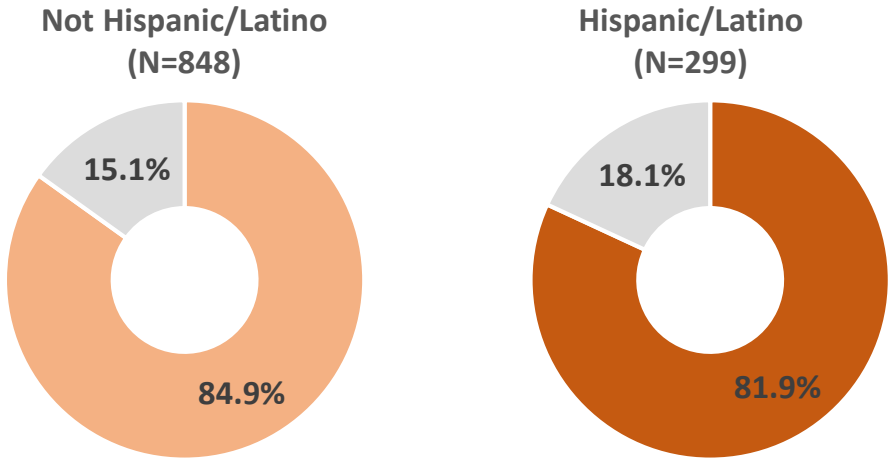
Data Source: North Suffolk Community Health Needs Assessment Community Survey

Appendix E: Resident Reports and Community 1-pagers

North Suffolk Integrated Community Health Needs Assessment
Chelsea | Revere | Winthrop

## What is a Community Health Needs Assessment (CHNA) & why do we need one?

A CHNA is an organized process led by community partners from healthcare, community-based organizations, social services, residents, and city leaders. These partners work together to identify the top strengths, challenges, and public health needs of a community.

The information gathered during the CHNA is used to create an action plan, called a Community Health Improvement Plan (CHIP). The CHIP explains how community partners and residents can work together to improve the health and well-being for *everyone*.

The community partners that formed the North Suffolk Integrated Community Health Needs Assessment (iCHNA) collected and reviewed information from residents, like you, and experts living and working in Chelsea, Revere, and Winthrop.

Factors that affect both individual and a specific group's health and well-being were an important part of the iCHNA process. These factors, called the *social determinants of health*, are things like education, income, and housing. They are the conditions into which we are born and raised, live and work.
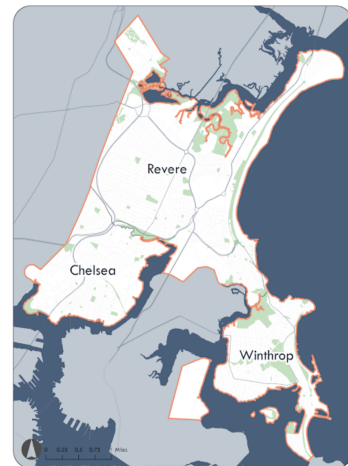
Social Determinants of Health

childhood experiences | education | housing | community | healthcare | employment | income

The iCHNA Process

Public Health Data

22 Focus Groups

29 Key Interviews

1,819 Quality of Life Surveys Collected

549 surveys from Chelsea
673 surveys from Revere
578 surveys from Winthrop

About 75% of survey respondents were women

Who was Involved?

Over 2,000 people helped to collect and analyze the data. It was a group effort completed by our hard-working steering committee, 3 subcommittees, residents, and volunteers!

Thank you to all who participated over the past year!

Steering committee and subcommittee members were from the communities of Chelsea, Revere and Winthrop, community-based organizations, and 6 health care providers.

CASA Community Action for Safe Alternatives | The Neighborhood Developers | East Boston Neighborhood Health Center

MW Melrose Wakefield Healthcare Proudly wellforce | Community Action Program Inter-City Inc. | Healthy Chelsea

CHA Cambridge Health Alliance | MAPC Metropolitan Area Planning Council | Revere C.A.R.E.S. | Chelsea Collaborative | NSMHA North Suffolk Mental Health Association

MGH Massachusetts General Hospital | Beth Israel Lahey Health

North Suffolk Integrated Community Health Needs Assessment
Chelsea | Revere | Winthrop

Themes

After all the information was sorted and reviewed, we found many important themes (shown below).

We chose the top 3 health priorities where we think we can improve in three years by working together.

Built Environment

Chronic Disease

Environmental Concerns

Housing

Employment & Income

Food Insecurity/ Healthy Eating

Education

Social Connectedness

Mental Health

Substance Use Disorders

Vaping & E-cigarettes

Violence & Trauma

Regional Strengths

Community pride -- people are assets in the community.

Cultural Diversity

Resilence

Beaches

Proximity to Boston

"...We are an immigrant city, you get to know about different people and make friends. I belong to a lot of groups."
Chelsea Resident

Top 3 Health Priorities & Why They Were Selected

Housing

The cost, or affordability, and quality of housing affects where you are able to live, your finances, physical and mental health and quality of life.

More residents are becoming 'cost burdened,' meaning they spend more than 30-50% of their monthly income on housing because of regionallly high housing costs.

% of All Cost Burdened Households
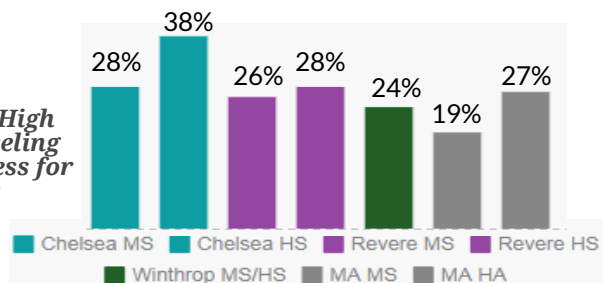Chelsea 47% | Revere 51% | Winthrop 47% | MA 37%
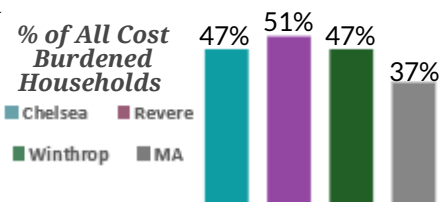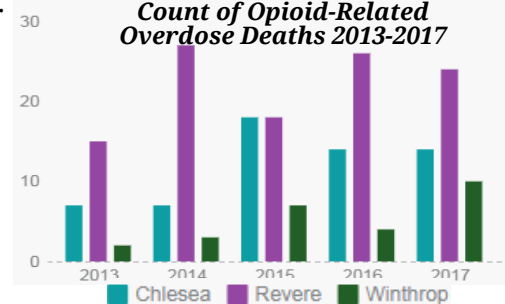
Behavioral Health

Mental health, for youth and adults, has been a top health concern for residents for many years. Mental health is not always seen as an important part of overall health in some cultures. This makes it harder for those who need support to get help.

Many people with mental health issues also live with substance abuse disorder (SUD). For this reason, we included SUDs in the Behavioral Health category.

% Middle & High Schoolers Feeling Sad or Hopeless for 2 weeks
Chelsea MS 28% | Chelsea HS 38% | Revere MS 26% | Revere HS 28% | Winthrop MS/HS 24% | MA MS 19% | MA HA 27%

Count of Opioid-Related Overdose Deaths 2013-2017
Chlesea | Revere | Winthrop
2013, 2014, 2015, 2016, 2017

Economic Mobility & Stability

Your job, income, and how much money you can save are three factors that shape your quality of life and health. In the North Suffolk region, many struggle just to make ends meet.

Compared to Massachusetts, residents in Chelsea, Revere and Winthrop have a lower median household income.

Median Household Income
Chelsea $49,614 | Revere $51,482 | Winthrop $62,997 | MA $70,954
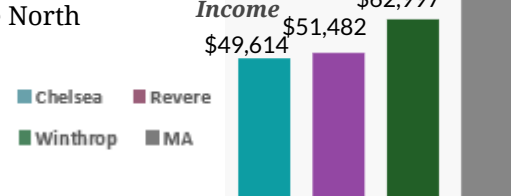
Next Steps & How to Stay Involved

Now, we are working with experts from the North Suffolk region to create the Community Health Improvement Plan (CHIP). This plan will be our a 3-year road map to work on the concerns raised above and more.

Stay involved in our progress! Continue to check our website **Northsuffolkassessment.org** for updates. Or contact Danelle Marable, dmarable@partners.org at MGH Center for Community Health Improvement or Jeff Stone, jstone@revere.org at North Suffolk Public Health Collaborative.

For more information, go to our website: Northsuffolkassessment.org

2019 Community Health Needs Assessment Results
Chelsea

We asked community members in Chelsea, Revere and Winthrop about the quality of life in their communities. We wanted to know their thoughts about …

- Community's strengths
- Health concerns
- Changes noticed over time

Below are the key findings. Thank you to **_everyone_** that took the Quality of Life survey and joined a focus group!

1,819
Surveys Completed in Chelsea, Revere & Winthrop

549
Surveys Completed in Chelsea

In Chelsea, Revere, and Winthrop:

22
Focus groups

29
Key Interviews
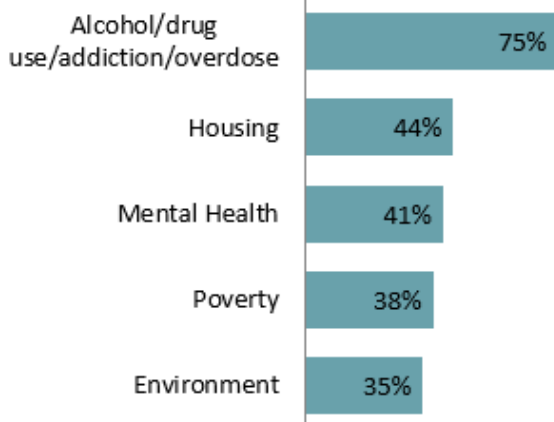
Chelsea's Community Strengths

- Community pride
- Diversity
- People are valued

Top 5 Health Concerns in Chelsea

Concern	%
Alcohol/drug use/addiction/overdose	75%
Housing	44%
Mental Health	41%
Poverty	38%
Environment	35%

Top 10 Health Concerns
reported by Chelsea, Revere & Winthrop community members

Concern	%
Alcohol/drug use/addiction/overdose	74%
Environment	47%
Mental Health	45%
Housing	36%
Aging problems	26%
Poverty	23%
Cancer	22%
Vaping/e-cigs	19%
Violence	19%
Poor diet/inactivity	19%

Next Steps

Top 3 health issues we will work on over the next 3 years:

1 Health & Wellness of Youth & Families

2 Housing

3 Economic Mobility & Stablity

Want to get Involved?

For more information, go to our website:

www.northsuffolkassessment.org

Contact
Danelle Marable: dmarable@partners.org

Jeff Stone: jstone@revere.org

August 2019
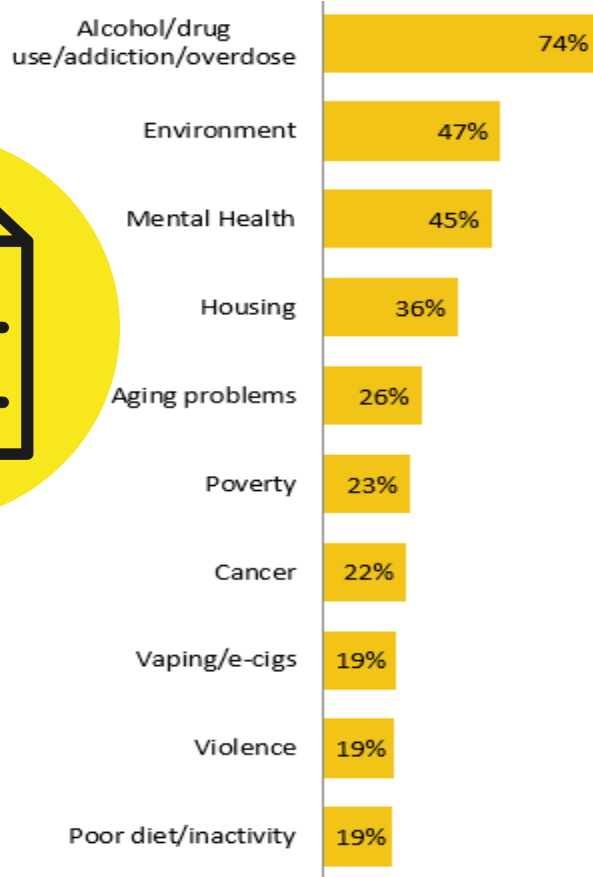
2019 Community Health Needs Assessment Results

Revere

We asked community members in Chelsea, Revere and Winthrop about the quality of life in their communities. We wanted to know their thoughts about ...

- Community strengths
- Health concerns
- Changes noticed over time

Below are the key findings. Thank you to _**everyone**_ that took the Quality of Life survey and joined a focus group!

✔ 1,819
Surveys Completed in Chelsea, Revere & Winthrop

✔ 673
Surveys Completed in Revere

In Chelsea, Revere, and Winthrop:
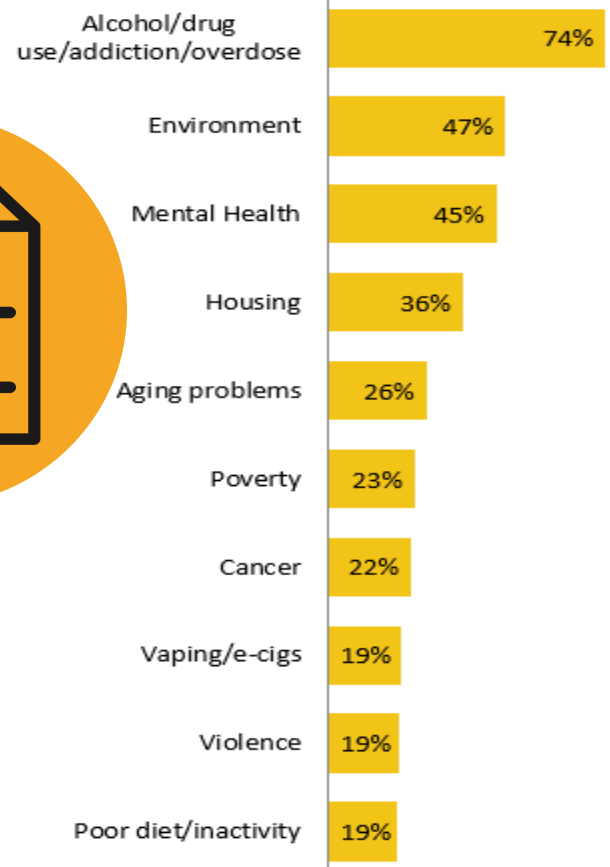
22 Focus groups
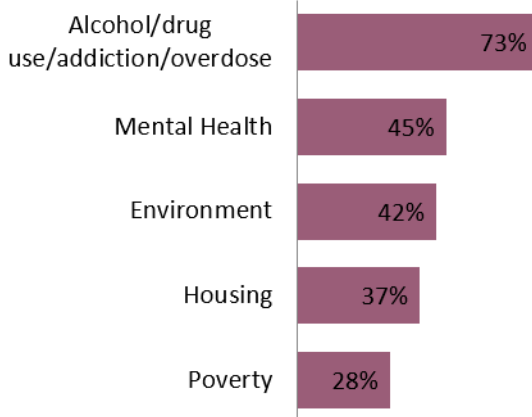
29 Key Interviews

Revere's Community Strengths

- Beautiful beaches
- Resilience
- Proximity to Boston

Top 10 Health Concerns
reported by Chelsea, Revere & Winthrop community members

Concern	%
Alcohol/drug use/addiction/overdose	74%
Environment	47%
Mental Health	45%
Housing	36%
Aging problems	26%
Poverty	23%
Cancer	22%
Vaping/e-cigs	19%
Violence	19%
Poor diet/inactivity	19%

Top 5 Health Concerns in Revere

Concern	%
Alcohol/drug use/addiction/overdose	73%
Mental Health	45%
Environment	42%
Housing	37%
Poverty	28%

Next Steps

Top 3 health issues we will work on over the next 3 years:

1 Health & Wellness of Youth & Families

2 Housing

3 Economic Mobility & Stablity

Want to get Involved?

For more information, go to our website:

www.northsuffolkassessment.org

Contact
Danelle Marable: dmarable@partners.org

Jeff Stone: jstone@revere.org

August 2019

2019 Community Health Needs Assessment Results

Winthrop

We asked community members in Chelsea, Revere and Winthrop about the quality of life in their communities. We wanted to know their thoughts about …

- Community strengths
- Health concerns
- Changes noticed over time

Below are the key findings. Thank you to _everyone_ that took the Quality of Life survey and joined a focus group!

☑ **1,819**
Surveys Completed in Chelsea, Revere & Winthrop

☑ **578**
Surveys Completed in Winthrop

In Chelsea, Revere, and Winthrop:

22
Focus groups

29
Key Interviews
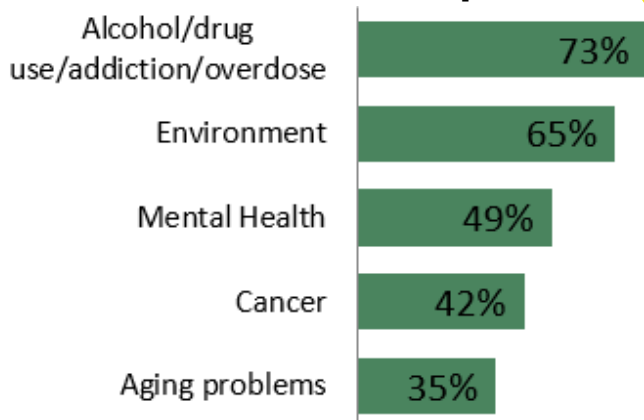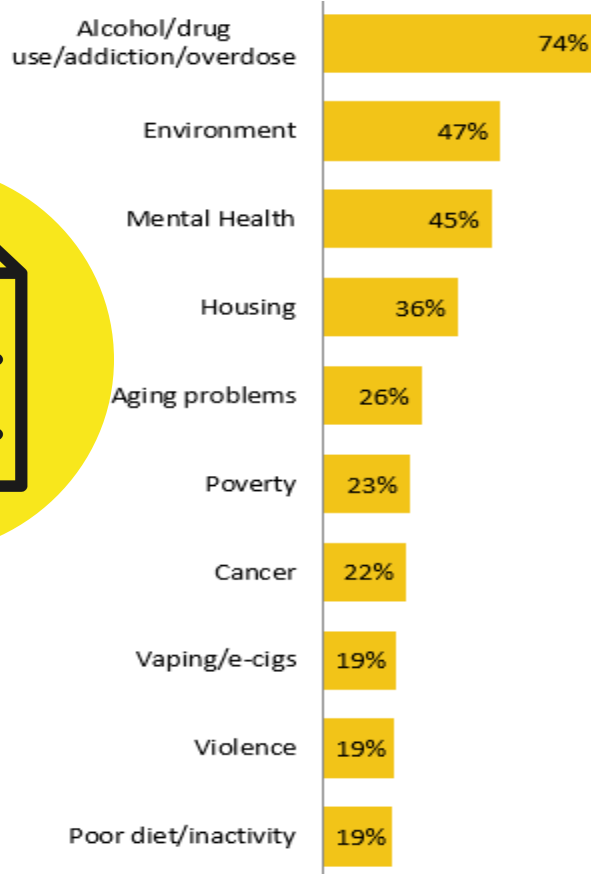
Winthrop's Community Strengths

- Multi-generational community, centered on family
- Beautiful beaches bring people together

Top 10 Health Concerns
reported by Chelsea, Revere & Winthrop community members

Health Concern	Percent
Alcohol/drug use/addiction/overdose	74%
Environment	47%
Mental Health	45%
Housing	36%
Aging problems	26%
Poverty	23%
Cancer	22%
Vaping/e-cigs	19%
Violence	19%
Poor diet/inactivity	19%

Top 5 Health Concerns in Winthrop

Health Concern	Percent
Alcohol/drug use/addiction/overdose	73%
Environment	65%
Mental Health	49%
Cancer	42%
Aging problems	35%

Next Steps

Top 4 health issues we will work on over the next 3 years:

1 Health & Wellness of Youth & Families

2 Environmental Conditions

3 Economic Mobility & Stability

4 Housing

Want to get Involved?

For more information, go to our website:

www.northsuffolkassessment.org

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Segment Inclusiveness / Social Determinants of Health

Segment Inclusiveness

- Immigrants (documented and undocumented) and racially diverse residents
- Refugees from traumatic circumstances
- Non-English speakers
- Cultural communities (Central and South America, Asia, Africa, Middle East, etc.)
- Veterans
- Elderly
- Youth
- Pregnant women and new mothers
- Domestic violence survivors
- Violent crime survivors
- Sex workers
- Victims of human trafficking
- Mentally Ill
- Disabled (wheelchair users, etc.)
- Home-bound residents
- People with Substance Use Disorder (alcohol, opioids, other drugs; either using or in recovery)
  Grandparents acting as parents in families affected by SUD
- LGBTQ (lesbian, gay, bisexual, transgender)
- Formerly incarcerated persons
- Families in poverty
- Homeless persons
- Uninsured or under-insured people
- Small business owners
- Faith communities
- Home & family caregivers, taking care of people with dementia, mental illness or other disease
- People who are hungry; food pantries

- Other

Social Determinants of Health

(partial list of factors that can affect health)

- Income and income distribution
- Education
- Unemployment and job security
- Employment and working conditions
- Early childhood development
- Food insecurity
- Housing
- Social exclusion/inclusion
- Social safety network
- Access to health services
- Gender
- Sexual identity and expression
- Race
- Disability
- Personal & community safety or violence
- Stress
- Addiction
- Transportation
- Environmental quality