



BRIGHAM AND WOMEN'S HOSPITAL



Community Health Needs Assessment and Implementation Plan

2016

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We are particularly grateful to the residents of the five neighborhoods who shared their insight and guidance during this process. We learned a great deal from you.

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All are welcome to use our findings to inform future practice and create healthier, equitable communities. We request that you please use the following citation: Brigham and Women's Hospital, Center for Community Health and Health Equity (2016). *Community Health Needs Assessment and Implementation Plan 2016*. Boston, MA.

EXECUTIVE SUMMARY

In 2016, Brigham and Women's Hospital (BWH) embarked on a Community Health Needs Assessment (CHNA) and implementation planning process to inform community-based efforts as well as to adhere to requirements set by the *Patient Protection and Affordable Care Act (the Act)*. This work builds upon the foundation of past assessment work and current investments in advancing health in the BWH priority neighborhoods (Dorchester, Jamaica Plain, Mattapan, Mission Hill and Roxbury). These neighborhoods are cited in the hospital's community benefit mission as a focus for effort with residents who experience disproportionately high rates of poverty, unemployment and chronic disease.

BWH COMMUNITY HEALTH COMMITMENT

BWH has a long-standing commitment to promoting health equity and reducing health disparities for patients, families, employees, and vulnerable members of the community. As part of this commitment, the BWH Center for Community Health and Health Equity (CCHHE) was established in 1991 to serve as the coordinating department for community health programs and to act as a liaison for community-based organizations and the hospital. The Center works in partnership with other hospital departments and with community health centers, schools, and community-based organizations to identify barriers to health and related services to address the social factors contributing to health and well-being. The Center's programs have evolved over the past two decades and include efforts aimed at eliminating inequities in infant mortality, and cancer; promoting youth development and employment through education and career opportunities; curbing the cycle of violence in our communities and improving knowledge of healthy habits and behaviors.

ASSESSMENT METHODOLOGY

The *Act* requires hospitals to solicit input from broad interests within the community and those with knowledge and expertise in public health for their assessments. Applying a social determinants of health framework that looks at the social and economic factors that impact a community's health, BWH's community assessment used a mixed methods approach. This included an analysis of key quantitative data and the collection of primary data through key informant interviews, structured community discussion groups, as well as an online community engagement process that engaged a broad range of community residents. The community discussion groups were conducted collaboratively with several other Boston hospitals participating in the Conference of Boston Teaching Hospitals (CoBTH).

KEY FINDINGS

- Residents of color experience greater poverty, unemployment, lower educational attainment and greater economic vulnerability. Unemployment rates were highest in Mattapan (18.2%) and Dorchester (17.7% in North Dorchester and 15.8% in South Dorchester) compared to Boston overall (10.3%).

- Hispanic/Latino households in Boston had the lowest median household income (\$27,461) and White households had the highest (\$70,644).
- Interpersonal violence and trauma was cited as a major concern among community residents and stakeholders, and in 2012, the homicide rate for Black residents was 19.9 per 100,000 residents in Boston, which was significantly higher than the rate for White residents (2.0).
- Behavioral health concerns emerged as key issues with a specific focus on the availability, cost and cultural accessibility of mental health and substance abuse services.
- Many Boston public high school students (30.1%) and adults (12.2%) reported persistent sadness (feeling sad, blue or depressed 15 or more of the past 30 days). Hispanic/Latino adults were more likely to self-report experiencing persistent sadness compared to White adults.
- Significant health inequities persist across all health conditions examined, including chronic disease, reproductive and sexual health as well as obesity.
- Black and Hispanic/Latino residents were more likely to report having diabetes (14.1% and 12.6% respectively) and hypertension (36.7% and 26.2% respectively) compared to White residents (5.1% and 18.6% respectively).
- Although the rate of uninsured residents in Massachusetts is at historically low levels, models of care that are responsive to the needs of underserved communities are an important area for development.
- Low income residents face multiple access issues, including transportation barriers and the potential negative impact of policy changes in 2016/17 to the Health Safety Net and MassHealth plan enrollment.
- Racial equity was identified as one of the key community health issues in BWH's 2015 online, community engagement process *What Matters for Health*. Nearly three-quarters (73%) of respondents to the question on equity indicated that they do not believe the City of Boston is a racially equitable place to live.
- Community residents and other stakeholders underscored the importance of working in partnership with communities and prioritizing sustainable investment that leverages existing community assets and strengths.

Based on these findings and considering the available resources, the interests of BWH's priority communities, and opportunities for collaboration, BWH identified the following priority areas for its implementation plan:

1. Social determinants of health (employment, education, economic stability, and transportation)
2. Interpersonal violence and trauma
3. Behavioral health
4. Health equity
5. Healthcare access

BACKGROUND

ABOUT BRIGHAM AND WOMEN'S HOSPITAL

Brigham and Women's Hospital (BWH) is a not-for-profit 793-bed academic medical center located in historic Boston, Massachusetts. A national leader in patient care, research, innovation, education and community health, BWH is a teaching affiliate of Harvard Medical School with specialty care for cancer, heart disease, orthopedic conditions and women's health, including the largest obstetrical program in Massachusetts. Along with its modern inpatient facilities, BWH offers extensive outpatient services and clinics, neighborhood primary care through its two licensed community health centers and primary care sites and state-of-the-art diagnostic and treatment technologies and research laboratories. BWH has more than 4.2 million annual patient visits and nearly 46,000 inpatient stays. Further, as the largest birthing center in Massachusetts, and a regional leader in high-risk obstetrics and newborn care, approximately 6,500 babies are born each year at BWH. Expert newborn care for nearly 3,000 premature and seriously ill babies and their families are provided each year.

To meet the needs of its patient population, BWH and Brigham and Women's Physicians Organization (BWPO) employs approximately 16,000 people. The hospital is a top recipient of research grants from the National Institutes of Health and has ranked on *US News and World Report's* Honor Roll of America's Best Hospitals for 23 consecutive years and in 2015, BWH ranked 6th in the nation.

BWH COMMITMENT TO THE COMMUNITY

BWH has a long-standing commitment to promoting health equity and reducing health disparities for patients, families, employees and vulnerable members of the community. BWH is particularly committed to working with residents of Boston's diverse neighborhoods to break through the barriers to health – economic, social, educational and cultural – so often encountered by the individuals and families in our community. As part of that commitment, the Center for Community Health and Health Equity (CCHHE) was established in 1991 to serve as the coordinating department for community health programs and acts as a liaison for community-based organizations and the hospital. The CCHHE develops, implements, manages and evaluates initiatives that aim to address and minimize inequities in health status. To achieve these goals, the Center works in partnership with other hospital departments and with community health centers, schools and community-based organizations to identify barriers to healthcare and related services and to address the social factors contributing to health and well being.

The Center's programs have evolved over the past two decades and include efforts aimed at eliminating inequities in infant mortality, and cancer; promoting youth development and employment through education and career opportunities; curbing the cycle of violence in our communities; and improving knowledge of healthy habits and behaviors.

Community Health efforts in FY15 included:

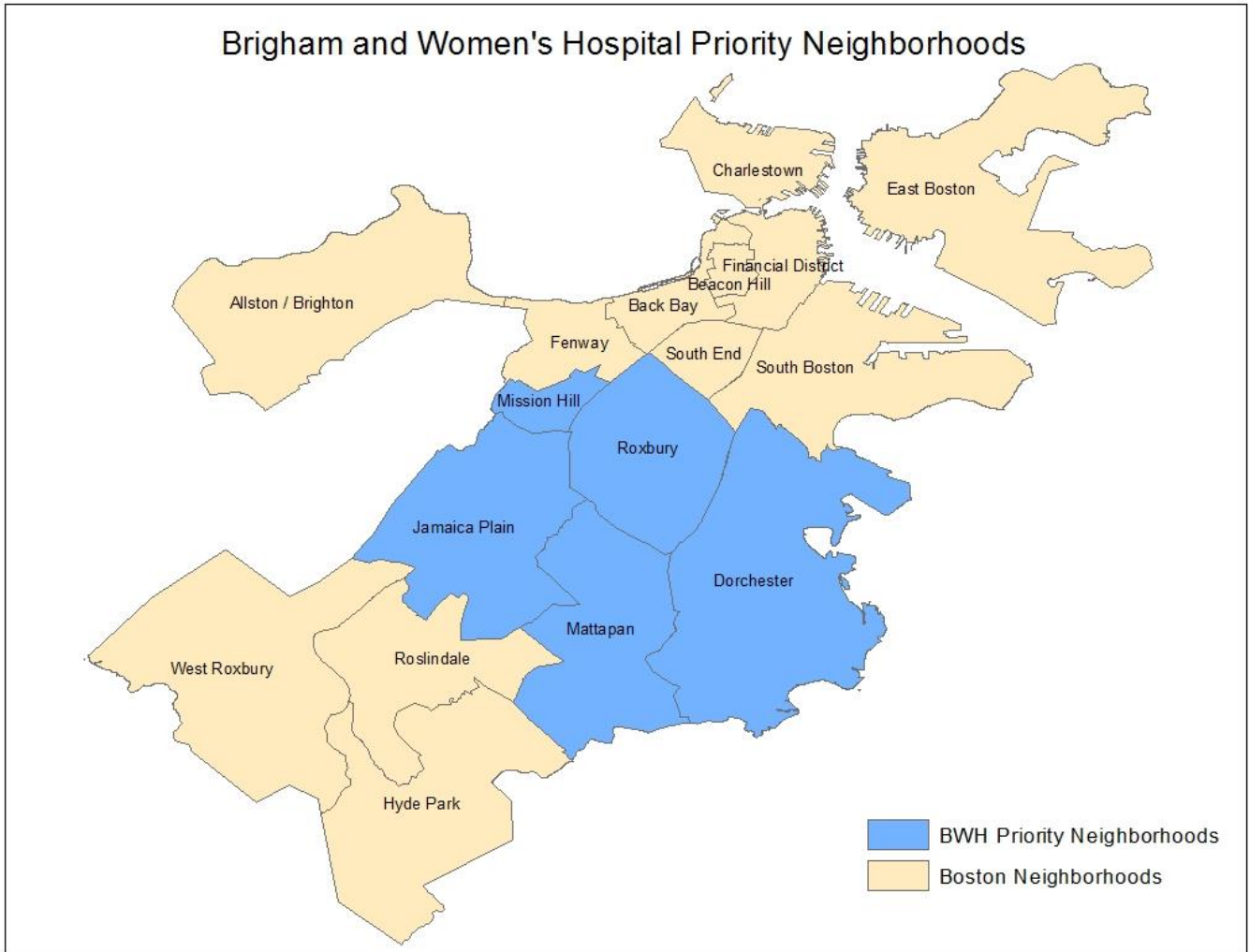
- The Passageway domestic violence program provided 8,322 service contacts to or on behalf of 1,295 clients of Brigham and Women's HealthCare.
- 100% of Student Success Jobs Program participants entered college after completion of the high school program.
- 484 patients were referred to a patient navigator for colorectal cancer screening and colonoscopy; completion rates of screening among health center patients increased from 49% at program inception to 70% in 2015.
- 101 low income women with breast cancer were provided financial assistance to cover expenses associated with their diagnosis that were not covered by insurance.
- Nearly 22,000 patients received care at our two BWH licensed health centers in Jamaica Plain (Brookside Community Health Center and Southern Jamaica Plain Health Center).
- 273 women received pregnancy and parenting services from health center based case managers through the Stronger Generations case management program.
- Over 500 young people received educational support and mentoring from nearly 300 Brigham and Women's employees.

BWH'S PRIORITY COMMUNITIES

This assessment informs BWH's community activities and programs that address the health and well-being of residents of the hospital's priority neighborhoods of **Dorchester, Jamaica Plain, Mattapan, Mission Hill and Roxbury**. The BWH community benefit mission specifically cites these neighborhoods as a focus for effort with residents who experience disproportionately high rates of poverty, unemployment and chronic disease.

As discussed in greater detail in subsequent sections of this report, there are clear variations in the racial and ethnic diversity of Boston's neighborhoods. BWH's priority neighborhoods are home to many of Boston's communities of color. Mattapan, North and South Dorchester, and Roxbury are predominately Black communities (44.0% to 80.4%). Approximately one-quarter of the populations of Roxbury, Jamaica Plain, and North Dorchester are Hispanic/Latino (22.6% to 27.0%).

Figure 1. Map of Brigham and Women's Hospital Priority Neighborhoods, 2016



THE COMMUNITY HEALTH NEEDS ASSESSMENT PROCESS

The goals of the 2016 Community Health Needs Assessment (CHNA) were to:

1. Identify the health and well-being needs and assets of BWH's target populations in the neighborhoods of Dorchester, Jamaica Plain, Mattapan, Mission Hill and Roxbury
2. Engage community members and other key stakeholders in the process
3. Determine the hospital's priorities for the next three years; and
4. Develop an implementation strategy to address the identified needs

Throughout the course of this CHNA, we worked collaboratively on community engagement and data collection with several other Boston hospitals participating in the Conference of Boston Teaching Hospitals (CoBTH). This assessment and implementation plan build upon the foundation from our last CHNA and our current investments in advancing the health of BWH's priority neighborhoods.

PAST COMMUNITY HEALTH NEEDS ASSESSMENTS

A comprehensive CHNA was conducted in 2011/12 and in 2013, supplemental CHNA work was conducted to assess any changes and delve further into the themes that had been identified in the earlier assessment work. Our 2013 assessment work engaged over 150 residents and stakeholders in key informant interviews or one of the 13 focus groups conducted at community sites throughout BWH priority neighborhoods.

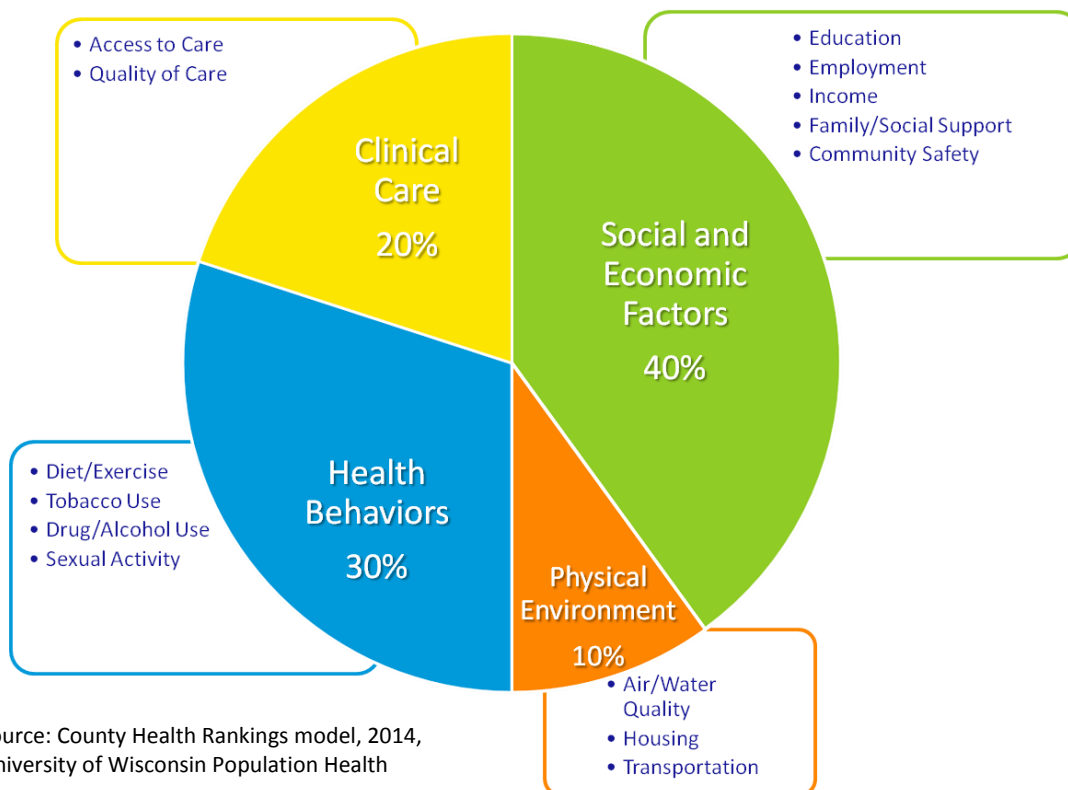
A report on progress on our previous CHNA can be found on the CCHHE's [website](#).

METHODOLOGY

Overall Approach: Social Determinants of Health

The CHNA defines health in the broadest sense and recognizes that factors at multiple levels impact a community's health – from lifestyle behaviors (e.g. diet and exercise), to clinical care (e.g. access to medical services), to social and economic factors (e.g. employment opportunities), to the physical environment (e.g. open space) (Figure 2). This CHNA examined data at all these levels, but considerable focus was given to social determinants of health because of its significant influence on the health and long-term health outcomes of communities. As illustrated in Figure 2 on the following page, social and economic factors have the greatest impact on the health of individuals, and this understanding informed the data we sought and analyzed in the course of the assessment.

Figure 2: Social Determinants of Health Model



We understand that where we are born, grow, live, work, and age—from our environment in the womb to our community environment later in life—and the interconnections among these factors are critical to our health. While genes and lifestyle behaviors affect health, it is most profoundly influenced by more upstream factors such as quality of education, economic stability, employment status, quality of housing stock and issues of racial inequity. These factors determine the context in which people live and shape the opportunities that are available to them, which in turn impact their health and the health of their families.

We also approached this assessment with the knowledge that communities of color throughout the nation experience poorer health outcomes, which is very true in Boston as well. There is growing interest and body of research on the health impact of inequality and racism, and this has been a prominent feature of the work of the Boston Public Health Commission and other leading public health organizations in recent years. Racism, a system of advantage based on race, both intersects and compounds the negative impacts of social and economic challenges faced by community members. While people often think of the interpersonal manifestations of racism, the most profound impact of racism is experienced through the systems and institutions in our society, and over time it results in health enhancing opportunities being available to some groups, and not available to others. This is referred to as institutional and structural

racism. Disinvestment in community infrastructure, unequal educational resources and the legacy of redlining in the housing market are illustrations of the policies and structures that reproduce systemic forms of racism. Understanding the health impacts of racism, how it operates in societal structures and within organizations and taking steps towards dismantling these inequities is a crucial area of interest for those seeking to promote health equity. This understanding informs and shapes our community health work at BWH.

Data Collection Methods

A mixed methods approach was used for the 2016 CHNA. We included the analysis of key demographic, social, economic and health and well-being data. The Boston Public Health Commission (BPHC) was the primary source of our neighborhood level data. BWH utilization and emergency department data were also analyzed. Primary data were collected through interviews and structured community discussion groups. BWH embarked on an innovative on-line community engagement process entitled *What Matters for Health* that obtained extensive community input from 488 participants. Key reports that analyzed the health and social and economic status of Boston communities also provided valuable data to inform this CHNA. Through these multiple methods, we worked to identify the pressing health and wellness issues facing BWH's priority communities.

BWH collaborated with members of the Conference of Boston Teaching Hospitals (CoBTH) to plan, implement and analyze findings from community meetings in key neighborhoods identified by the group. A core set of questions was developed by participating hospitals to guide meeting discussions (Appendix A). The total number of participants at each meeting ranged from 9 to 20 residents and the meetings averaged 90 minutes in duration. Interpreters were provided at meetings when requested by our community partners. Furthermore, the input of the community advisory boards of Southern Jamaica Plain Health Center (SJPHC) and Brookside Community Health Center (BWH's two licensed health centers), both which are located in Jamaica Plain, was solicited for this CHNA. A forum was conducted with high school students from the CCHHE's Student Success Job Program (SSJP) to learn more about young peoples' perspectives on community health needs.

Key informant interviews were conducted with 6 internal and 9 external stakeholders (Appendix B). These stakeholders were selected based on their strategic areas of expertise and connection to BWH's priority communities. A series of interview questions was created to guide conversations with key informants and to solicit their input and feedback on the health and wellness issues facing BWH's priority communities (Appendices C and D).

Table 1. Summary of Data Sources Informing 2016 BWH CHNA

Data Type	Data Source	Notes
Quantitative Data	U.S. Census & American Community Survey	Obtained from and analyzed by Boston Public Health Commission (BPHC)
	Boston Behavioral Risk Factor Surveillance Survey (BBRFSS)	Obtained from and analyzed by BPHC
	Youth Risk Behavior Survey (YRBS)	Obtained from and analyzed by BPHC
	Vital Statistics	Obtained from and analyzed by BPHC
	BWH Utilization Data	Obtained from EPSi (an internal Partners HealthCare service utilization and billing database)
	BWH Emergency Department Data	Obtained from Partner's HealthCare, Massachusetts Data Warehouse Database
Qualitative Data	Community meetings with residents of priority communities	5 conducted in the following neighborhoods: Jamaica Plain, Roxbury, Bowdoin Geneva (Dorchester), Mattapan, and Codman Square (Dorchester); 79 residents attended in total
	Meetings with community advisory boards at Southern Jamaica Plain Health Center and Brookside Health Center	2 conducted
	Forum with high school students involved with the Student Success Job Program	1 conducted
	Interviews with internal stakeholders	6 conducted
	Interviews with external stakeholders	9 conducted; interviews conducted by sub-contractor, the Institute for Community Health
Reports	BPHC's <i>Health of Boston</i> report	Published 2014-2015
	Federal Reserve Bank of Boston's <i>The Color of Wealth in Boston</i> report	Published 2015
	<i>What Matters for Health: A Community Health Planning Report</i>	Published 2015 and available on the CCHHE website, this report details the analysis of over 8,000 comments from 488 participants in an innovative on-line game that BWH undertook to explore perceptions and recommendations from community members on personal, neighborhood and citywide health issues.

In addition to the data sources listed above, information from the following sources informed sections of this CHNA:

- Brigham and Women’s Hospital (<http://www.brighamandwomens.org/>) and Partners HealthCare (<http://www.partners.org/>) websites
- The County Health Rankings & Roadmaps, which is a collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute (<http://www.countyhealthrankings.org/>)
- The U.S. Bureau of Labor Statistics (2014-2016) (<http://www.bls.gov/>)
- Fair Public Transportation Report: Community Health Center Directors Roundtable (December 2015)
- The Democracy Collaborative’s *Can Hospitals Heal America’s Communities?*, written by Tyler Norris and Ted Howard (December 2015) (<http://democracycollaborative.org/content/can-hospitals-heal-americas-communities-0>)
- The American Public Health Association’s website and section on “Racism and Health” (<https://www.apha.org/topics-and-issues/health-equity/racism-and-health>)
- The U.S. Department of Health and Human Services’ HealthyPeople 2020 website (<https://www.healthypeople.gov/>)
- The Blue Cross Foundation and the Urban Institute’s *Summary of Health Insurance Coverage and Health Care Access and Affordability in Massachusetts: 2015 Update* (March 2015) (http://bluecrossfoundation.org/sites/default/files/download/publication/MHRS_2015_Summary_FINAL.pdf)
- The Center for Health Information and Analytics (CHIA)’s “Annual Report Premiums Databook” (updated November 2015) (<http://www.chiamass.gov/premiums/>) and “The Performance of the Massachusetts Healthcare System Series – Massachusetts High Deductive Health Plan Membership” (Updated November 2015) (<http://www.chiamass.gov/the-performance-of-the-massachusetts-health-care-system-series/#hdhp>)

Limitations and Considerations

It is also important to note specific methodological considerations as we embarked on our CHNA work, as well as limitations that are characteristic of applied research efforts. Specifically;

- Every effort was made to ensure diverse and broad participation in the community throughout the CHNA data collection and analysis process.
- Community meetings were conducted to obtain more in-depth, meaningful conversations from a wide sampling of community members.
- Key informant interviews were held to ensure that the perspectives of specific internal and external sub-groups were represented.
- There was very limited health and other data specific to the neighborhood of Mission Hill. Available data typically includes Mission Hill within the larger community of Roxbury.

NEEDS ASSESSMENT FINDINGS

This section presents key findings from the BWH's 2016 CHNA, which are organized into the following subsections:

- Community demographics
- Social determinants of health
- Interpersonal violence and trauma
- Behavioral health
- Health equity
- Access to healthcare; and
- Approach to working with communities.

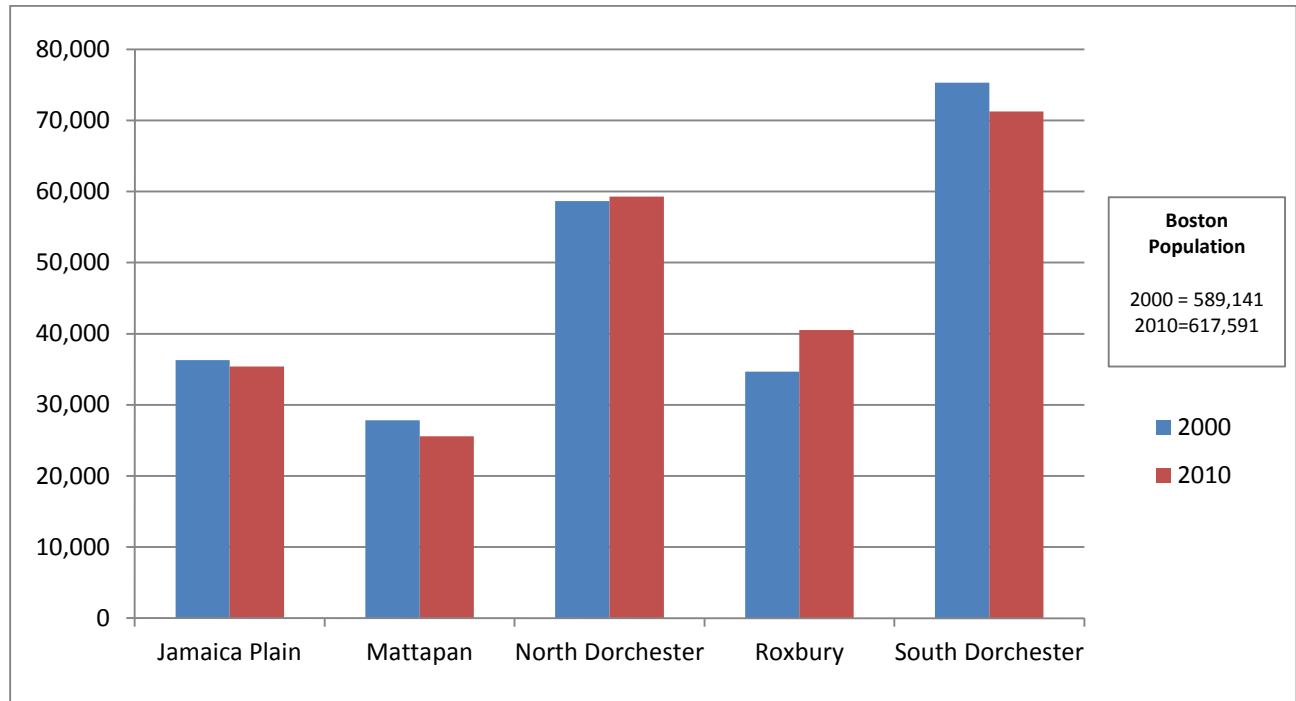
COMMUNITY DEMOGRAPHICS

The health of a community is associated with numerous factors, including what resources and services are available (e.g. safe green space, access and affordability of healthy foods) as well as who lives in the community. The section below provides an overview of the population of Boston and of BWH's priority neighborhoods of Dorchester, Jamaica Plain, Mattapan, Mission Hill and Roxbury. The demographics of a community are important to understanding health outcomes and behaviors of that area. While age, gender, race and ethnicity are important characteristics that impact on an individual's health, the distribution of these characteristics in a community and the social and economic opportunities available (or not readily available) to a group are key to our understanding of what supports a healthy community. Please note, the population, age distribution, and race/ethnicity data included in this section are informed by the 2010 U.S. Census, the most recently available Census data.

Population

In 2010, Boston's total population was estimated to be 617,591 people, a growth of almost 5% since 2000, when the city's population was 589,141. Over the past decade, several Boston neighborhoods have experienced growth rates similar to that of the city overall. Notably, Roxbury, with a 16.9% increase in population, has seen the most substantial growth among BWH's priority neighborhoods. Of the seventeen neighborhoods that comprise the City of Boston, four experienced a decrease in their populations over the past decade—and three of which are BWH's priority neighborhoods (Jamaica Plain [-2.5%], Mattapan [-8.1%], and South Dorchester [-5.4%]). (Figure 3)

Figure 3: Total Population by Priority Neighborhoods, 2000-2010



DATA SOURCE: BPHC's *Health of Boston* Report 2014-2015

Age Distribution

While there have been fluctuations over time, the percent of residents aged 15-24 and 45-64 has generally increased since 1990. Residents aged 25-34 have seen the largest proportional decrease in total population between 1990 and 2010. Table 2 presents the age distribution in Boston by priority neighborhood. In 2010, Jamaica Plain was the neighborhood with the lowest percentage of youth aged 14 years and under (12.8%), while Roxbury had the highest (22.3%). Meanwhile, Mattapan had the highest percentage of adults aged 65-74 years (6.7%), while North Dorchester had the lowest (4.7%).

Table 2: Age distribution by city and priority neighborhoods, 2010

	Boston	Jamaica Plain	Mattapan	North Dorchester	Roxbury	South Dorchester
Under 5 years	5.2%	5.2%	6.9%	5.8%	7.5%	6.8%
5-14 years	8.6%	7.6%	14.6%	9.7%	14.8%	13.3%
15-24 years	22.4%	21.9%	16.6%	20.0%	17.7%	15.4%
25-34 years	20.7%	21.2%	13.1%	20.4%	14.5%	15.2%
35-44 years	12.5%	12.7%	13.4%	13.9%	12.6%	14.8%
45-64 years	20.4%	20.7%	24.6%	21.9%	23.6%	24.2%
65-74 years	5.3%	5.7%	6.7%	4.7%	5.5%	5.9%

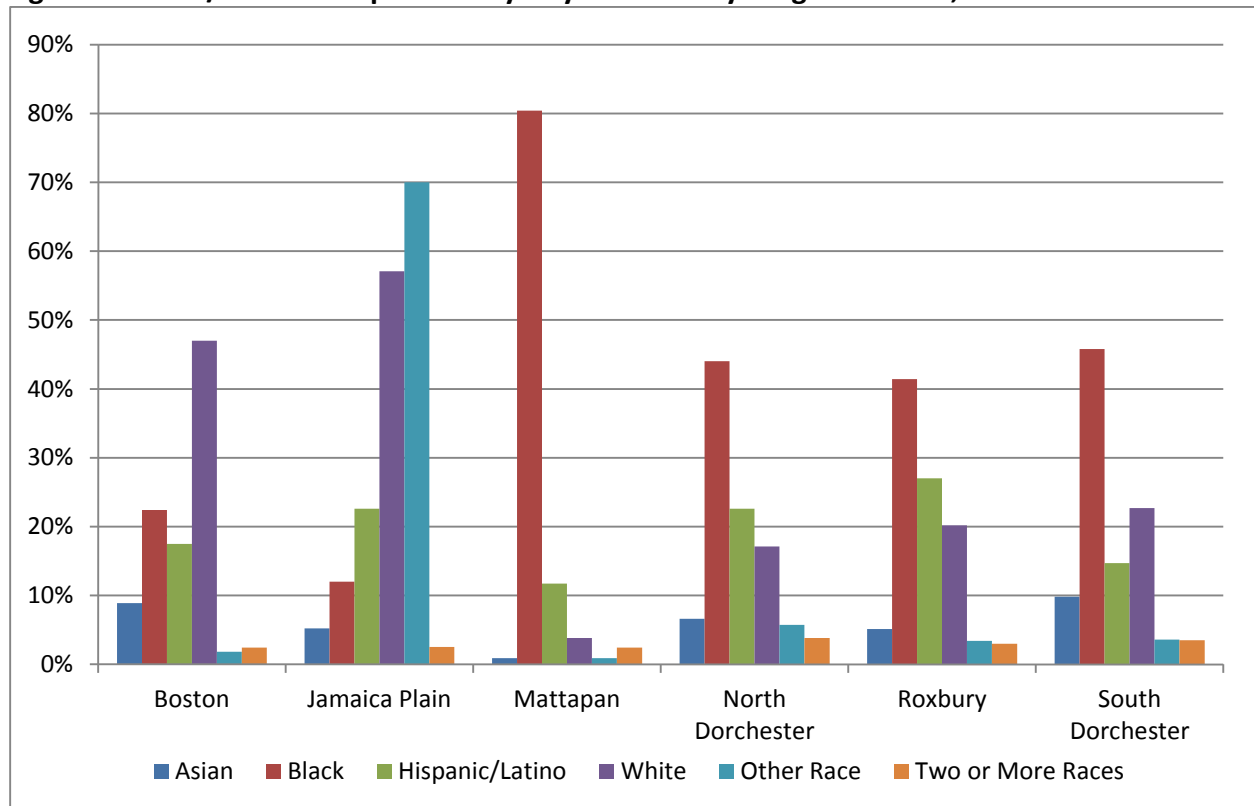
DATA SOURCE: U.S. Department of Commerce, Bureau of the Census, American FactFinder, 2010 Census

Racial and Ethnic Diversity

Quantitative results illustrate that some neighborhoods exhibit greater resident diversity than others. Racial/ethnic diversity is also increasing; a greater proportion of the city identified as non-White than reported in the last several years. Although nearly half of all Boston residents were White (47%) in 2010, there is substantial variation in the racial and ethnic diversity stratified by neighborhood. (Figure 4)

For example, in the North End, South Boston, Back Bay, Charlestown, West Roxbury, Fenway, and Allston/Brighton, at least two-thirds of residents are White (64.7%-91.8%). In contrast, Mattapan, North and South Dorchester, Hyde Park, and Roxbury are predominantly Black communities (41.4%-80.4%). More than half of East Boston residents (52.9%) and about one quarter of Roxbury’s population (27.0%), Roslindale’s population (25.9%), Jamaica Plain’s population (22.6%), and North Dorchester’s population (22.6%) are Hispanic/Latino. In Chinatown, about half of residents are Asian (48.3%). Additionally, while English was the most common language spoke at home in Boston (63.4%), other languages included Spanish or Spanish Creole (15.9%), French Creole (5.1%), Chinese languages (4.2%), and Vietnamese (1.7%).

Figure 4: Racial/Ethnic Composition by City and Priority Neighborhoods, 2010



NOTE: 'Other Race' consists of American Indians/Alaskan Natives and Some Other Races

DATA SOURCE: BPHC's *Health of Boston* Report 2014-2015

BWH Specific Data on Priority Communities

In FY2015, BWH served approximately 281,300 individuals¹; one-quarter of BWH’s patients during this time were residents of the City of Boston (24.7%, n=69,400). Of BWH’s patients who resided in Boston, nearly half (49.0%) were residents of one of BWH’s priority neighborhoods (Table 3). When examining payor information, we see that 37.6% of patients from BWH’s priority neighborhoods were insured by public payors (i.e. Medicaid, Health Safety Net and CommCare/ConnectorCare) and 62.4% were insured by all other payors.² BWH patients from North Dorchester (54.0%), Roxbury (45.9%), Mattapan (43.2%), and South Dorchester (43.1%) were more likely to be insured through public payors compared to BWH patients from Jamaica Plain (27.2%) and patients citywide (16.2%) (Figure 5).

Table 3: BWH Patient Population by City and Priority Neighborhood, FY 2015

Geography	Percentage of BWH Patients From Specified Geographies (Out of Total Patient Population)
City of Boston	24.7% (N=69,353)
BWH Priority Neighborhoods	12.1% (n=33,929)
Jamaica Plain	3.6% (n=10,027)
Mattapan	1.0% (n=2,820)
North Dorchester	2.4% (n=6,803)
Roxbury	2.6% (n=7,368)
South Dorchester	2.5% (n=6,911)
Other Boston Neighborhoods	12.6% (n=35,424)

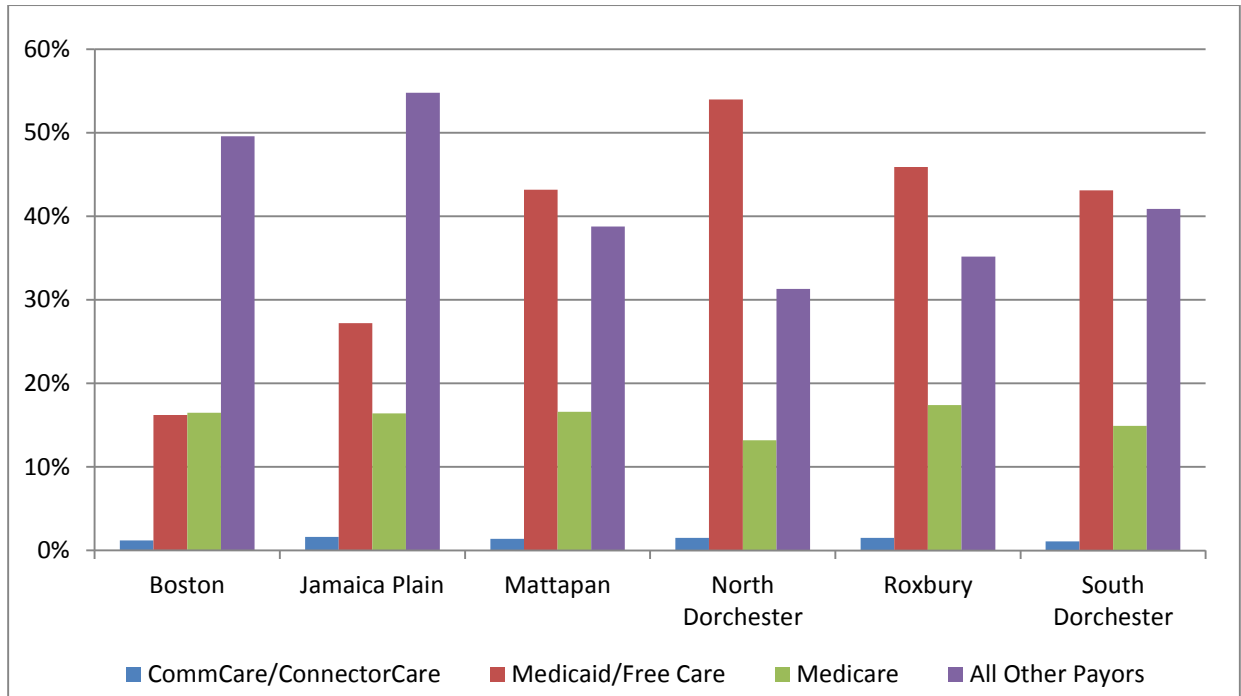
DATA SOURCE: EPSi (an internal Partners HealthCare service utilization and billing database)

NOTE: These data do not include patients served by BWPO

¹ These data do not include patients served by Brigham and Women’s Physicians Organization (BWPO).

² These data do NOT include BWPO data. All other payors includes commercial insurance, self pay, other and unknown.

Figure 5: Payor Information of BWH Patient Population by City and Priority Neighborhood, FY 2015

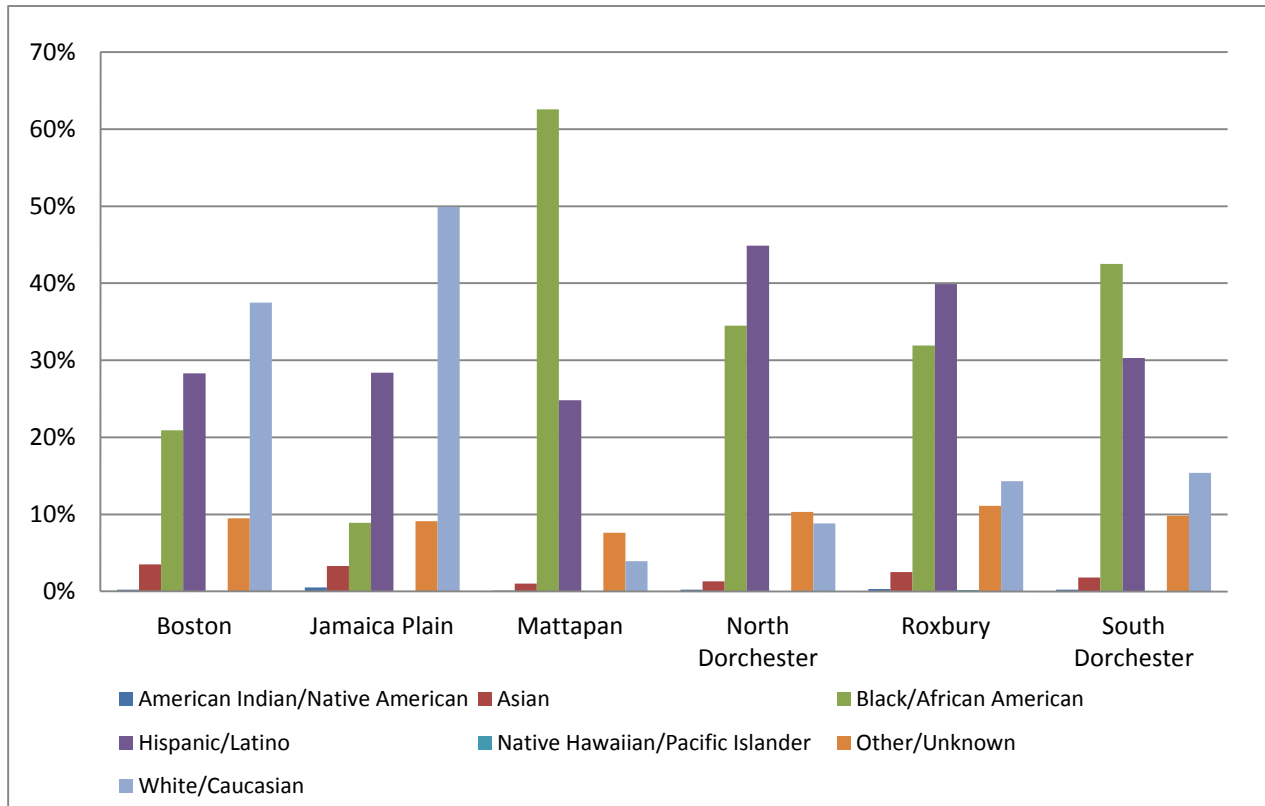


DATA SOURCE: EPSi (an internal Partners HealthCare service utilization and billing database)

NOTE: These data do not include patients served by BWPO

Looking at BWH patient data by race/ethnicity, there is substantial variation in the race/ethnicity of BWH’s patient population across priority neighborhoods. For instance, in FY2015, Mattapan had the largest Black/African American patient population (62.6%) and North Dorchester and Roxbury had the largest Hispanic/Latino patient populations (44.9% and 39.9% respectively). (Figure 6)

Figure 6: Race/Ethnicity of BWH Patient Population by City and Priority Neighborhood, FY 2015



DATA SOURCE: EPSi (an internal Partners HealthCare service utilization and billing database)

NOTE: These data do not include patients served by the Brigham and Women’s Physicians Organization

SOCIAL DETERMINANTS OF HEALTH

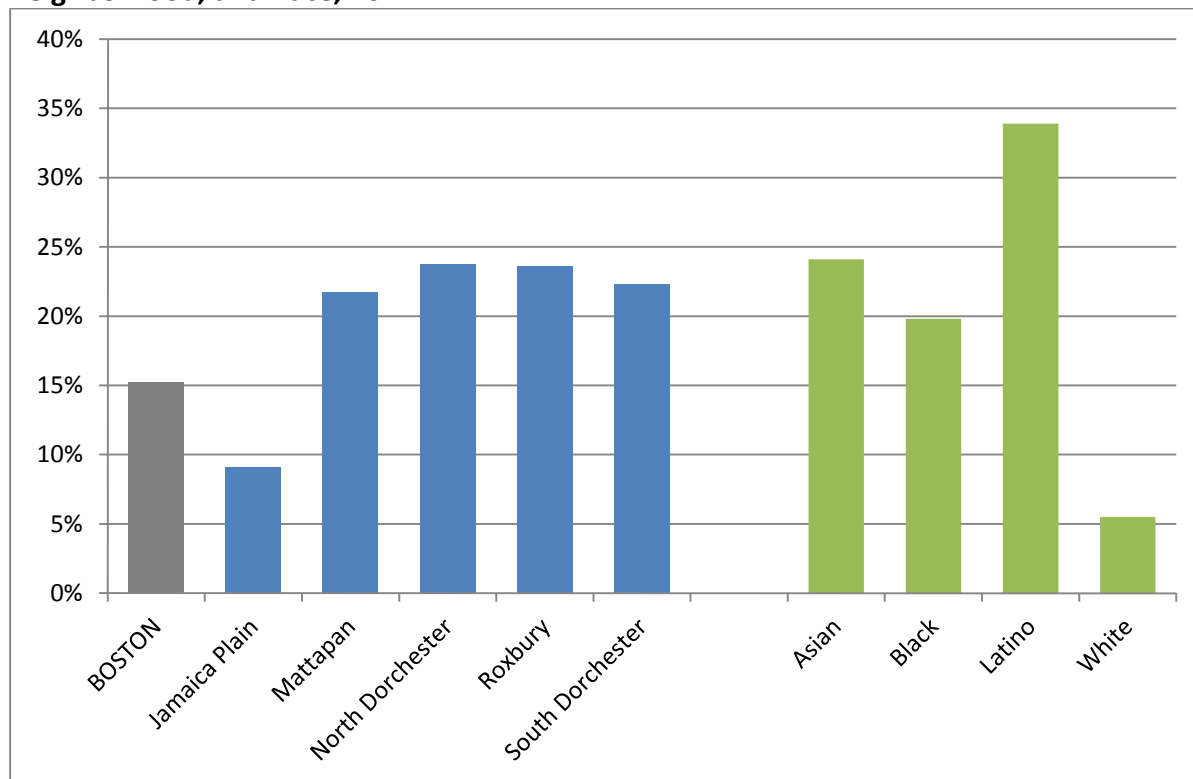
As previously noted, at the foundation of this report is an understanding of social determinants of health and the ways in which important contextual factors, including social, economic, and physical environments, have a significant impact on the health and well-being of individuals and communities. This section presents the findings on various social determinants of health that emerged strongly through the quantitative and qualitative data. These determinants include education, employment, economic stability, housing, transportation, community cohesion, and youth and youth development.

Education

Quantitative data demonstrate some variation in educational attainment across the priority neighborhoods and substantial variation by race (Figure 7). Nearly one-quarter of adults (18 years of age or older) in North Dorchester (23.7%), Roxbury (23.6%), South Dorchester (22.3%), and Mattapan (21.7%) had less than a high school diploma compared to 15.2% citywide. Jamaica Plain had the lowest percentage of adults with less than a high school diploma (9.1%).

The data also show that the percentage of residents in Boston with less than a high school diploma or GED is highly differentiated by race. Specifically, 33.9% of Hispanic/Latino adults, 24.1% of Asian adults and 19.8% of Black adults are without this qualification compared to 5.5% of White Boston residents.

Figure 7: Percentage of Adults (18+) with Less than a High School Diploma by City, Priority Neighborhood, and Race, 2012



DATA SOURCE: BPHC's *Health of Boston* Report 2014-2015

The Federal Reserve Bank of Boston's *The Color of Wealth in Boston* (2015) report analyzes educational attainment by specific racial and ethnic groups in the Boston Metropolitan Statistical Area. This report indicates that Puerto Ricans and Dominicans were the least likely to have a bachelor's degree or higher (17% and 11% respectively); these percentages are far less than that of White residents (55%) and other nonwhite groups.³

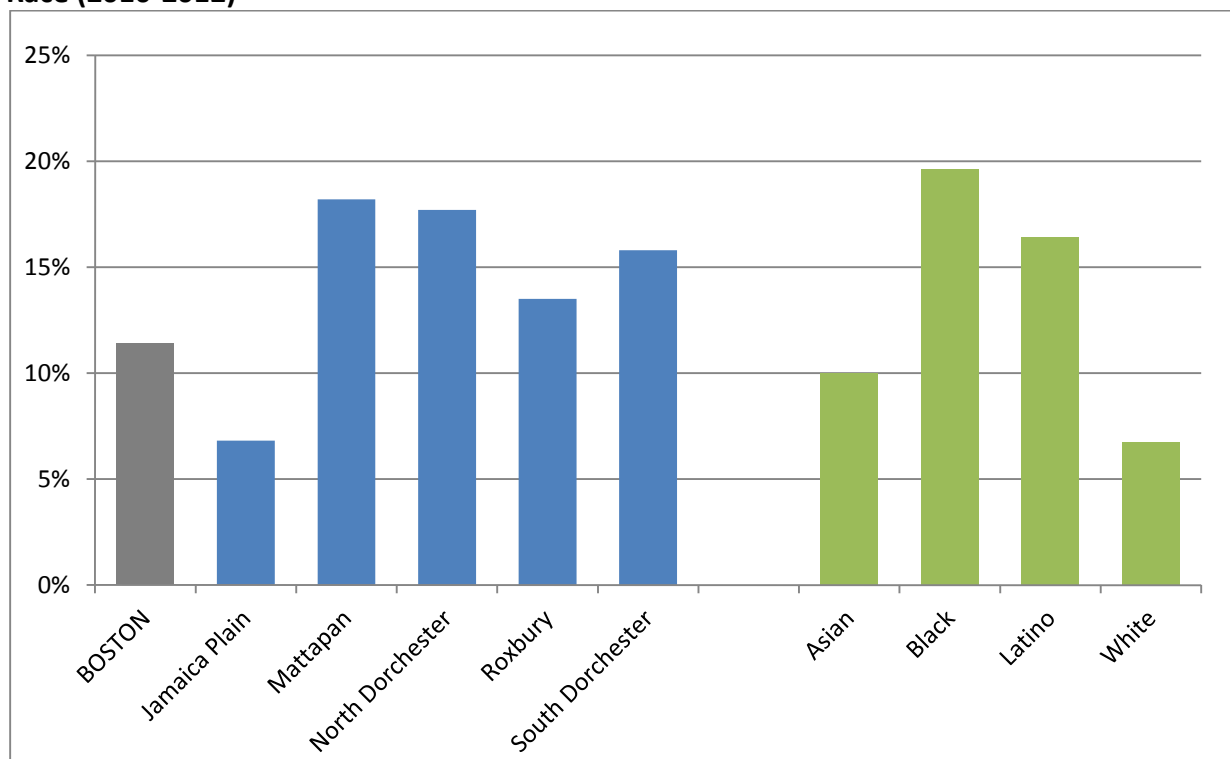
Employment

Quantitative data show disproportionate unemployment rates among some population groups. The unemployment rate for Boston residents 16 years of age or older decreased from 4.9% in December 2014 to 4.4% as of March 2016.

³ *The Color of Wealth in Boston* report targets the following nonwhite groups: multigenerational African Americans/U.S. Blacks; Caribbean Blacks; Cape Verdeans; Puerto Ricans; and Dominicans.

For the combined years of 2010 through 2012, the unemployment rate was highest among Black (19.6%) and Hispanic/Latino (16.4%) residents; these percentages were more than double the unemployment rate of White residents (6.7%). There were variations in the unemployment rate among BWH’s priority neighborhoods. For the combined years of 2008 through 2012, residents of Mattapan (18.2%), North Dorchester (17.7%), South Dorchester (15.8%), and Roxbury (13.5%) were all more likely to be unemployed compared to residents citywide (10.3%)⁴ and of Jamaica Plain (6.8%). (Figure 8)

Figure 8: Unemployment Rate by City (2010-2012), Priority Neighborhood (2008-2012) and Race (2010-2012)



DATA SOURCE: BPHC’s *Health of Boston* Report 2014-2015

Economic Stability

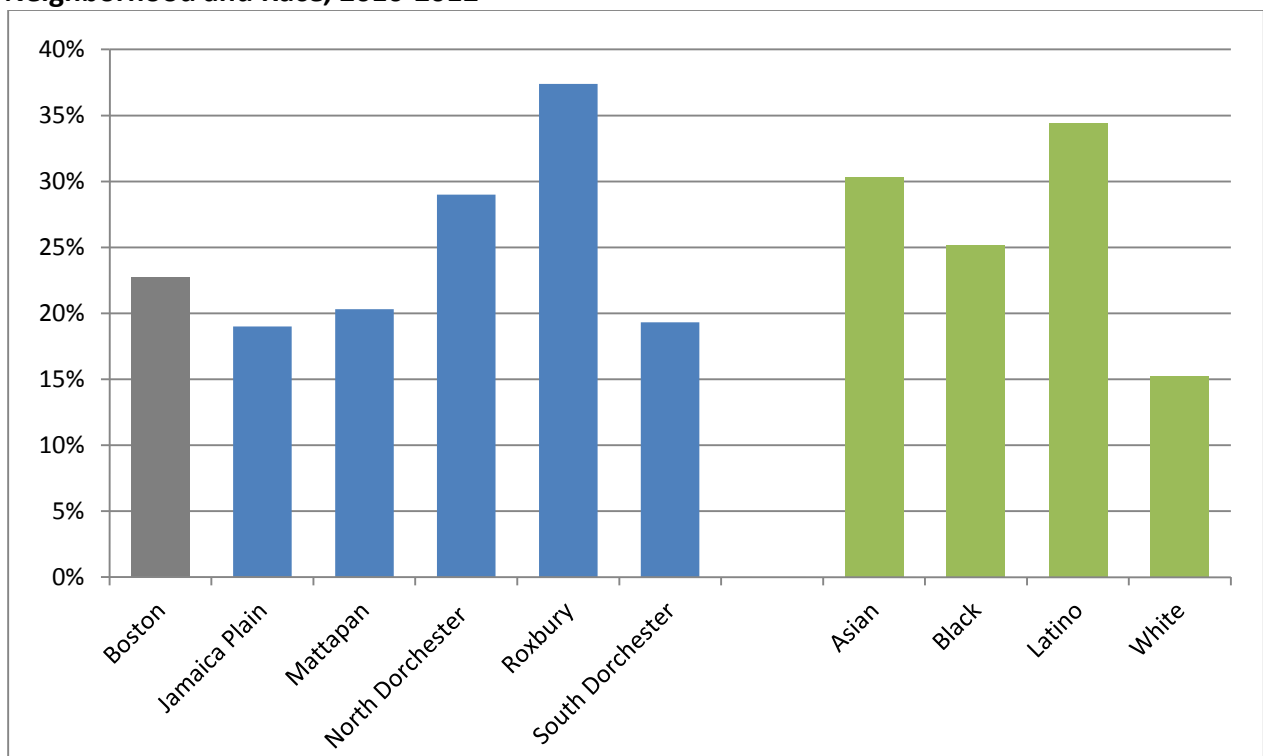
Economic data demonstrate considerable proportions of neighborhood residents living in poverty and substantial income inequities by race and ethnicity. For the combined years of 2008 through 2012, the median household income in Boston was \$51,452. Yet, the median income for Hispanic/Latino households (\$27,461) was less than half of the median income for White households (\$70,644). The median income for Asian households (\$36,419) and Black households (\$37,385) was also considerably less than that of White households.

⁴ This citywide unemployment rate is based off data from the U.S. Census Bureau’s American Community Survey, 2008-2012. Please note: the U.S. Census Bureau utilizes a different methodology for calculating unemployment rates compared to the Bureau of Labor Statistics.

Furthermore, in the Boston Metropolitan Statistical Area⁵, Dominicans and Puerto Ricans have the lowest median family income (\$37,000 and \$25,000 respectively); this is substantially lower compared to the median family income of White residents (\$90,000). Differences in median household income by priority neighborhood were evident as well. Households in Roxbury (\$27,051 for ZIP Code 02119 and \$32,367 for 02120) and North Dorchester (\$30,419 for ZIP Code 02121 and \$30,823 for 02215) had the lowest median household incomes, followed by Mattapan, South Dorchester (\$48,329 for ZIP Code 02122 and \$51,798 for 02124) and Jamaica Plain (\$74,198).

Additionally, poverty rates vary by race and by priority neighborhood (Figure 9). Hispanic/Latino families (34.4%) and Asian families (30.3%) were more likely to live below the Federal Poverty Level (FPL) than families citywide (23.0%). Comparing BWH’s priority neighborhoods, the greatest percentage of families living in poverty were residents of Roxbury (37.4%) and North Dorchester (29.0%).

Figure 9: Percentage of Families Living Below the Federal Poverty Level by City, Priority Neighborhood and Race, 2010-2012



DATA SOURCE: BPHC’s *Health of Boston Report 2014-2015*

According to the National Asset Scorecard for Communities of Color (NASCC), White households were more likely to hold every type of asset (i.e. savings and checking accounts, money market funds, government bonds, stocks, retirement accounts, business equity, life insurance, houses,

⁵ *The Color of Wealth in Boston* report provides an analysis of data for the Boston Metropolitan Statistical Area, which includes counties outside of the City of Boston and Suffolk County.

vehicles and other real estate) in comparison to the other racial and ethnic group in the Boston Metropolitan Statistical Area. In general, Puerto Ricans and Dominicans were the most asset poor. Additionally, Whites had a substantially higher total median wealth (\$247,500) compared to nonwhite groups; Dominicans and U.S. Blacks had the lowest net worth at a median wealth of close to zero. Overall, these data highlight the severe financial vulnerability faced by nonwhite households in the Boston Metropolitan Statistical Area.

Poverty and income inequality were strong themes that emerged across key informant stakeholder interviews. Stakeholders specifically discussed the implications of poverty on the ongoing health and wellness of BWH's priority communities. Interviewees mentioned the growing gap between rich and poor communities in Boston, unemployment, the impact of gentrification, and the slow economic recovery in Boston's poorest communities. Stakeholders noted that these structural issues frequently take precedent over health concerns for many residents. Moreover, members of one of the health center community advisory boards discussed the impact of parents working multiple jobs in order to support their families, specifically to pay for rising housing and food costs. Members noted that this economic pressure results in children and youth being left at home alone or "out on the streets."

Housing

Concerns regarding housing were voiced in the key informant interviews and community meetings. Key informant stakeholders highlighted issues surrounding the skyrocketing housing costs and unstable housing situations for many of Boston's low-income residents. Interviewees

"We are seeing more [housing] instability than we have ever seen, especially in our early childhood programs. When your housing is unstable, everything else becomes unstable – your connections to schools, your healthcare, everything."

-- Key Informant Stakeholder

also spoke to, what they believe are, historic levels of displacement and instability. Finally, stakeholders expressed concern regarding the poor quality of low-income housing in Boston, and named the high rates of childhood asthma and unintentional injuries among seniors as some of the health problems that residents face living in low-income housing.

Additionally, community residents spoke strongly of their concern regarding a lack of affordable housing in their neighborhoods and the stress that high housing costs can impose on a community. In reference to the challenge seniors' face paying for rising housing costs, one resident stated, "Do I get a reverse mortgage, or do I move out of this community?" Advisory board members of the community health centers echoed these concerns and also discussed the impact of gentrification on their community. These sentiments were raised in the BWH *What Matters for Health* process as well. Participants reported that increasing the availability of affordable housing would improve the health of neighborhoods and the City of Boston overall.

The cost of housing is a particular concern for renters. A greater percentage of Boston residents rent (66.0%) than own homes (34.0%). While this is consistent across Boston, percentages vary by neighborhood. Among the priority neighborhoods, Roxbury has the highest

percentage of residences that are renter-occupied (84.0%), while Jamaica Plain has the highest percentage of residences that are owner-occupied (46.0%).

Transportation

Participants of community meetings, health center community advisory board discussions, and the Students Success Jobs Program (SSJP) student forum underscored the need to improve transportation systems across BWH's priority neighborhoods. Residents specifically cited insufficient and unreliable modes of transportation, which can impact community members' ability to travel to healthcare appointments and access health care. Participants noted that elderly residents have a particularly difficult time accessing transportation services.

Participants mentioned that for elderly community members interested in accessing services in the community, there are limited transportation options to access these services. SSJP students also voiced concerns regarding transportation access and stated that some communities feel very isolated.

There are several direct negative impacts of poor public transportation, including: missed primary care appointments and decreased pharmacy access; increased stress due to long commutes and unreliable service; increased chronic hospitalizations and ER visits if primary care is delayed; decreased levels of physical activity; increased air pollution; among other impacts. In 2015, the Southern Jamaica Plain Health Center, in collaboration with community partners Alternatives for Community and Environment (ACE) and the Center for Community Health Education Research and Service (CCHERS), surveyed approximately 1,000 patients at 11 community health centers in Boston on their transportation and healthcare access. Key findings from this survey include:

- Nearly half of respondents (49.0%) indicated that they have missed an appointment in the last year due to issues with transportation
- More than half of respondents (51.7%) reported that they rely on the Massachusetts Bay Transportation Authority (MBTA) to access healthcare services
- Nearly half of respondents (47.8%) indicated that they typically get to healthcare appointments by bus, which was the most common method of transportation among respondents
- Non-White patients reported higher percentages of public transit use (by bus and/or train) for travel to healthcare appointments in comparison to White respondents
- Respondents 65 years of age and older were the most likely to report using MBTA bus service as their mode of transportation to healthcare appointments
- When looking at race/ethnicity and age group, Hispanic/Latino respondents and respondents 65 years of age and older were the most likely to travel more than 30 minutes for their healthcare appointments; and
- Non-White respondents were more likely to miss or be late for healthcare appointments due to 'out of service' or 'overcrowded' buses compared to White respondents.

In addition, at the community meeting in Jamaica Plain, the unreliability of service with subsidized transportation for those with a disability was an issue of notable concern.

Community Cohesion

Community meeting participants voiced their concern regarding a lack of community cohesion in their neighborhoods. Many cited this to be a change in recent years and felt it connected to other issues that impacted community connections, including fears associated with community violence as well as having limited time and opportunity for neighborhood engagement (often due to working multiple jobs to get by). Specific concerns regarding community cohesion included:

- A lack of trust and neighborliness among community members; one resident stated that neighbors are *“not looking out for each other”*;
- A mixed level of engagement among community members as well as a mixed level of investment in community improvement efforts (i.e., some community residents are very engaged and others are not at all engaged); and
- The disruption of the family unit, which some feel has been the root cause of many of the social problems in their community.

“It is difficult to get people to do things in the community together.”
-- Community meeting participant

At the health center community advisory board meetings, participants discussed the need to build community capacity and foster opportunities for community members to connect with one another. Community participants in the BWH *What Matters for Health* process similarly expressed a desire for activities that strengthen social relationships within and across neighborhoods and suggested that these activities would promote community health and well-being. As community cohesion has a positive ‘protective’ effect on health and well-being, this is an important area of consideration.

Youth and Youth Development

Key informant stakeholders and community meeting participants discussed the need for a greater investment in and engagement around youth development. Key stakeholders identified

“There are parks and playgrounds, but no one goes to them because there is a lot of trash.”
-- SSJP High School Student

the importance of early exposure to career options and opportunities for youth as well as the need to engage parents and caregivers in non-traditional ways (e.g., gardening, cooking classes, and embedding those with community health expertise into these activities).

Interviewees also recommended that efforts to support young people, particularly young people of color living in low-income communities, need to be holistic, engaging, and begin at an early age.

Community meeting participants and community advisory board members highlighted the need for more youth programs and physical spaces for youth to gather in BWH’s priority communities. Participants suggested implementing additional after-school and employment-based programming for youth and

“Youth need to come out and be involved”
-- Community meeting participant

other supports for young adults between the ages of 18 and 24 was very important. There was also conversation around a need for both inside and outside spaces for youth programming and encouraging physical activity. Student Success Job Program (SSJP) students voiced similar concerns regarding the limited availability of and access to activities for youth and younger children. Students stated that trash and inadequate lighting in outdoor “play” areas is a problem as well.

Youth and workforce development was a key community health issue identified through the BWH *What Matters for Health* process. Participants made connections between youth engagement and active participation in the workforce as adults. Participants also emphasized the need to keep youth engaged in their neighborhoods and communities as well as provide high quality education and social supports to youth.

INTERPERSONAL VIOLENCE AND TRAUMA

The presence of interpersonal violence and trauma throughout BWH’s priority communities was a strong theme across both the quantitative and qualitative data. These data demonstrate that violence disproportionately affects communities of color.

Black and Hispanic/Latino residents were more affected by certain types of violence compared to White residents. In 2012, the Boston nonfatal assault-related gunshot/stabbing emergency department visit rate was 0.8 per 1,000 residents. This rate was higher for Black (2.3) and Hispanic/Latino (0.7) residents compared to White residents (0.3). The Boston homicide rate in 2012 was 6.6 per 100,000 residents. The homicide rate for Black residents was 19.9 and 7.7 for Hispanic/Latino residents, both of which were significantly higher than the rate for White residents (2.0).

Additionally, more than one-quarter of Boston children (0-17) lived in households where their parent or caregiver felt that her or his child was unsafe in their neighborhood (26%). Asian, Black and Hispanic/Latino children were more likely to live in households where their parent or caregiver felt her/his neighborhood was unsafe compared to White children. The 2013 Youth Risk Behavior Survey results show 17.0% of Boston public high school students indicated that they have been bullied at school or electronically in the past 12 months. Asian high school students were the most likely to identify being bullied on school property (15.6%) and White students were the most likely to identify being bullied electronically (13.1%).

Concerns surrounding violence and trauma were emphasized across the key informant interviews and community meetings. Key informants vocalized concerns regarding the

“More likely to know someone who has been murdered than someone who has cancer”

-- Community meeting participant

pervasiveness of interpersonal violence and the impacts such violence can have on a community. Stakeholders specifically raised concerns about the impact of violence on youth development and on long-term health outcomes in adults. Women and the transgender community were specifically mentioned as groups disproportionately affected by

interpersonal violence. Interviewees mentioned a lack of cohesive linkages between service sectors addressing interpersonal violence and the need to reinforce messages and provide supports as early as possible after violence exposure.

Stakeholders interviewed highlighted concerns regarding community violence in BWH's priority communities. Stakeholders reiterated that communities of color and individuals living in poverty are disproportionately affected by community violence. They noted that investment in quality education, meaningful employment opportunities for young people, and community-building activities are important prevention strategies.

Participants in all of the five community meetings spoke to the impact of different types of violence on the fabric of their neighborhoods. Residents specifically mentioned:

- The presence of high-level violence and trauma impacting both adults and children in their communities, including domestic violence, child abuse and neglect, and community violence
- The intergenerational impact of collective trauma and the effects of such trauma on mental health
- The connection between crime and violence specifically among young adults between the ages of 18 and 24; and
- The lack of a comprehensive and/or holistic response to community violence.

“Brigham and Women’s Hospital has been doing a great job of screening people for domestic violence. What happens once people are identified is the next phase of work. Efforts need to be made to strengthen relationships and linkages to quality community-based programs that can accept a referral from the hospital and then provide wrap around supports for that individual or family.”

-- Key Informant Stakeholder

Health center community advisory board members shared concerns regarding trauma and violence in their communities. Participants indicated that there are insufficient resources and services to address the trauma experienced by community members and that trauma is not being addressed in a holistic manner. Board members also spoke to violence, specifically gang violence, present in their neighborhoods and general concerns about community safety.

“People know it isn’t safe, but at the same time, what can you really do about it?”

-- SSJP High School Student

SSJP students discussed the presence of violence in their communities; specifically gang violence, street violence and drug use that contribute to feelings of a lack of safety.

In the BWH *What Matters for Health* process, participants identified violence prevention and intervention as a key community health issue. Many participants commented on the need to address violence within their communities and in the City of Boston; gun violence was specifically mentioned in this context. Respondents indicated the need for both individual and community-based services to deal with crisis and tragedy in their communities. Participants reported that improving public safety and preventing violence in all communities is essential to enhancing community health and the health of residents citywide. Relevant data findings include:

- Among residents of priority neighborhoods, one-third (33.0%) of participants indicated that having one-on-one counseling offered on a drop-in basis for those who experience or are affected by trauma or violence in their neighborhoods would be helpful.
- One-fifth (20.0%) of participants indicated that programs and services that support or facilitate community activism around violence prevention would be helpful in their neighborhoods.

It is important to note that health and social services are increasingly recognizing the value of and need for trauma informed care and planning for the provision of care that is trauma informed. BWH participates in a working group of providers within the Partners HealthCare system that is working on this issue and seeking to develop coordinated system response.

BEHAVIORAL HEALTH

Behavioral health needs, including mental health and substance abuse disorders, remain primary concerns for BWH’s priority communities as evidenced by both quantitative and qualitative data collected.

“Behavioral health is so poorly taken care of on the healthcare side”
 -- Community Meeting Participant

Mental Health

Quantitative data demonstrate the presence of symptoms of depression and anxiety among adults and youth in Boston. More than one in ten (12.2%) adults and three in ten (30.1%) public high school students in Boston reported persistent sadness (feeling sad, blue, or depressed 15 or more of the past 30 days). Female high school students (37.0%) were more likely to experience persistent sadness compared to male students (23.1%). For adults, this percentage did not vary substantially across BWH’s priority neighborhoods, however, was highest among residents of North Dorchester (16.5%) and South Dorchester (14.5%). Also, Hispanic/Latino adults were more likely to self-report experiencing persistent sadness (16.7%) compared to White adults (10.8%).

One-fifth of Boston adults reported feeling tense or anxious more than 15 days within the past 30 days (20.2%). Residents of Roxbury were the most likely to self-report feeling tense or anxious (29.1%). White adults had the highest percentage of self-reported persistent anxiety in 2013 (23.1%). Additionally, citywide, the average annual suicide rate from 2009 to 2013 was 6.7 per 100,000 population.⁶ This rate was higher in North Dorchester (8.7) and in South Dorchester (7.7).

In 2012, the rate of mental health hospitalizations per 1,000 residents was 8.2. White residents had the highest rates of mental health hospitalizations compared to Asian, Black, and Hispanic/Latino residents.⁷ Additionally, among BWH’s priority neighborhoods, Roxbury (10.1) and South Dorchester (9.9) had the highest mental health hospitalization rates.

⁶ This rate is per 100,000 of the population. Average annual age-adjusted rates shown.

⁷ Age-adjusted rates shown.

Participants across the key informant interviews and community meetings highlighted mental health as an ongoing issue that requires increased attention. Key informant stakeholders cited the following concerns related to mental health:

- Depression, anxiety, and trauma
- The need for greater access to mental health services
- A lack of awareness of symptoms of distress
- Stigma associated with mental health challenges
- Limited access to culturally appropriate resources
- Over-reliance on “quick fixes,” such as medication; and
- The need for innovative approaches to supporting positive mental health.

Community meeting participants expressed similar concerns regarding the mental health of residents within their neighborhoods and the lack of access to mental health services. These concerns came up in four of the five community meetings. Community residents spoke to the following issues related to mental health:

- Trauma, isolation, persistent sadness and depression; unemployment and joblessness, hopelessness, and the challenges of immigration integration (or lack thereof) as contributing factors
- The link between untreated mental health issues and substance abuse, as well as the impact of these factors on community violence
- The insufficient accessibility and high cost of mental health services;
- The ongoing stigma associated with mental illness; and
- The historical neglect of communities of color by local government, which has contributed to community isolation and feelings of powerlessness.

Concerns surrounding mental health were also raised at one of the two meetings with community health center advisory board members. Participants mentioned that the need for mental health services does not line up with the capacity of existing services. They noted that Spanish speaking mental health providers are hard to find.

Furthermore, mental health was identified as one of the key community health issues by participants of the BWH *What Matters for Health* process. Managing stress and anxiety were two of the most commonly noted areas that people struggle with in their lives. Participants indicated that stress is often the result of the difficulty of balancing work, family life and personal time and managing personal responsibilities. Healthy aging and experiencing tragic events also came up in the context of mental health. The main themes of these community health issues focused on the need to build strong support networks at the individual and neighborhood levels.

Substance Use

The following types of substance abuse are addressed in this section: binge drinking, cigarette smoking, marijuana use, other drug use, unintentional overdoses, substance abuse treatment,

substance abuse hospital patient encounters, and deaths due to substance use disorders (SUDs).

One-quarter of Boston adults reported binge drinking⁸ in 2013 (25.4%). This percentage did not vary much across BWH priority neighborhood. White adults were the most likely to report binge drinking (33.1%) by race and ethnicity. Among Boston public high school students, 14.9% reported binge drinking. White and Hispanic/Latino students reported higher rates of binge drinking (21.5% and 19.2% respectively).

In 2013, smoking rates were higher among North Dorchester residents (24.9%), Roxbury residents (22.5%), and South Dorchester residents (20.9%) than Boston residents overall (18.7%). Also, White public high school students were the most likely to have smoked cigarettes in the past 30 days (22.9% compared to 9.0% in Boston).⁹ Approximately one-quarter of Boston public high school students reported using marijuana in the past 30 days in 2013 (25.6%); this number has been increasing since 2005. More than four in ten high school students reported having used marijuana at some point during their lifetime (41.9%). After marijuana, in 2013, Boston public high school students reported prescription drugs (e.g. Vicodin and OxyContin) (used without a prescription or not as prescribed) (7.8%) and ecstasy (MDMA) (4.6%) as the next most commonly tried drugs.

In 2013, the unique-person substance abuse treatment admission rates¹⁰ were substantially lower for Asian, Black and Hispanic/Latino residents compared to White residents. The unique-person treatment admission rates (for substances identified as primary, secondary, or tertiary drugs of abuse) were highest for alcohol followed by heroin and cocaine. The unique-person admission rates for alcohol, cocaine and marijuana were notably higher for Black residents compared to White residents. White residents had the highest unique-person admission rates for heroin and prescription drugs. Hispanic/Latino residents also had a significantly higher admission rates for marijuana in comparison to White residents. Examining unique-person substance abuse treatment admissions by geography, it is evident that Roxbury and South Dorchester had the highest rates for all five types of substances listed on Table 4. It should be noted that we do not have an illustration of trends over time, but just the single year of 2014.

⁸ Binge drinking is defined as a pattern of alcohol consumption that brings the blood alcohol concentration level to 0.08% or more. It usually corresponds to 5 or more drinks for men and 4 or more drinks for women on a single occasion, generally within 2 hours.

⁹ These percentages reflect combined data from 2011 and 2013.

¹⁰ These rates reflect the number of unduplicated persons (12 years of age or older) being admitted to treatment for substance abuse per 1,000 residents per year. These rates are age-adjusted as well.

Table 4: Unique-Person Treatment Admissions per 1,000 Residents 12+ by Drug*, City and Neighborhood, 2014

Geography	Alcohol	Heroin	Cocaine	Prescription Drugs	Marijuana
Boston	8.6	7.2	4.8	3.2	2.8
Jamaica Plain	7.8	6.3	4.4	2.7	2.4
Mattapan	7.0	4.2	3.2	1.2	3.1
North Dorchester	8.3	6.7	5.1	2.8	2.9
Roxbury	14.2	14.0	9.9	4.1	5.8
South Dorchester	13.2	13.4	9.2	5.6	6.4

*Self-identified as primary, secondary, or tertiary drug of abuse

NOTE: Age-adjusted rates per 1,000 population ages 12+ shown

DATA SOURCE: Bureau of Substance Abuse Services, Massachusetts Department of Public Health

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

Hospital patient encounter rates due to unintentional overdose/poisoning among Boston residents increased for opioids (including heroin) and for benzodiazepines from 2007 to 2012. These rates were highest among White residents. Table 5 demonstrates that Roxbury had the highest rates of substance abuse hospital patient encounters (for both alcohol and drug abuse) of residents 12 years of age and older.

Table 5: Substance Abuse Hospital Patient Encounters* per 1,000 Residents 12+ by Type, City and Neighborhood, 2013

Geography	Overall	Alcohol	Drug
Boston	24.4	17.7	6.8
Jamaica Plain	17.3	13.8	3.5
Mattapan	15.3	9.9	5.3
North Dorchester	19.9	13.4	6.5
Roxbury	34.9	22.6	12.2
South Dorchester	24.4	16.1	8.3

*Includes ED visits, observational stays and inpatient hospitalizations

NOTE: Age-adjusted rates per 1,000 population ages 12+ shown

DATA SOURCE: Bureau of Substance Abuse Services, Massachusetts Department of Public Health

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

Looking at emergency department (ED) data specific to BWH, there were 260 ED visits with a primary diagnosis of mental health or SUDs among individuals with a Boston ZIP Code in FY2014. Of all ED visits for Boston residents, 5.8% received a primary diagnosis of mental health or SUDs in FY2014. Of this 5.8%, 3.2% of ED visits received a primary diagnosis of SUDs (n=144). Among ED visits with SUDs diagnoses, approximately 85% of diagnoses were described as alcohol-related (n=122).

South Dorchester, Mattapan and Roxbury had the highest rates of substance deaths due to drugs of BWH’s priority neighborhoods and South Dorchester, Roxbury and North Dorchester had the highest rates due to alcohol. For unintentional drug overdose deaths, South Dorchester and Mattapan had the highest rates of BWH’s priority neighborhoods for all drugs and South Dorchester had the highest rate of opioid overdoses. (Table 6)

Table 6: SUD Related Deaths of Residents Ages 12+ per 100,000 Population by City and Neighborhood

Geography	Substance Abuse Deaths		Unintentional Drug Overdose Deaths		
	<i>Drugs</i>	<i>Alcohol</i>	<i>All Drugs</i>	<i>Opioids</i>	<i>Cocaine</i>
Boston	19.1	8.8	15.5	12.6	5.4
Jamaica Plain	18.0	6.2	15.0	11.6	3.7
Mattapan	23.6	2.5	18.8	13.5	6.8
North Dorchester	16.7	10.1	13.9	9.6	7.7
Roxbury	21.4	10.3	15.9	10.5	7.3
South Dorchester	24.0	12.6	19.2	17.6	5.4

NOTE: Average annual age-adjusted rates shown with 2009, 2010, 2011, 2012, 2013 data combined

DATA SOURCE: Boston Resident Deaths, Massachusetts Department of Public Health

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

Key stakeholders indicated that substance abuse and access to treatment are major issues for residents of BWH’s priority neighborhoods. Interviewees acknowledged the strong link between substance use disorders and housing instability, homelessness, unemployment, and interpersonal and community violence. Stakeholders identified the following specific concerns:

- Widespread opioid use and the need for BWH to increase its current efforts to address the opioid epidemic
- The lack of immediately available detox beds; and
- The lack of communication between clinical and community-based support services.

In addition, community meeting participants in three of the community meetings spoke strongly of their concerns and impact of substance abuse in their neighborhoods. Meeting participants cited the following:

- The abuse of alcohol and drugs and the prevalence of cigarette smoking
- The link between substance abuse and untreated mental health issues
- The connection between drug activity and homelessness; and
- The need for affordable and accessible services (e.g., outreach and treatment programs).

“Substance use affects the whole family”
-- Community meeting participant

Concerns regarding substance abuse arose as strong themes across the meetings with health center community advisory board members as well. Participants discussed the need to educate

community members on the effects of drug and alcohol use as well as the need for culturally and linguistically appropriate treatment services. In addition, Student Success Jobs Program (SSJP) students mentioned that there are liquor stores on every corner and that alcohol is widely available.

HEALTH EQUITY

This assessment applies a health equity lens and examines not only who is at greater risk for disease, but also why some populations are at greater risk of preventable illness, injury and death compared to others. According to the Democracy Collaborative's *Can Hospitals Heal America's Communities?* (December 2015), health equity is the opportunity for everyone to achieve their full health potential through an environment where there is not disadvantage associated with social position (e.g. socioeconomic status) or socially assigned circumstances (e.g. race, gender, ethnicity, sexual orientation, geography, etc).

Findings from this assessment illustrate that health inequities persist across BWH's priority neighborhoods and specifically impact communities of color. Boston's Black and Hispanic/Latino residents experience higher levels of poor health outcomes when compared to White residents. This section discusses the many areas in which we see troubling and ongoing inequities in health, particularly for communities of color. These topic areas include the impact of racism; obesity, active living and healthy eating; chronic disease; reproductive and maternal health; and sexual health.

Impact of Racism

Recent work of the American Public Health Association (APHA) (2016) identifies that racism fundamentally impacts social determinants of health (e.g., housing, education and employment) and stands as a major barrier to health equity. Structural and institutional racism and other exclusionary practices are significant contributors to social inequities among particular racial/ethnic groups. Black and Hispanic/Latino adults reported a substantially higher likelihood of experiencing a form of stress as a result of their race in comparison to White residents. Specifically, Black and Hispanic/Latino residents were more likely to:

- Feel emotionally upset by perceived race-related treatment once or more per day (19.3% of Black residents and 16.1% of Hispanic/Latino residents compared to 7.6% of White residents);
- Experience physical symptoms based on perceived race-related treatment once or more per day (12.5% of Black residents and 11.6% of Hispanic/Latino residents compared to 2.7% of White residents); and
- Perceive they were treated worse than other races when seeking healthcare (11.1% of Black residents and 6.8% of Hispanic/Latino residents compared to 2.5% of White residents).

Inequity in health, namely by race/ethnicity, was a reoccurring theme across the key informant stakeholder conversations. Stakeholders spoke to the troubling inequities and disparities in

health outcomes experienced by communities of color in Boston. One stakeholder specifically discussed the institutionalized racism and segregation present citywide, which has had a particularly harmful effect on BWH's priority communities. Interviewees mentioned inequities in income, housing, neighborhood infrastructure, employment opportunities, food access, feelings of belonging in one's neighborhood, among others, which are concentrated in communities of color and impact the overall health and well-being of individuals.

Moreover, racial equity was identified as one of the key community health issues in the BWH *What Matters for Health* Initiative. Nearly three-quarters (73%) of respondents to the question on equity indicated that they do not believe the City of Boston is a racially equitable place to live. These perceptions did not vary based on neighborhood affiliation, racial/ethnic characteristics, or other demographic information.

Obesity, Active Living, and Healthy Eating

This section examines the quantitative and qualitative data pertaining to obesity, physical activity, fruit and vegetable consumption, and soda consumption. These data demonstrate that residents of color are more likely to be obese, less likely to be physically active, less likely to consume fruits and vegetables, and more likely to drink soda. These behaviors, as demonstrated by Figure 2, have an important impact on overall health and well-being and are strongly linked to the social and economic context in which people live. In neighborhoods where people are fearful to exercise outside because of community violence or access to healthy, affordable food is limited, the 'health promoting' opportunities available are greatly diminished. In health promotion parlance, the 'healthy choice' is not by any means the 'easy choice.'

In 2013, 21.7% of Boston adults (18+) were obese. Obesity rates are disproportionately higher in BWH's priority communities, Mattapan, Roxbury, North Dorchester, and South Dorchester. Black and Hispanic/Latino adults were more likely to be obese compared to White adults. Among public high school students in Boston, 13.8% were considered obese in 2013. Obesity rates are highest among Hispanic/Latino high school students. (Figure 10) One internal key informant discussed the concern of obesity among pregnant women and children in particular. Obesity was also raised as a concern by residents in one of the community meetings and among SSJP students.

Center for Disease Control (CDC) recommends 150 minutes of aerobic physical activity a week. Nearly six in ten Boston residents met these guidelines in 2013 (57.5%). Residents of Mattapan (49.5%), North Dorchester (54.0%), and South Dorchester (54.5%) were less likely to have met the CDC's guidelines for physical activity. Hispanic/Latino and Black adults were less likely to have met these guidelines (46.9% and 53.4% respectively) compared to White residents (62.3%). Health center community advisory board members and community meeting participants stressed the need for additional spaces for community members to engage in physical activity. Furthermore, getting regular exercise was one of the most commonly identified personal health priorities by participants of the BWH *What Matters for Health*

process. Participants recommended expanding opportunities that promote physical activity to improve the health and well-being of neighborhoods.

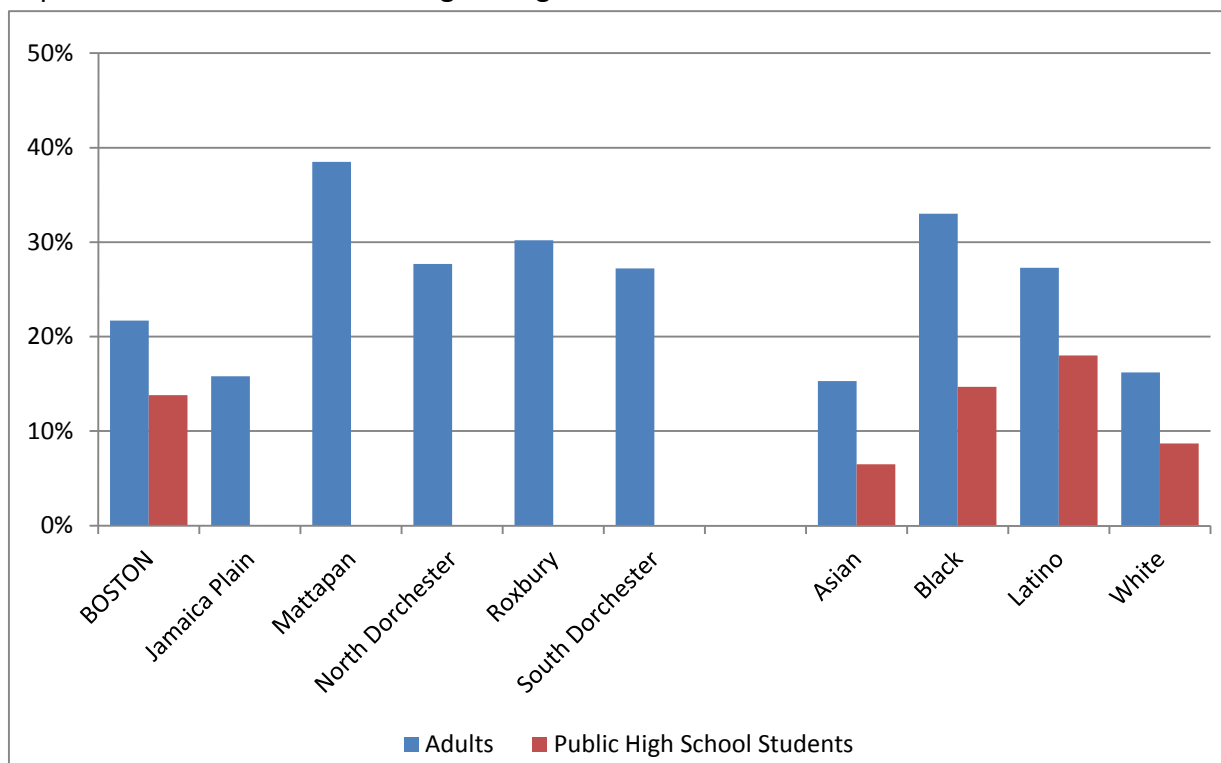


Figure 10. Percentage of Adults and Public High School Students who are Obese by City, Neighborhood and Race, 2013

NOTE: Data by neighborhood is unavailable for high school students.

DATA SOURCE: BPHC’s *Health of Boston* Report 2014-2015 and population health data obtained from BPHC.

One-quarter of Boston adults consumed less than one serving of vegetables per day (24.8%) in 2013 and 37.5% consumed less than one serving of fruits per day. These percentages were higher among four of five BWH priority neighborhoods—North Dorchester, South Dorchester, Roxbury and Mattapan. Black residents were more likely to have consumed less than one serving of vegetables per day (34.0%) and Hispanic/Latino, Black and Asian residents were more likely to have consumed less than one serving of fruits per day (42.9%, 42.0%, and 41.5% respectively).

Participants from two of the five community meetings communicated that residents are interested in eating healthier foods, but there is an ongoing need for nutrition education in their communities. Residents from one community specifically indicated a need for education around how to read and understand food labels. SSJP high school students pointed out that there are corner stores at every block, but few grocery stores. According to *County Health Rankings & Roadmaps*, corner stores generally sell unhealthy and non-perishable food items. SSJP students also noted that healthy foods are often more expensive than unhealthy foods. Participants of the BWH *What Matters for Health* process also identified eating healthy as a top

personal health priority and indicated that neighborhoods would be healthier with increased access to healthy and affordable food.

Approximately 13% of Boston adults consumed one or more sodas per day in 2013 (12.7%). This percentage is higher among Hispanic/Latino (20.6%) and Black (16.8%) residents. In addition, 16.8% of Boston public high school students consumed one or more sodas per day. Hispanic/Latino high school students were the most likely to consume at least one soda daily (20.3%). The consumption of soda and other sugar-sweetened beverages is the largest source of empty calories for children and youth in the United States. Many leading health organizations (e.g. the Centers for Disease Control and Prevention, the American Academy of Pediatrics) have recommended reduced consumption of these beverages for health-related reasons and due to their tie to obesity.

Chronic Disease and Mortality

The following section provides an overview of quantitative and qualitative data on several chronic diseases, including heart disease, cancer, diabetes, asthma, hypertension, as well as stroke. Similar to the health behaviors discussed above, the data presented indicate that communities of color are disproportionately impacted by chronic disease.

Concerns regarding chronic diseases were evident across the qualitative data. Internal key informant interviews specifically highlighted diabetes, asthma and high blood pressure as areas of particular concern. An interviewee spoke to missed opportunities to prevent chronic diseases early on, which results in uncontrolled conditions and complications later on in life. Numerous interviewees suggested that BWH needs to take the responsibility for the coordination of care for patients with chronic health issues who are coming in and out of BWH's emergency department; this involves linking them to a primary care provider. In the BWH *What Matters for Health* process, nearly 30% of participants reported that more education on health and prevention would be helpful to reduce chronic diseases. Participants also focused on the link between chronic disease and poverty or income inequalities.

The heart disease hospitalization rate for Boston was 9.8 per 1,000 residents in 2012, a decrease from 11.3 per 1,000 in 2008. Black and Hispanic/Latino residents had higher rates hospitalization due to heart disease (13.6 and 9.9 per 1,000 residents respectively) in comparison to White residents (9.0). Among priority neighborhoods, Roxbury and North Dorchester had the highest heart disease hospitalization rates.

Data from the Behavioral Risk Factor Surveillance Survey (BRFSS) show diabetes disproportionately affecting residents in certain neighborhoods. It should be noted that these BRFSS data are in crude rates and are not age-adjusted. In 2013, 8.6% of Boston adults (18+) reported that they had been diagnosed with diabetes. The percentage of Mattapan residents surveyed that reported that they have

"Diabetes feels like it just came out of nowhere. It feels normal for people to have it now."
-- Community Meeting Participant

diabetes is more than double that of the Boston average (19.1%). Also, 15.1% of Roxbury residents, 12.4% of North Dorchester residents, and 10.0% of South Dorchester residents reported having diabetes. Black and Hispanic/Latino residents were more likely to report having diabetes (14.1% and 12.6% respectively) compared to 5.1% of White residents. Residents at one community meeting shared their concern regarding the prevalence of diabetes in their community.

In 2013, 11.1% of Boston adults (18+) had asthma. This percentage was higher among residents of North Dorchester (17.7%), Jamaica Plain (16.0%), and Roxbury (13.8%). Nearly one-quarter of Boston adults (18+) had hypertension in 2013 (24.0%). This percentage is substantially higher for Black residents (36.7%) and higher for Hispanic/Latino results (26.2%) as well.

Overall, cancer ranked as the City of Boston’s most common cause of death, with 176.1 deaths per 100,000 population, followed by heart disease (133.6 deaths per population), and stroke (26.6 per 100,000 population). Among BWH’s priority neighborhoods, residents of South Dorchester experience death due to cancer at a higher rate (199.6 deaths per 100,000 population) than residents citywide. In addition, residents of Roxbury (148.3 deaths per 100,000 population) have heart disease mortality rates above that of the City of Boston (133.6 deaths per 100,000 population). Mattapan has the highest mortality rate due to stroke (40.8 deaths per 100,000 population). (Table 7)

Table 7: Rate of the Leading Causes of Death per 100,000 Population by City and Neighborhoods, 2013

Geography	Cancer	Heart Disease	Cerebrovascular Disease (Stroke)
Boston	176.1	133.6	26.6
Jamaica Plain	126.7	133.6	28.3
Mattapan	170.6	131.3	40.8
North Dorchester	147.9	133.2	23.6
Roxbury	170.8	148.3	29.4
South Dorchester	199.6	123.1	29.8

NOTE: Age-adjusted rates shown

DATA SOURCE: Boston Resident Deaths, Massachusetts Department of Public Health

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

While community meeting participants (with the exception of Mattapan) did not generally identify cancer as a key community health issue unprompted, when asked specifically about cancer, some individuals expressed the following concerns:

- Concentrated areas of incidences of cancer in communities, including citing a two-to-three block radius in which many men have died of prostate cancer

- A lack of health literacy and trust as major barriers to regular cancer screening and prevention; and
- Confusion around insurance coverage of specific cancer screenings and the need for more education and support around this issue.

"I can't think of one male in my age group [on a particular street] that didn't get cancer"

-- Community Meeting Participant
[Meeting comprised largely of seniors]

Reproductive and Maternal Health

Racial and ethnic disparities exist in mortality and morbidity for mothers and children, particularly among African Americans. This section highlights some of these disparities and specifically discusses infant mortality, low birth weight births, Women, Infant, and Children (WIC) enrollment¹¹, pre-term births, and births to women ages 15-19.

From 2008 to 2012, there was a significant decrease in the infant mortality citywide and among Black infants. The infant mortality rate for Black infants in 2008 was nearly 15 infant deaths per 1,000 births; this rate decreased to 6.5 in 2012. Despite this decline in the Black infant mortality rate, infant death rates for Black (6.5 per 1,000) and Latino (6.5 per 1,000) infants were still higher than White infants (3.3 per 1,000). In addition, in 2012, 11% of Black women and 9% of Hispanic/Latino women gave birth to low birth weight babies compared to 7% of White women. Data on WIC enrollment demonstrate that Hispanic/Latino (39%) and Black (37%) children ages 0 to 5 have higher WIC enrollment rates than White (11%) and Asian (11%) children.

In 2013, Mattapan, Roxbury, North Dorchester, and South Dorchester had higher rates of pre-term births (before 37 weeks gestation), low birth weight births (less than 2,500 grams), infant mortality, and repeat births to women ages 15 to 19¹² when compared to the rates citywide (Table 8).¹³ Looking at births to women aged 15 to 19, Mattapan, North Dorchester, South Dorchester, and Jamaica Plain had the highest rates. The rate of births to women ages 15 to 19 in Mattapan (30.9 per 1,000 women) and North Dorchester (29.6) were nearly triple that of the rate citywide (11.7). Dorchester ranked in the highest quartile of the Poor Birth Outcomes Index¹⁴ and Mattapan ranked in the second highest quartile.

¹¹ WIC provides supplemental nutritious foods, nutrition education and counseling, and screening and referrals to other services for low-income women and children who are assessed as nutritionally at-risk.

¹² According to the Centers for Disease Control and Prevention (2013), a repeat "teen" birth is the 2nd (or more) pregnancy ending in a live birth before the age of 20.

¹³ These rates are the average annualized aggregate rates from 2009 to 2013.

¹⁴ The Poor Birth Outcome Index is based on infant deaths, low birth weight births, and preterm births.

Table 8: Maternal and Child Health Indicators by City and Priority Neighborhood

	Boston	Jamaica Plain	Mattapan	North Dorchester	Roxbury	South Dorchester
Pre-term births (before 37 weeks gestation)*	9.4%	8.3%	11.6%	10.5%	10.5%	10.7%
Low birth weight births (less than 2,500 grams)*	9.0%	7.9%	11.4%	10.7%	10.5%	10.4%
Infant mortality rate**	5.0	1.9	6.5	6.4	5.5	6.5
Birth rate of women ages 15 to 19***	11.7	16.2	30.9	29.6	9.4	21.3
Repeat birth(s) to women ages 15 to 19*	12.0%	7.2%	10.7%	13.3%	11.5%	11.6%

*Average annualized rate (2009-2013)

**Average annualized rate (2009-2013); infant deaths per 1,000 live births

***Births per 1,000 women (2013)

DATA SOURCE: Boston Resident Births, Massachusetts Department of Public Health

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

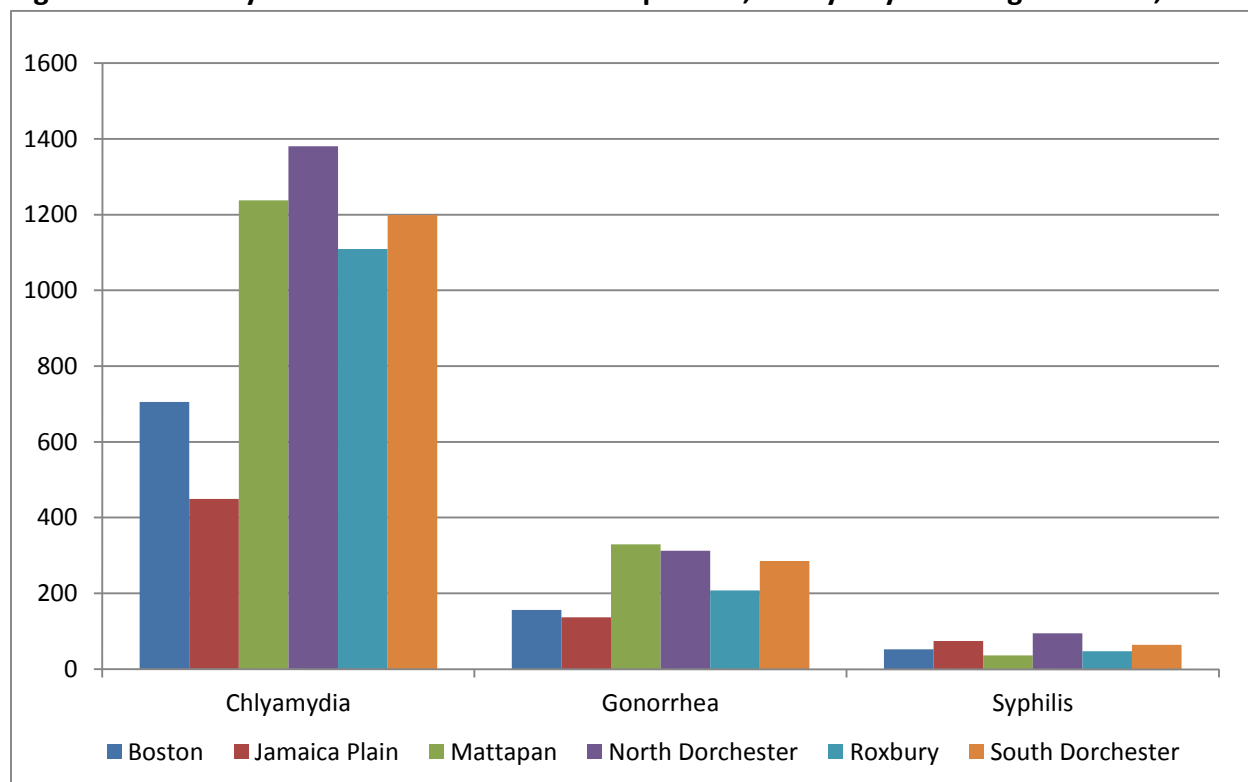
Two key informant stakeholders highlighted prenatal health as a key health and well-being issue for BWH’s priority communities. In addition, when BWH *What Matters for Health* process participants were asked about recommendations for delivering healthy babies, respondents indicated that expecting parents should consult their primary care providers for information on how to maintain a healthy pregnancy.

Sexual Health

Inequities persist in the area of sexual health with communities of color disproportionately burdened by sexually transmitted infections (STIs). Based on data from the Youth Risk Behavior Survey (YRBS), in 2013, the percentage of high school students who have ever had sex was highest among Hispanic/Latino students (57.4%) and substantially higher than among White (35.0%) and Asian (22.0%) students. Also, the percentage of sexually active Boston public high school students who reported using a condom during the last time they had sex decreased from 76.3% in 2005 to 66.5% in 2013.

According to the Division of STD Prevention of the Massachusetts Department of Public Health, the Chlamydia rate in Boston was 705.5 new cases per 100,000 residents in 2013. This rate varies substantially across BWH priority neighborhood (Figure 11). In 2013, the Gonorrhea rate in Boston was 156.1 new cases per 100,000 and the Syphilis rate was 52.6. All three of these rates increased since 2009.

Figure 11: Sexually Transmitted Infection Rates per 100,000 by City and Neighborhood, 2013



NOTE: Rates per 100,000 population

DATA SOURCE: Division of STD Prevention, Massachusetts Department of Public Health

DATA ANALYSIS: Boston Public Health Commission Research and Evaluation Office

In 2011, the incidence rate for newly diagnosed HIV/AIDS cases was 31.0 per 100,000 Boston residents. The incidence rate for Black residents (66.9) and Hispanic/Latino residents (34.6) was higher than for White residents (18.2). The total number of individuals living with HIV/AIDS in Boston increased from 2007 to 2011. The rate for individuals living with HIV/AIDS in Boston was 858.3 per 100,000 residents in 2011. This rate was higher among Black and Hispanic/Latino residents compared to White residents. The neighborhoods of North Dorchester (46.5) and Roxbury (43.3) had the highest average annualized rates (2009-2013) per population of newly diagnosed cases of HIV infection. The rate for Boston citywide was 30.3.

ACCESS TO HEALTHCARE

An additional key theme evident in the qualitative and quantitative data focuses on access, or lack of access, to healthcare. Several key informant interviewees discussed concerns surrounding access to care for BWH's priority communities. There was specific mention of issues related to under-insurance and barriers to accessing healthcare services for those with government sponsored healthcare plans. Access to primary care and needed social services was also discussed.

While the rate of uninsured in Massachusetts is now at a historic low, roughly 37% of insured Massachusetts residents said they went without necessary medical care in 2015, and this number is significantly higher amongst low-income residents (52% for individuals at or below 138% of the Federal Poverty Level). Trouble finding a provider, trouble getting an appointment in a timely manner and costs were the three main reasons care was not received. Health insurance premium rates continue to grow year-on-year and as a result, 19% of Massachusetts commercial market members are in high deductible health plans which offer lower premium costs up front in exchange for high cost sharing/out of pocket costs later on.

Regulatory changes for the Health Safety Net (HSN) that went into effect in June 2016 and changes to MassHealth plan enrollment rules that will go into effect in October 2016 have the potential to impact the access low income people have to care. HSN changes increased both the cost sharing and the administrative burden for patients to prove that they have paid their annual deductible. Given that this fund is to a large extent used by undocumented residents who are already an underserved population, these changes may further expand health inequities in communities across the state. Changes to MassHealth are planned that will have the effect of stabilizing the caseload and reducing churn – important outcomes for providers who will soon be taking financial risk on these populations. Members in MCO plans will be locked into their plan until the next annual open enrollment period (in line with what commercially insured and ConnectorCare members must commit to). Further changes to MassHealth may also come in 2017 as the state prepares to launch its MassHealth ACO.

“As we move into the brave new world of ACOs [Accountable Care Organizations], there will have to be strong community partners that can help ensure proper care and resources for an individual. These partnerships are the only ways that you get the cost savings that are hoping for and, frankly, to make a difference in any of these issues.”

-- Key Informant Stakeholder

APPROACH TO WORKING WITH COMMUNITIES

Throughout the course of the qualitative data collection, key informant interview and meeting participants shared their suggestions for how BWH and hospitals in general can best approach their work and engagement with communities. These suggestions are important findings from this CHNA and described in detail below.

Leverage Community Assets and Focus on Partnership

One theme that came through the key informant interviews, community meetings, and discussions with health center advisory board members and SSJP students centered on learning from and leveraging the expertise of community members and leaders. Participants suggested that hospitals draw upon and build on the existing strengths of communities, specifically the ongoing and fruitful community building and community development efforts taking place across BWH’s priority neighborhoods. Partnering with individuals and organizations that have the trust of residents and a deep understanding of the community would be valuable assets in addressing the significant health inequities faced by residents.

In addition, community meeting participants mentioned that there are numerous community organizations and neighborhood groups dedicated to improving community health, yet more collaboration and coordination across organizations and providers is needed. They suggested that hospitals take a lead role in these collaborations and in promoting consistent education about the services that are available. Stakeholders stressed hospitals should avoid the duplication of services and should tailor programs and interventions to the unique needs of community members.

“When we do work around community health we usually try to figure out how we are going to ‘fix’ communities. Instead we need to start taking a look at ourselves. How can we fix ourselves because we might be part of what is causing problems within some of our most distressed communities.”

-- Key Informant Stakeholder

Stakeholders encouraged hospitals to focus on efforts that build trust with communities, develop cohesion among community members, and empower residents “to get to know each other.” At one community meeting, participants suggested utilizing peer to peer empowerment models, which allow residents to learn from others with similar experiences.

Similarly, stakeholders stressed the importance of hospitals partnering *with* communities to improve health and wellness. Interview and meeting participants suggested that hospitals invest their time and resources in developing long-lasting and sustainable partnerships with communities. A specific suggestion included expanding and developing new partnerships with community-based organizations. A community advisory board for the hospital was also seen as a valuable step.

Another suggested approach for leveraging community assets and partnering with community members is through the use of community health workers (CHWs). Stakeholders across the meetings and interviews noted the value of CHWs, who can connect with communities, develop trust with residents, and understand patients’ needs. Key informant interviewees discussed BWH’s current work with CHWs (specifically in primary care) and suggested expansions of CHW projects, namely in in-patient settings. One stakeholder noted that CHWs are currently a largely under-resourced support service across the Commonwealth of Massachusetts. Also, community meeting participants emphasized the importance of outreach workers and CHWs who are culturally competent and speak the languages of BWH’s diverse priority communities.

Increase Hospital Presence in Priority Communities

Community and other stakeholders highlighted the need for BWH and other hospitals to “be more present in neighborhoods” and engage in the experiences and challenges of residents. It was suggested that hospitals embed services where

“We often don’t know what we need and once we need it, we need it immediately and don’t know who to contact”

-- Community meeting participant

residents live and congregate, and conduct additional community outreach to residents most in need. Community meeting participants stated that it is important for healthcare providers to understand the neighborhoods they are serving, specifically the social and community stressors many patients in those neighborhoods face. At one meeting, residents suggested having a hospital point person for community members to help improve communication, coordination and collaboration between health systems and communities.

SSJP students in particular had a number of suggestions for increasing BWH's presence in its priority communities. These include:

- Reach out to young people as well as adults in their 40s and 50s who spend more time at home and in the community and hold a valuable understanding
- Hold community fairs, host or sponsor community events (e.g. sports events)
- Implement a mobile "clinic truck" that provides services in the neighborhoods (e.g. flu shots)
- Increase hospitals' presence in schools and develop new mentoring opportunities
- Utilize SSJP students as community liaisons and/or navigators for other youth in their communities; and
- Engage in more prevention efforts, specifically around community violence.

Prioritize Sustainable Investment in Communities

A strong theme throughout the key informant interviews was the need to improve, expand, and prioritize BWH's relationships with its target neighborhoods. These individuals highlighted the opportunity for a greater commitment to and investment in community-driven work by hospital leadership as well as an integration of community benefit work into BWH's strategic planning efforts. Key informants also suggested inviting community members to actively participate in the decision-making and planning processes of BWH's community-based work.

In the key informant interviews, some advocated for an increase in resources and staff to address the ongoing community health needs, including CHWs, social workers, community resource specialists, trained lay people, among others. In addition, interviewees recommended increasing the presence of the CCHHE's work throughout the BWH institution. These interviewees underscored the importance of engaging and partnering with other BWH departments to increase the presence, scope and shared responsibility of the Center's work. Similarly, stakeholders specified the need to make hospital staff more universally aware of the hospital's commitment to its five priority neighborhoods.

Other Approaches

Meeting and interview participants provided a number of additional suggestions for how BWH can best serve its priority communities and improve the health and wellness of its residents. These approaches included the following:

- Start young and educate children on health literacy and the importance of prevention
- Develop inter-generational interventions and programs

- Implement cancer education and support groups
- Address violence and trauma in a comprehensive manner
- Consider ways to improve structural factors for residents, including housing and transportation
- Support families with children with disabilities
- Focus on a holistic approach to wellness (e.g. yoga, meditation)
- Consider partnerships with vocational organizations, housing authorities and tenant associations, and the Massachusetts Bay Transportation Authority (MBTA)
- Develop a forum at BWH for providers and professionals (e.g. nurses, physicians, CHWs, social workers, community resource specialists, etc.) dedicated to community health and health equity work.

OVERALL CONCLUSIONS AND SIGNIFICANT HEALTH ISSUES

On all major **social determinants of health**, residents of color in our priority neighborhoods experience greater poverty, unemployment, lower educational attainment and greater economic vulnerability. The association of these social and economic challenges with poorer health outcomes makes it imperative for programs and systemic approaches that provide a pathway to economic stability. The ever increasing cost of housing in Boston and unreliability of transportation were also noted as key issues for community members.

Interpersonal violence and trauma which disproportionately affect communities of color, was cited as a major concern in community meetings and among community stakeholders. Residents of our priority neighborhoods described short and long-term impacts of violence including increased stress and persistent feelings of anxiety, safety fears that greatly limited their free movement in the community (including outdoor physical activity), negative impacts on community cohesion and significant fears for children in the community and their future.

Behavioral health issues emerged as key issues facing BWH's priority neighborhoods. The availability, cost and cultural accessibility of mental health services were cited as challenges for community members needing support. Dealing with stigma was also noted and the need for trust in those providing the support. This is enhanced when caregivers have a deep cultural understanding or shared language with those seeking support. Community members and interviewees also cited the need for more accessible and affordable treatment for substance use disorders. With behavioral health issues, it was noted that failure to provide support and treatment results in more entrenched problems (including overdose risk), impacts community safety and also results in challenges in treating other medical conditions, as untreated behavioral health challenges make it very difficult to implement a care plan for other health conditions.

Significant health inequities persist across priority neighborhoods and disproportionately impact communities of color in our neighborhoods across all health conditions examined in the quantitative data including chronic disease and mortality, reproductive and sexual health and obesity. While efforts should continue to address specific health conditions, the systemic nature of these inequities necessitates a wider approach to have sustained impact. A racial equity 'lens' is key to understanding and working in partnership with communities on these issues.

Although the rate of uninsured residents in Massachusetts is at historically low levels, **models of care that are responsive to the needs of underserved communities** are an important area for development. The role and contribution of community health workers are key in this effort. Low income residents also face other access issues including transportation barriers and the potential negative impact of policy changes in 2016/17 to the Health Safety Net and MassHealth plan enrollment.

Community residents and stakeholders underscored the importance of working in **partnership with communities by supporting existing community assets and efforts**, focusing on partnership and collaboration and increasing the hospital’s presence “on the ground” in communities, and prioritizing sustainable investment in communities.

STRATEGIES AND IMPLEMENTATION PLAN

THE HEALTH EQUITY IMPERATIVE

The imperative to address inequities in health continues to drive BWH's community health work. As a leading healthcare institution, we are responsive to the changes in the healthcare environment taking place at the local, state, and national levels, and ensure these changes inform our policies and practice. We also understand the urgency to address the health inequities in Boston that are particularly evident in our priority communities. Our Implementation Plan has been developed with a context of a rapidly changing healthcare landscape that prioritizes Population Health Management (PHM) as a strategy to meet national standards and fulfill its commitment to improving care and reducing healthcare costs. At BWH, the implementation of the Patient-Centered Medical Home and the Integrated Care Management Program are two examples of PHM in primary care.

CRITERIA FOR PRIORITIZATION

The five priority areas selected were based on: 1) community need 2) potential for impact 3) community interest, will and readiness, 4) available resources; and 5) institutional readiness.

ISSUES NOT ADDRESSING

For the majority issues raised in this report, we have identified implementation plan actions. In the area of the high cost of housing, however, resources and available expertise, limit our capacity to respond directly to this issue. We will, however, continue to monitor this issue and contribute a healthcare perspective to the City-wide dialogue on this issue as described in our plan.

IMPLEMENTATION PLAN

Priority 1	Interpersonal Violence and Trauma Address the public health issue of interpersonal violence in our communities
Objective	Provide an integrated and effective response to those experiencing interpersonal violence and build system capacity to provide trauma informed care
Strategies	<p>1.1.1 Interpersonal Violence</p> <ul style="list-style-type: none"> • Provide advocacy, safety planning and supportive counseling for patients who experience interpersonal violence (domestic violence and community violence) • Offer free and confidential advocacy services to the wider community through a domestic violence advocate based at a community site • Provide direct intervention to patients who are impacted by sexual violence and human trafficking • Collaborate with key community partners to offer supportive violence prevention education to young people in high risk environments • Coordinate and collaborate with the City of Boston and local hospitals on issues of interpersonal violence prevention and intervention • Develop and implement strategies to further integrate the BWH response with the City of Boston Streetworker program • Develop and implement a hospital wide policy on interpersonal violence inclusive of domestic, sexual, community violence and human trafficking <p>1.1.2 Trauma Informed Care (TIC)</p> <ul style="list-style-type: none"> • In collaboration with the Partners TIC network, provide learning opportunities for BWHC staff to develop awareness, skills and confidence in providing trauma informed care • Develop and implement an effective hospital-wide policy on the provision of trauma informed care

Priority 2	Access to Healthcare Strengthen access for community members to enable improved health outcomes
Objective	Address the barriers that hinder access to care for low income patients and community members.
	<p>2.1.1 Utilize Certified Application Counselors (Financial Counselors) to Improve Patient Access</p> <p>2.1.2 Supporting and Utilizing Community Health Workers (CHWs)</p> <ul style="list-style-type: none"> • Provide structured opportunities to increase communication among existing community health workers, patient navigators and community resource specialists at BWH to identify shared needs and resources and inform community health strategy • Share best practices of community health workers within the BWH community to increase understanding of the benefits of CHWs in the delivery of culturally responsive care • Identify next steps in assessing opportunities and potential resources for community health workers in selected clinical areas • Assess opportunities to engage CHWs and other staff in ‘place-based’ approaches with residents in a specific geographical area within our priority communities <p>2.1.3 Enhance Structures to Incorporate Patient and Community Input</p> <ul style="list-style-type: none"> • Establish a community advisory structure that builds upon and extends our existing networks, and recruit members with strong community experience and connection to inform hospital programs and priorities in priority neighborhoods • Expand community representation on BWH Patient Advisory Councils
Priority 3	Behavioral Health Develop an integrated and culturally responsive system of assessment, care and referral for behavioral health needs
Objective	Strengthen our response to mental health and substance use disorders and support innovative community models
Strategies	<p>3.1.1 Support Innovative Community Efforts to Promote Community Psychological Wellness</p> <ul style="list-style-type: none"> • Provide Health Equity Grants to community based organizations to support innovative models to: <ul style="list-style-type: none"> ○ Build support networks to strengthen the conditions of community psychological wellness

	<ul style="list-style-type: none"> ○ Implement culturally and linguistically responsive models to assist community members to reduce and manage stress
	<p>3.1.2 Integrated Behavioral Health, Wellness and Primary Care</p> <ul style="list-style-type: none"> ● Expansion of the Patient Centered Medical Home model across primary care to provide coordinated care delivery to encourage patient engagement in decision making and self management ● Implement a Collaborative Care Model in Primary Care for screening and care for patients who have depression and/or anxiety ● Explore expansion of health promotion activities (support groups, yoga, fitness, etc) in clinical settings or within partnering organizations to address sadness, social isolation, trauma, depression and other behavioral health needs ● Continue to provide a self help group meeting space for community members with substance use disorders at Brookside CHC
	<p>3.1.3 Comprehensive Opioid Response</p> <ul style="list-style-type: none"> ● Continue and explore expansion of community health center based substance abuse treatment ● Continue opioid intervention B-CORE: The Brigham Comprehensive Opioid Response and Education Program which includes a senior level Executive Committee, a Prescribing Task Force and an Addiction Task Force ● Work with the Partners Clinical Opioid Task Force to integrate measures and data collection ● Provide patients and employees a “MedSafe” drop-off location for unwanted or expired medications ● Dispense nasal Narcan to patients who request this life-saving medication that can stop or reverse the effects of an opioid overdose
Priority 4	Advance Health Equity within BWH and Our Community
Objective	Enhance, strengthen and resource systems and structures within BWH to promote health equity and improve health outcomes for the communities we serve

Strategies	<p>4.1.1 Collect Data on Health Inequities</p> <ul style="list-style-type: none"> • Collect and share data on significant health inequities, populations most affected and intersectional responses with the BWH community and community members and organizations • Develop a plan for moving forward on all the steps for the American Hospital Association #123forEquity Pledge to eliminate health care disparities • Explore the feasibility of incorporating standardized screening tools into eCare for assessing the health-related social needs of patients
	<p>4.1.2 Foster a Culture of Collaborative Learning and Advancement</p> <ul style="list-style-type: none"> • Identify interest and seek to establish a BWH learning community for those engaged or interested in health equity research and community informed practice • Participate in BWH innovation efforts and identify strategies to integrate health equity into those efforts • Collaborate across BWH departments on organizational efforts to advance equity, diversity and inclusion • Communicate and share experiences with other health systems also seeking to strengthen institutional commitment and expertise to advance health equity
	<p>4.1.3 Interventions to Address Identified areas of Health Inequity</p> <p><u>Cancer</u></p> <ul style="list-style-type: none"> • Provide patient navigation support for colorectal cancer screening targeted to patients at BWH community health centers • Leverage expertise at Dana Farber Cancer Institute (DFCI) and BWH to improve health and well-being of women of color cancer survivors • Provide financial resources to low income women with breast cancer for costs of treatment not covered by insurance <p><u>Birth Outcomes</u></p> <ul style="list-style-type: none"> • Continue to address the social and medical needs of pregnant women by offering comprehensive programs including the Stronger Generations Case Manager Program, the Centering Pregnancy Program and the Midwifery Program <p><u>Additional Community Health Equity Interventions</u></p> <ul style="list-style-type: none"> • Provide Health Equity Grants to community based organizations to implement programs that engage with residents to develop practical strategies to improve health outcomes for communities of color

	<ul style="list-style-type: none"> • Identify how our community approach can strengthen the health protective factors of community cohesion and resilience in partnership with other institutions, organizations and community members • Establish an annual BWH ‘health equity champions’ award where community members working to advance health equity can get a contribution towards their efforts and are recognized for their commitment and skill
	<p>4.1.4 Advance Racial Equity in our Health System and in our Communities</p> <ul style="list-style-type: none"> • Continue racial equity training and advocacy work based at Southern Jamaica Plain Health Center and identify opportunities and potential resources to further advance these efforts • Participate in the Boston Alliance for Racial Equity and continue to work with government partners and health and community partners to advance racial equity • Support community-based efforts through the BWH Health Equity grants and use evaluation results to inform future strategy and resource allocation • Look at potential application of the Racial Equity Impact Assessment tool within our health care environment and in our community efforts
Priority 5	<p>Social Determinants of Health (Employment, Education, Economic Stability, Housing, Transportation) Contribute proactively to build the community conditions for improved health outcomes, health system access and full civic engagement</p>
Objective	<p>Develop interventions and integrated solutions and partnerships that address the social and environmental factors impacting individual and community health</p>
Strategies	<p>5.1.1 Employment, Education and Economic Stability <u>Employment</u></p> <ul style="list-style-type: none"> • Provide youth employment and mentoring opportunities for Boston Public School students and a pathway for a skilled and diverse health care workforce and communicate evaluation results • Develop a resource to share best practices on youth employment with other employers and stakeholders

	<ul style="list-style-type: none"> • Provide community residents with employment and career counseling, referrals to job skills development programs and facilitate job interviews of qualified community residents • Pilot and evaluate a CHC based intervention that incorporates referral and participation in job training and support from a career center as part of the care plan • Support Jamaica Plain Neighborhood Development Corporation to establish a youth employment program focused on out of school youth <p><u>Education</u></p> <ul style="list-style-type: none"> • Enhance literacy, science skills development and career exploration by programs that partner with employee volunteers with students in Mission Hill elementary and middle schools • Provide college scholarship support to graduates of our Student Success Jobs program and provide support and guidance to encourage their success in college <p><u>Economic Stability</u></p> <ul style="list-style-type: none"> • Provide job skill development as well as educational and employment opportunities for pregnant and parenting young people to enable family economic stability and self-sufficiency • Continue to monitor the impacts of poverty, inequity and housing affordability for neighborhood residents and contribute to the city- wide dialogue and advocacy on its impact • Consider opportunities for ‘two generation’ approaches in our community efforts (benefiting parents/caregivers and their children) and discuss these with CHCs and local pediatric providers
	<p>5.1.2 Transportation</p> <ul style="list-style-type: none"> • Share findings from the Fair Public Transportation Report: Community Health Center Directors Roundtable • Seek to further understand transportation barriers for low income patients and identify ways to improve transportation to facilitate health care access • Continue to provide CharlieCards and cab vouchers to low income women through the Perinatal Transportation Assistance Program to increase their access to care and explore other cost effective transportation options
	<p>5.1.3 Partnerships for addressing health-related social needs</p> <ul style="list-style-type: none"> • Explore opportunities for partnerships with social service agencies to strengthen our response to the health-related social needs of patients

APPENDICES

APPENDIX A: Community Meeting Question Guide

Qualitative Data Collection Questions for COBTH Hospitals

2016 Community Health Needs Assessments

Final Version

Background

The Introduction and questions below are to be used as the ‘core set’ of questions for the neighborhood discussion/focus groups and community meetings that are being conducted to inform the 2016 Community Health Needs Assessments (CHNAs) of several of the CoBTH hospitals.

Verbal Introduction (this will assist in framing the discussion questions below)

When our hospitals did their needs assessments a few years ago, community members identified several things that impact their personal health and the health of their community. We heard that many social factors affect them such as employment and financial stress, community violence and lack of access to healthy, affordable food. In more recent assessments we have found more community members speaking about their emotional health, as well as difficulties with substance use. Health data in Boston also show high rates of conditions such as diabetes, asthma, cancer, obesity and heart disease. Community members expressed the importance of better coordination and integration of services, and responses that are relevant to their cultures. They voiced a strong desire to address these issues in equal partnership.

In our time together, we will be exploring four key questions about health and wellness issues for your community. Your input will inform our community health needs assessments and we will be taking notes of the discussion, but no individuals will be identified. We value everyone’s participation today/tonight in this discussion, and encourage you to share your thoughts openly so we can learn from you.

Questions for the group:

1. What do you see as the most pressing health and wellness issues in your community today? Would you say things have gotten better, worse or pretty much the same from a few years ago?
2. What resources and/or supports currently exist in your community to address barriers to health and wellness for residents? What is working well?
3. What would be helpful in your neighborhood to address the most pressing health and wellness issues affecting your community?
4. What is important for hospitals to know so we can work collaboratively with residents and local community organizations?

APPENDIX B: List of Key Stakeholders Interviewed

Internal (BWH) Stakeholders	
<ul style="list-style-type: none"> ▪ Jessica Dudley, MD 	BWPO Chief Medical Officer, Vice President Care Redesign
<ul style="list-style-type: none"> ▪ Audra Meadows, MD, MPH 	Dept of Obstetrics and Gynecology
<ul style="list-style-type: none"> ▪ Christin Price, MD 	Clinical Consultant, BWPO
<ul style="list-style-type: none"> ▪ Rose Kakoza, MD 	Assistant Medical Director of Operations, The Phyllis Jen Center for Primary Care
<ul style="list-style-type: none"> ▪ Jackie Somerville, RN 	Senior Vice President of Patient Care Services and Chief Nursing Officer, Brigham and Women's Hospital
<ul style="list-style-type: none"> ▪ Ali Salim, MD 	Division Chief, Trauma, Burns, and Surgical Critical Care
External Stakeholders	
<ul style="list-style-type: none"> ▪ Sharon Scott-Chandler, Esq., Executive Vice President ▪ Christina Sieber, Director of Institutional Advancement, Planning, and Grants 	ABCD: Action for Boston Community Development
<ul style="list-style-type: none"> ▪ Monica Valdes Lupi, JD, MPH ▪ Gerry Thomas, MPH, Director, Community Initiatives Bureau 	Boston Public Health Commission
<ul style="list-style-type: none"> ▪ S. Atyia Martin, PhD, Chief Resiliency Officer 	City of Boston
<ul style="list-style-type: none"> ▪ Myechia Minter-Jordan, MD, President and CEO 	Dimock Community Health Center
<ul style="list-style-type: none"> ▪ Carlene Pavlos, Director, Bureau of Community Health and Prevention 	Massachusetts Department of Public Health
<ul style="list-style-type: none"> ▪ Maura Pensak, Director, Client Services ▪ Molly Cain, Assistant Director, Operations 	Metropolitan Boston Housing Partnership

APPENDIX C: Internal Key Informant Interview Question Guide

Community Health Assessment One-on-One Guide for INTERNAL Key Informant Interviews

Introduction

- Thank you for taking the time to talk with us today and contributing to our community health assessment.
- In our time together, I will be asking about the current needs of BWH's priority neighborhoods, which are Dorchester, Jamaica Plain, Mattapan, Mission Hill, and Roxbury. We understand your knowledge of these specific neighborhoods may vary, and that is fine.
- We are also interested in hearing your perspective on opportunities for the hospital to address these community needs.
- In addition to interviews with BWH staff, we are analyzing community level health data and conducting interviews with external stakeholders and focus groups with residents of the neighborhoods mentioned above.

Background

1. I'd like to start by asking you to provide a brief overview of your primary role(s) and responsibilities at BWH.
2. As mentioned, the CHNA is focused on the neighborhoods of Dorchester, Jamaica Plain, Mattapan, Mission Hill, and Roxbury. What do you see as the key health issues in these communities, as well as the factors impacting overall health and well-being?
3. From your vantage point, what emerging community public health concerns are important for our priority neighborhoods to focus on in the near future?

Brigham and Women's Hospital Role

4. What role do you see Brigham and Women's Hospital playing in efforts to improve the health and well-being of individuals who live in our priority neighborhoods?
 - a. What is your perception of the community-based outreach and programming currently offered?
 - b. Are there BWH departments or staff that you believe should be specifically involved in future efforts?
5. What programs or partnerships do you think would help us better meet the needs of the individuals living in our priority neighborhoods?
6. We are always interested in learning from the experience of others. Are there any particularly impactful community health approaches that you would like us to be aware of (could be either happening at BWH or elsewhere)?
7. What additional information or feedback do you have to offer as we go through the process of understanding community health interests and needs at this point in time?

Closing

Thank you very much for your time. Our next steps will be to summarize the information we learn from each of the individuals we interview and prepare a final report and Implementation plan, which will be presented to the Board of Trustees in early summer.

APPENDIX D: External Key Informant Interview Question Guide

Community Health Assessment

One-on-One Guide for EXTERNAL Key Informant Interviews

Introduction

Thank you for taking the time to talk with me today and contributing to Brigham and Women's Hospital community health assessment. The purpose of this assessment is to gain a better understanding of the health issues of people who live and work in Boston, how those issues are currently being addressed, and your opinion about what more could be done to address them. Our ultimate goal for these interviews is to gather a broad range of input on community health issues that will help inform future programming and how they provide community-based services.

As you may or may not know, Brigham and Women's Hospital serves a broad range of individuals and communities, but has 5 specific neighborhoods in Boston where they have prioritized their community outreach and programming. These neighborhoods include: Dorchester, Jamaica Plain, Mattapan, Mission Hill, and Roxbury. Throughout this interview I will be asking some general questions about the health assets and needs for people who live in Boston, and then some specific questions about what is happening in these priority neighborhoods. Your knowledge of these specific neighborhoods may vary, so we will adjust our questions as we go along to make sure we are asking questions that are appropriate for you. At the conclusion of the interview we will write up summary notes. We will then synthesize the information we learn across all the people we interview and provide Brigham and Women's Hospital a summary report.

Do you have any questions about the purpose of the interview and how the information will be used?

Before we begin, I would like to request your permission to record our conversation today. The recording will help us develop a more accurate reflection of your input as we write up our notes. It will only be used by our team and not shared with anyone else. Would it be OK with you to record our conversation?

Background

1. I'd like to start by asking you provide a brief overview of your primary roles and responsibilities within your agency/institution.
2. What would you say are the major priorities that your agency/organization is focusing on to improve the health and well-being of the people your agency/organization serves?
 - a. How are you addressing these priority areas?
 - b. Who are you working in partnership with to address these issues? What other partners do you think are important to the success of your efforts?
 - c. What do you see as the strengths/challenges of addressing these issues to-date?

3. How successful do you think your agency's work in these areas has been in improving the health and well-being of people who live in Brigham and Women's Hospital's priority neighborhoods?
4. From your vantage point at [state/city government, CBO], what other emerging health or public health concerns are important for local communities, especially those in Boston, to focus on in the near future?

Role of Hospitals

5. I'd like for you to think about the role that hospitals might play in addressing some of the issues we have discussed. What do you think hospitals (or healthcare delivery systems more broadly) are doing now that contributes to community health (*may want to focus in on those issues we have been discussing*)?
 - a. What more do you think hospitals could do to support community health improvements (like those we have discussed)? In other words, what additional programs, services, investments, or roles could hospitals play in efforts to improve community health?

Questions Specific to Brigham and Women's Hospital

In this final set of questions, I'd like to focus specifically on Brigham and Women's Hospital and its community programs.

6. What role do you see Brigham and Women's Hospital playing in efforts to improve the health and well-being of individuals who live in their priority neighborhoods?
 - a. What is your perception of the community-based outreach and programming currently offered?
7. How might Brigham and Women's Hospital provide programs or partner with others to better meet the needs of the individuals who are living in their priority neighborhoods?
8. What additional information or feedback do you have to offer Brigham and Women's Hospital as they go through the process of understanding community health interests and needs at this point in time?

Closing

Thank you very much for your time. Our next steps will be to summarize the information we learn from each of the individuals we interview and prepare a report for Brigham and Women's Hospital. This information will be included as part of their overall needs assessment.