

Dana-Farber Cancer Institute Community Needs Assessment (CHNA) Executive Summary, 2020-2023



OVERALL EXECUTIVE SUMMARY

This Executive Summary is intended to satisfy the Community Health Needs Assessment report requirement under Internal Revenue Code Section 501(r) and in accordance with the provisions of the Patient Protection and Affordable Care Act.

BACKGROUND

Dana-Farber Cancer Institute (DFCI) is one of the world's leading cancer treatment and research centers. In addition to providing expert clinical care, DFCI is committed to educating the community and raising awareness about the importance of cancer prevention, outreach, screening, early detection, and clinical trials. To this end, DFCI's Community Benefits Office provides education and outreach across Boston and beyond, offers support services and resources, and conducts evidence-based interventions through its collaborative work in local neighborhoods as well as through its national and international public and professional education initiatives. The mission of DFCI's community benefits and outreach activities contributes to the larger goal of advancing diagnosis, care, treatment, cure, and prevention of cancer and related diseases.

In 2019 Dana Farber Cancer Institute (DFCI) and Boston Medical Center (BMC) collaborated to develop a Community Health Needs Assessment (CHNA). This CHNA also builds on information gathered for Boston's first large-scale collaborative city-wide Community Health Needs Assessment in which target neighborhoods such as Dorchester, Roxbury, Jamaica Plain, Mission Hill, and Mattapan were investigated thoroughly. The purpose of the CHNA is to advance community efforts and priority areas by: assessing cancer burden in the community as well as access to and availability of cancer-related services; identifying key areas of significant community need and vulnerable populations; examining the impact and role of social determinants of health; and facilitating the development of multi-year implementation strategies to guide the hospitals' community health initiatives and community investments. In addition to identifying broad health issues facing residents, the 2019 CHNA investigates the full continuum of cancer care; it explores different aspects of care from initial screening, to treatment, and culminates with considerations of survivorship.

The Boston CHNA-CHIP Collaborative is a new initiative that was created and launched by a number of stakeholders—community organizations, health centers, community development corporations, hospitals, and the Boston Public Health Commission. It aims to undertake the first large-scale collaborative city-wide Community Health Needs Assessment (Boston CHNA) and Community Health Improvement Planning (Boston CHIP) process.

The goals of the Boston CHNA are to:

- Systematically identify the health-related needs, strengths, and resources of communities to inform future planning,
- Understand the current health status of Boston overall and its sub-populations within their social context, and
- Meet regulatory requirements for a number of institutions, organizations, and agencies (e.g., IRS requirements for non-profit hospitals, PHAB for health departments).

To do so most effectively, DFCI, BMC and the Boston CHNA-CHIP Collaborative contracted with Health Resources in Action (HRIA), a Boston-based public health research firm, to facilitate the CHNA processes and produce this comprehensive report. DFCI and BMC were actively engaged in the city-wide

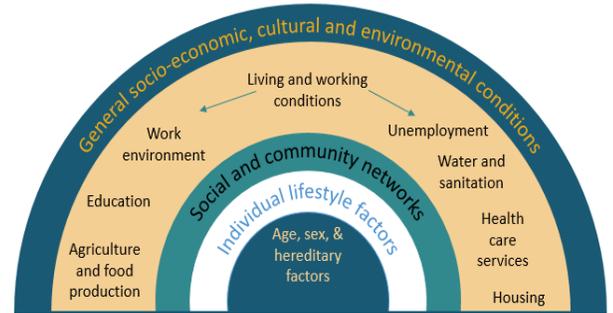
assessment, having representation on both the Steering and Operations Committees. This effort not only complies with the IRS and Massachusetts' Department of Public Health and the Attorney General's Office mandates for conducting community health needs assessments but aligns with DFCl's approach of utilizing data to inform the development of its initiatives and strengthening of collaborative partnerships.

METHODS

Health Equity Lens

The Boston CHNA and this cancer-specific CHNA focus on the social determinants of health using a health equity lens. The influences of race, ethnicity, income, and geography on health patterns are often intertwined. In the United States, social, economic, and political processes ascribe social status based on race and ethnicity, which may influence opportunities for educational and occupational advancement and housing options, two factors that profoundly affect health. Institutional racism, economic inequality, discriminatory policies, and historical oppression of specific groups are many of the root factors that drive the health inequities we see in the U.S. today.

Social Determinants of Health Framework



World Health Organization, Commission on the Social Determinants of Health, Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health, 2005.

This report describes health patterns for Boston overall and areas of need for particular population groups. Understanding factors that contribute to health patterns for these populations can facilitate the identification of data-informed and evidence-based strategies to provide all residents with the opportunity to live a healthy life. While data is presented specifically by race/ethnicity and socioeconomic factors (e.g. education, income and employment status etc.), this report is not able to analyze findings for groups who experience multiple challenging conditions which presumably is associated with even worst health outcomes.

Using the health equity lens, the data is analyzed to detect disparities. Thus, Black, Latino and Asian groups are each compared to White residents. The table findings are highlighted in yellow to identify areas of concern, i.e. incidence or mortality rates that are statistically significantly higher compared to Whites or screening rates that are statistically significantly lower than Whites. The cancer incidence and mortality tables also include a red star to denote the group with the highest rate for a particular condition, even if the difference is not statistically significant.

The report also includes data for many variables presented at the neighborhood level with significant differences compared to Boston overall. These significant neighborhood differences are noted with yellow highlighting in the summary tables and noted with an asterisk in the bar charts. The neighborhood summary tables presented throughout the report include DFCl's priority neighborhoods as well as neighborhoods with relatively high levels of concerning health conditions or cancer statistics. Information for all neighborhoods is available in the main text of the report.

Secondary Data

Secondary data for this report come from a variety of sources. The Massachusetts Department of Public Health provided much of the secondary data about cancer mortality, screening, and incidence. Additional data sources include the Boston Behavioral Risk Factor Surveillance Survey (BBRFSS), Youth

Risk Behavior Survey (YRBS), U.S. Census American Community Survey (ACS), vital records, and Acute Hospital Case Mix Database from the Center for Health Information and Analysis, among others. The Research and Evaluation Office at the Boston Public Health Commission conducted most of the data analysis for the secondary data in this report. Analyses are presented as frequencies (percentages) and rates throughout the report. Data from the ACS and surveillance systems, such as the BBRFSS, are presented with confidence intervals (or error bars in the figures), where possible.

Data is presented on all cancers overall, breast cancer, prostate cancer, colorectal cancer, liver cancer, and lung cancer. There is very limited data available for Head and Neck cancers and no data is presented on Cervical cancers as these types of cancer are relatively rare compared to other cancers in Massachusetts. The MA cancer registry does not disclose disease rates in instances of small numbers.

It is often difficult to know whether apparent differences reflect true underlying distinctions between groups or just normal fluctuations of rates and numbers. This cancer CHNA includes statistical testing to determine if differences are statistically significantly different. Differences that are deemed significant reflected instances where there is a high level of confidence that there is in fact a true difference. For instance, Black men have a mortality rate of 49.8/100,000 due to prostate cancer compared to 19.1 among White men. This difference is large enough to conclude that Black men have a statistically significantly higher rate of death from prostate cancer compared to White men, and there is a very high level of confidence that this difference is real. In this report, tests for significance are noted in the table or graph notes (where $p < 0.05$, meaning there is only a five percent chance we would see these kinds of numbers if there was not a true difference), and the narrative uses the words “significant” or “significantly” to note statistically significant differences. While non-significant differences could be the beginning of a significant development or simply be limited by a small sample size, the significant differences deserve special attention as these are large enough discrepancies to reach the significance level.

Focus Groups and Key Informant Interviews

Focus groups with residents and key informant interviews were conducted to dive deeply into perceptions and experiences. Specifically, for the cancer-focused CHNA, eight focus groups were conducted between March-April 2019 in English, Spanish, and Chinese with cancer patients, survivors, and caregivers.

This report also includes data from thirteen focus groups conducted with community residents for the collaborative Boston CHNA. These focus groups were with specific underrepresented populations including low wage workers, LGTBQ youth at risk of being homeless, survivors of violence, public housing residents, and immigrant parents. Focus groups were conducted in English, Spanish, Haitian Creole, and Chinese. These discussions were not health topic-specific but delved more into the social and economic factors that impact their lives. Selected results from these focus groups are included in this report.

For this cancer-focused CHNA, seven key informant interviews were conducted with a variety of individuals from community-based organizations and hospitals including community advocates, cancer specialists, a primary care provider, and a patient navigator. Discussions explored participants’ perceptions of cancer and related services across the cancer continuum (prevention, screening, treatment, survivorship) and suggestions for future services and resources to address these issues.

This report includes data from 45 key informant interviews conducted for the collaborative Boston CHNA. These interviews were more general and explored interviewees' experiences addressing community needs and opportunities for future alignment, coordination, and expansion of services, initiatives, and policies. Interviewees represented a variety of organizations and sectors including public health, health care, housing and homelessness, transportation, community development, faith, education, public safety, environmental justice, government, workforce development, social services, food insecurity, business organizational staff that work with specific population such as youth, seniors, disabled, LGBTQ, and immigrants.

In addition, this report also includes qualitative information collected by the Boston Public Health Commission (BPHC) between July 2018 and April 2019 as part of a study on prostate cancer. BPHC conducted six focus groups with African American and Caribbean American men ages 40-70 and influencers of these men (male or female). BPHC also conducted six key informant interviews with members of the community who have insights into men's health care practices. The summary themes from this research were shared with HRiA and incorporated into this report.

Community Survey

A community survey was administered in February to March 2019 for the collaborative Boston CHNA. The survey focused on a range of issues related to the social determinants of health, community perceptions, and access to care. The survey was administered online and via hard copy in seven languages (English, Spanish, Portuguese, Haitian Creole, Chinese, Vietnamese, and Arabic). The survey utilized a convenience sample, but extensive outreach was conducted by Collaborative members to garner a sample that reflected Boston demographics. The survey was completed by 2,404 Boston residents. Significance testing to identify differences by sub-group were conducted on these data and are noted in the table or graph notes; the narrative uses the words "significant" or "significantly" to note where statistically significant differences exist.

Data Limitations

Several limitations related to these data should be acknowledged. A number of secondary data sources were drawn upon for this report. Although all the sources used for this purpose are considered highly credible, sources may use different methods and assumptions when conducting analyses (e.g., different questions to identify race/ethnicity; different boundaries for neighborhoods). There is also often a time lag from the time of data collection to data availability. Some data are not available by specific population groups or at a more granular geographic level due to small sub-sample sizes. For example, while incidence change data over time is presented by sex and by race/ethnicity, this data over time is not reported separately by age groups. Mortality change data over time is shown separately for those under age 65, but is not presented separately for additional age groups, nor by sex or race/ethnicity. In some cases, data from multiple years may have been aggregated to allow for data estimates at a more granular level or among specific groups. Further, it should be noted that some indicators are not comparable year to year.

For the Boston CHNA survey, while strong efforts were made to conduct broad outreach, a convenience sample was used for the community survey conducted for the Boston CHNA. A convenience sample is a type of non-probability sampling; thus, there is potential selection bias in who participated, and results cannot necessarily be generalized to the larger population.

Throughout this report, comparisons are made to findings from the previous 2016 CHNA conducted for DFCI. It is important to note that the methodologies related to focus groups differ across these two

reports. Eight focus groups with cancer patients, survivors, and caregivers in English, Spanish, and Chinese were conducted for this 2019 CHNA. In 2016, three focus groups were conducted, two with cancer survivors (one conducted in Spanish and one in English) and one with community members from specific neighborhoods. Thus, comparisons of themes from the 2016 report are made sparingly, and results should be interpreted with caution.

Priority Neighborhoods: Consistent with the previous CHNA, this effort focused on Dana-Farber’s priority neighborhoods for community benefits work – Roxbury, Mission Hill, Dorchester, Mattapan, and Jamaica Plain – which are some of Boston’s most diverse communities. Despite its statewide reach and services provided through our satellite operations in Weymouth, Allston/Brighton, and Milford, Dana-Farber’s prioritization of these five neighborhoods within its local service area reflects a commitment to reducing the health disparities in cancer care and improving the overall health and well-being of neighborhood residents.



Figure 1: Map of the City of Boston highlighting Dana-Farber’s Priority Neighborhoods for Community Benefits work and Dana-Farber’s location in the Longwood Medical Area.

POPULATION OVERVIEW

Overall, Boston is a young city, with about one third of residents under the age of 24, that continues to experience population growth. Boston is a diverse city with 23% of residents identifying as Black, nearly 20% identifying as Latino, and nearly 10% identifying as Asian. Among DFCI’s priority neighborhoods of Roxbury, Dorchester, and Mattapan, between 40-73% of residents identify as Black, a substantially greater proportion compared to Boston. In East Boston and Roxbury, 30%-57% of residents identify as Latino, while 22%-32% of downtown and Allston residents identify as Asian.

Overall, Boston is a highly educated city with nearly half of adults ages 25 years old or older holding a college degree or more. However, there are stark differences by race/ethnicity and by neighborhood. Nearly seven in ten White residents hold a college degree, while only two in ten Black and Latino residents do. By neighborhood, East Boston and Roxbury have a greater proportion of residents who do not have a high school diploma compared to Boston overall.

SOCIAL AND ECONOMIC CONTEXT

Income and Financial Security

Across all indicators of income and financial security, there are substantial differences across Boston neighborhoods and racial and ethnic groups, with very high and very low incomes. The median household income in Boston is \$62,021 but ranges from a \$27,721 in Roxbury to \$150,678 in South Boston Waterfront. Median household income is highest for White residents and lowest for Latino residents; median value of total assets and net wealth for White residents far exceeds that for any other racial/ethnic group. Poverty and economic instability were key themes in focus groups and interviews, with participants sharing the challenges of meeting basic needs and the negative effects this has on personal health. Roxbury, Fenway, and Mission Hill had the highest proportion of households with incomes below \$25,000, as well as the highest percentage of residents living below the federal poverty level in 2013-2017.

Employment and Workforce

Boston, like much of the rest of the nation, has experienced an economic upturn in recent years. In 2018, Boston's unemployment rate was 3.0%, according to the Bureau of Labor Statistics; however, when examining unemployment data over the past several years (2013-2017), there are differences by neighborhood. Unemployment during this period was 7.3%, but over 10% in the neighborhoods of Roxbury, Longwood, Fenway, Mattapan, and Mission Hill.

Housing

The high and rising cost of housing in Boston was a main theme that emerged in focus group and interview discussions, as it did in 2016. The majority of housing units across Boston are renter-occupied (65%). More than half of those in renter-occupied units are housing cost-burdened, meaning they spend more than 30% of their income on housing. This percentage was significantly higher across several neighborhoods compared to the Boston overall average, including Fenway, East Boston, and Jamaica Plain. Additional pressures include gentrification, long wait lists for housing assistance, and for some, housing discrimination. There was general consensus across conversations that more affordable housing is needed in Boston.

Transportation

While many focus group participants perceived improvements in transportation recently, others expressed concern about cost, timeliness, and accessibility of public transportation, especially for the elderly, immigrants, and residents of neighborhoods with limited access to transportation. Additionally, transportation issues were largely noted in Mattapan as there is significantly less access to public transit options.

Social Environment and Discrimination

Focus group and interview participants identified examples of strong social networks in Boston. While community survey respondents reported strong community cohesion and civic engagement, they also mentioned a decline in community social ties, brought on by lack of time and generational differences as well as gentrification. CHNA community survey results and conversations in focus groups indicate that subtle and overt discrimination is an issue in Boston.

Violence and Trauma

“Most [residents] rely on public transportation and it is difficult when the signs are not in their language. They may not understand announcements about delays or emergencies, and it makes them feel insecure about how to navigate.”—Key informant interviewee

Many focus group participants expressed concerns about personal safety in their communities, with persons of color and children noted to be disproportionately affected. Approximately half of Boston CHNA survey respondents from Roxbury, Mattapan, and Dorchester described their neighborhood as unsafe or extremely unsafe, a prevalence that was more than double that observed across Boston. Intimate partner violence was also mentioned in focus groups and interviews, with women of color and non-English speaking immigrants identified as particularly vulnerable populations.

CANCER PREVENTION: PERCEPTIONS AND SURVEILLANCE DATA

Perceptions of Cancer and Other Health Issues

When asked about top health concerns in the city, focus group participants and interviewees participating in the Boston CHNA identified mental health and substance use, trauma, community violence, chronic diseases, healthy aging, and environmental health concerns. One in five people completing the Boston CHNA community survey identified cancer as one of their top five health concerns. Additionally, a high proportion of survey respondents identified factors that are linked to cancer—smoking, obesity, and environmental conditions—as top health concerns in the community.

For the cancer-specific assessment, cancer patients and survivors participating in focus groups had mixed perspectives about the extent to which people in their communities were aware of and understood cancer as a health issue, with some reporting high awareness and others indicating it is low. Fear of cancer and reluctance to speak about cancer was identified as one reason for low awareness. Rising rates of cancer particularly among young people and disparities in cancer incidence and mortality for racial and ethnic minorities were also highlighted by numerous interviewees and focus group members.

“Denial is still so deep. Cancer still has a hold on communities of color, that it’s a shameful thing. You hide this diagnosis. Don’t show your face, don’t talk openly, don’t wear anything that identifies you as a survivor. So the shock and the shame stops people from talking about it, even in their family.”—Focus group participant

CANCER PREVENTION

Risk factors for cancer include smoking, alcohol misuse, obesity, unhealthy eating behaviors, and sedentary lifestyles. These behaviors are strongly influenced by one’s neighborhood environment and upstream factors such as employment status and educational opportunities. Quantitative data about these behaviors show some positive trends but also some areas for attention, especially when differences are examined across neighborhoods and socioeconomic variables.

Tables 1-2 on the following pages provide a brief overview of key social determinants across neighborhoods, as well as neighborhood differences in behavioral risk factors associated with cancer. Bright yellow highlighting indicates statistically significant neighborhood differences compared to Boston overall, while light yellow highlighting indicates large neighborhood differences for variables that were not tested for statistical differences.

Table 1: Social Determinants of Health According to Neighborhood

	Boston	Roxbury	E. Boston	Mattapan	Fenway	Mission Hill	Dorchester	JP	Hyde Park	S. Boston	S. End	Allston/Brighton
Social Determinants of Health												
< High school diploma (2013-2017)	13.9%	24.3%	31.4%	17.6%	6.5%	15.6%	19.6%	7.9%	11.8%	9.2%	11.5%	6.8-8.7%
Living below FPL (2013-2017)	20.5%	33.9%	20.3%	20.7%	40.8%	40.4	23.9%	15.5%	11.3%	5.5%	19.6%	19.9-31.1%
> 30% of income spent on renter-occupied housing (2013-2017)	53%	53%	59%	54.2%	59.1%	ND	36.4-47%	57.6%	50.3%	60%	51.4%	52.8%
Residents 16+ unemployed (2013-2017)	7.30%	12.9%	6.6%	11.2%	11.4%	10.2%	10.4%	4.7%	8%	5%	5.5%	4.9-6.9%
Consider neighborhood unsafe or extremely unsafe (2019)	25%	50%	27.3%	49%	ND	ND	45%	18.1%	14.8%	ND	21.8%	3.1%
Limited grocery store access (2019)		X	X	X			X	X	X			

Yellow indicates a statistically significant difference when compared to the overall Boston percentages

Light yellow indicates substantially higher percentages compared to Boston overall, although significance testing was not conducted.

ND: no data was collected on this population

DATA SOURCE: U.S. Census, American Community Survey 5-Year Estimates, as analyzed by BPDA Research Division, as reported by Boston Planning and Development Agency, BPDA Research Division, Boston in Context: Neighborhoods 2019, 2013-2017

Importantly, the priority neighborhoods of Dorchester, Roxbury, and Mattapan appear to be disproportionately burdened by the social determinants of health and certain behavioral risk factors, such as smoking and less than daily fruit and vegetable consumption. Among Boston CHNA participants, nearly 50% of residents from Dorchester, Mattapan and Roxbury described their neighborhoods as unsafe or extremely unsafe; this reflects a doubling of the percent who reported this perception across Boston overall. Furthermore, the neighborhoods of Dorchester, East, Boston, Roxbury, Mattapan, Hyde Park and JP are all characterized by sizable geographic areas with limited access to grocery stores. It is important to consider the influence of these factors on healthy behaviors such as physical activity and healthy eating. In addition, only 58% of Fenway residents and 71% of East Boston residents report having a primary care provider compared to 80.1% in Boston overall, which may signify less access to medical care in these areas.

Health-Related Behaviors		Boston	Dorchester	E. Boston	Roxbury	Fenway	Hyde Park	Mattapan	S. Boston	S. End	Allston/ Brighton	JP
	Adult Smoking	16.5%	21.9%	17.1%	20.6%	13.1%	15.8%	19.3%	20%	22.2%	17.0%	12.7%
	Have Regular PCP	80.1%	81.7-83.1%	71.4%	81%	58%	89.1%	84.1%	83.3%	75.7%	70.1%	84.3%
	Adult < 1 Daily Fruit 2	39.3%	44-45%	43.2%	41.5%	38.4%	40%	41.8%	44.3%	36.6%	43.7%	32.2%
	Adult <1 Daily Vegetable	24.7%	29%	26.3%	35.1%	19.6%	21.3%	28.5%	31.1%	24.6%	21.9%	14.7%
	Overweight/ Obesity	56.8%	63-65%	62.9%	57.9%	37%	64.8%	71.1%	57.3%	50.7%	49.7%	50.4%

Yellow indicates a statistically significant difference from the overall Boston percentages

ND: No data collected on this population

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined

Table 3 below describes these health behaviors across racial and ethnic groups and socioeconomic factors.

Health-Related Behaviors		All	White	Asian	Latino	Black	Men	< High School	LGBTQ	<\$25,000	Not Employed
	Adult Cigarette Smoking	16.5%	16.5%	12.4%	13.9%	19.3%	20.2%	26.5%	22.4%	26.5%	30.8%
	Adult Binge Drinking	24.6%	32.2%	10.7%	20.9%	16.2%	29.8%	14.3%	30.5%	18.5%	21.6%
	Adult Obesity Overweight	56.8%	51.3%	34.4%	68.1%	68.4%	61.2%	69.9%	55.7%	61.9%	62.5%
	Adults Consuming <1 Fruit Daily	39.3%	34.7%	40.2%	45.7%	44.1%	42.0%	47.7%	40.1%	48.2%	41.9%
	Adults Consuming <1 Vegetable Daily	24.7%	20%	24.1%	29.1%	32.6%	28.1%	36.7%	25.4%	31.9%	27.3%

Yellow indicates a statistically significantly higher rate compared to comparison group. Asian, Latino and Black are compared to White; <High School Education is compared to some college or more, and income <\$25,000 is compared to ≥\$50,000

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined

Smoking

Boston has seen a statistically significant decrease in adult smoking in recent years, from 19% of adults in 2010 to 15% in 2017. However, nearly one in six Boston adults reported being a current smoker in 2017. This is a change from the trend reported in the 2016 CHNA, which noted that smoking rates had been steady at about 19% of the adult population. Nearly one in three unemployed adults smoke. LGBTQ respondents are more likely to be smokers than heterosexual/non-transgender respondents; and those with lower levels of education and lower levels of income are more likely to be smokers than their referent counterparts. Furthermore, Black residents are more likely to be current smokers than White residents (while Asian residents are less likely); Notably, the South End (which includes Chinatown), Dorchester, South Boston, and Roxbury all have significantly higher rates of smoking than Boston overall, with over 20% of their adult population reporting being a current smoker.

Alcohol Misuse

The percent of Boston adults reporting binge drinking (having 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women) has remained steady since 2010, with approximately one-quarter of Boston adult BRFSS respondents reporting this behavior. As in the 2016 CHNA, White adults are significantly more likely than adults from other racial/ethnic groups to report binge drinking. In addition, LGTBTQ adults, college-educated, higher income, and employed adults are significantly more likely to report binge drinking than their counterparts.

Obesity

Concerns related to obesity were frequently discussed among Boston CHNA focus group and interview participants. Numerous factors contribute to overweight and obesity according to participants, including lack of affordable healthy food and physical activity options, as well as low awareness about the importance of maintaining a healthy weight and how to do so. More than half of adults across Boston reported being classified as obese or overweight in 2013-2017. However, rates are even higher with certain population groups. Nearly seven in ten Black and Latino adults reported being obese or overweight, compared with five in ten White adults across Boston – a difference that was statistically significant. One third of Asian adults reported being obese or overweight, significantly lower than the prevalence for White adults. Older adults were significantly more likely than young adults to be classified as overweight or obese. The prevalence of obesity and overweight also follows a socioeconomic gradient, with a significantly higher percent of renters, residents with lower levels of educational attainment, and residents with lower income being obese or overweight compared to their counterparts. Variation in obesity rates are seen at the neighborhood level and is as high as 71% in Mattapan. In fact, the percent of adults in Mattapan, Hyde Park, Dorchester, West Roxbury, East Boston, and Roslindale who were overweight or obese was significantly higher than the prevalence of obesity in Boston overall.

Physical Activity and Healthy Eating

Limited access to affordable opportunities for physical activity was a common theme in discussions with residents conducted for the Boston CHNA. In 2013-2015, nearly 40% of Boston adults reported consuming less than one fruit per day and one quarter reported less than daily vegetable intake. A significantly higher proportion of adults who were Black, Latino, and male reported less than daily consumption of fruits and vegetables than their counterparts. As with patterns for obesity and overweight, adults with lower socioeconomic status and less than a high school diploma were more likely to report fruit and vegetable consumption on a less than daily basis. A higher percentage of adults in Dorchester reported low fruit and vegetable consumption while a lower percentage of adults in Jamaica Plain reported low fruit and vegetable consumption.

CANCER SCREENING

Screening Rates

The table below provides an overview of screening rates by various subgroups and highlights the groups with significantly lower screening rates compared to their counterparts.

	All	White	Asian	Latino	Black	<\$25,000	Not employed
Mammography	88.3%	87.3%	77.3%	93.0%	89.2%	88.5%	89.3%
Pap Smear	83.7%	88.5%	57.7%	83.3%	83.4%	77.3%	84.2%
Colonoscopy or sigmoidoscopy	64.5%	64.8%	49.7%	66.0%	68.5%	62.7%	54.8%

Yellow indicates statistically significantly lower rate compared to comparison group. Asian, Latino and Black are compared to White; income <\$25,000 is compared to ≥\$50,000

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined

Breast Cancer Screening

Nearly nine in ten women 50 to 74 years of age across Boston reported receiving a mammogram in the past two years, a rate higher than the HP2020 target of 81.1%. Latina women (93%) were significantly more likely to report receiving a mammogram in the past two years compared to White women. There was no significant difference across Boston neighborhoods in the percent of women who reported receiving a mammogram in the past two years.

Cervical Cancer Screening

In 2013-2017, 84% of Boston women (21-64 years of age) reported receiving a pap smear test in the past two years, a rate lower than the HP2020 target of 93%. Relative to their counterparts, a significantly lower proportion of Black (83%), Latina (83%) and a much lower proportion of Asian (58%) women reported receiving a pap smear recently than White women (86%). Additionally, renters (74%-84%), immigrants (64%-83%), women with a high school education (76%), women with incomes <\$50,000 (77%-85%) were significantly less likely than their counterparts of higher socioeconomic status to report receiving a pap smear in the past two years. Rates of cervical cancer screenings were significantly lower in the Fenway area than in Boston overall.

HPV

While cervical and rectal cancers have routine screening tests, no routine screening tests exist for other HPV-associated cancers, including anal, oropharyngeal, penile, vaginal, and vulvar cancers. This lack of available screening tests makes the HPV vaccine critically important for the prevention of HPV-associated cancers. In 2017, rates of HPV vaccine completion in Massachusetts were 67% among females and 64% among males. Although Massachusetts has higher HPV vaccination rates than the US, it still falls short of the Healthy People 2020 goal of 80% vaccination among eligible youth.

Colorectal Cancer Screening

In 2013-2017, only two-thirds (65%) of Boston adults 50 to 75 years of age reported ever receiving a colonoscopy or sigmoidoscopy. This is lower than the HP2020 target of 70.5%. Compared to their counterparts, a significantly lower proportion of Asian adults (50%), immigrants living in the US for less

than 10 years (37%), residents with incomes <\$25,000 (63%), and adults who were out of work (55%) reported receiving colon cancer screening. Data about colon cancer screenings across neighborhoods show that screening among adults 50 to 75 years of age was lowest in East Boston, a difference that was significantly lower than Boston overall in 2013-2017.

Lung Cancer Screening

Low-dose computed tomography (also called a low-dose CT scan, or LDCT) is the only recommended screening test for lung cancer. It has been shown to detect lung cancer at its earliest, most treatable stage, and is the only test that has been proven to reduce the risk of dying from lung cancer among those at high risk for the disease. New guidelines released by the U.S. Preventive Services Task Force in 2013 recommend yearly lung cancer screening with LDCT for individuals at high risk based on age and cumulative tobacco smoke exposure. This includes individuals between the ages of 55 and 80 who either currently smoke or have quit in the past 15 years and who have a smoking history of 30 or more “pack years.” A pack year is smoking an average of one pack of cigarettes per day for one year. Data regarding lung cancer screening in the US indicates that rates of recommended screening among those who meet the eligibility criteria are low. According to a study conducted by the Center for Disease Control and Prevention, only about 4.4% of adults who met the screening criteria reported receiving a low-dose CT scan. Although data regarding lung cancer screening rates is not included in this report, it is important to note that lung cancer screening, along with smoking cessation interventions, can substantially reduce the burden of lung cancer in both the nation and the greater Boston area.

Perceptions of Cancer Screening

The importance of screening was noted by most members of focus groups conducted for this CHNA. Many stated that their cancer was found during a routine screening. They also mentioned family history of cancer as a reason they stay current with their screenings. Rates for breast and cervical cancer screening were described as generally good, in part due to the fact that these have been prioritized nationally and numerous and accessible screening services were reported to exist. Interviewees and focus group members also reported that numerous programs and efforts exist to educate and connect residents to screening services, particularly those who are underserved. Hospital outreach efforts—including mobile vans—were mentioned. Interviewees and focus group members also talked about the critical role played by primary care providers.

“Doctors only have a certain amount of time and you can’t rely on them to talk to patients about everything. But there does need to be more navigators available to help patients understand and explain.” – Focus group participant

Barriers to Accessing Screening Services

Focus group members and interviewees identified several barriers to getting screened including lack of awareness, discomfort and fear, inability to take time off work, and for a few, insurance and transportation issues. Health care professionals interviewed identified changing screening guidelines as barrier. These issues were also identified in the 2016 CHNA.

A prominent theme in conversations with interviewees was the importance of follow up after an abnormal screening result. Interviewees reported that for some patients, substantial care coordination and navigation is needed to ensure that patients are directed to and engage in further testing and care after an abnormal result. Challenges include knowing where to go for follow up, addressing other barriers (transportation, time off work, childcare), and navigating insurance.

HEALTH CARE UTILIZATION, CANCER INCIDENCE, AND MORTALITY

Use and Perceptions of the Health Care System

Boston is a city with numerous health care resources including hospitals, community health centers, urgent care, primary care providers, and specialists. Approximately eight in ten respondents to the BRFSS reporting having at least one person as their personal doctor. Asian and Latino residents were significantly less likely than White residents to indicate having one person as their personal doctor or health care provider. While focus group, interview, and survey participants participating in the Boston CHNA were positive about the quality and proximity of health care in their community, they still cited several concerns over access. Unfriendly, uninterested, or rushed health care providers and office staff in health care settings were also issues that focus group participants mentioned.

Experiences with Cancer Treatment

Overall, focus group members spoke more positively than negatively about their treatment experiences. Among those reporting a positive experience, participants most often spoke about the quality of care: they praised the team-based nature of their care, excellent communication from physicians, as well as ongoing communication from providers' offices to make and confirm appointments. The importance of trust and interpersonal rapport with physicians was mentioned by numerous respondents. The personal qualities of providers were frequently mentioned in the context of positive experiences including respect, a willingness to listen and explain, and timeliness.

Numerous respondents also praised social workers and patient navigators who helped them to manage the health care system and get connected to needed services. When asked about social and support services available during cancer care, most focus group members shared that they believed these were available, however, not all patients were aware of them. A few focus group members shared negative experiences with their cancer care. These comments related mainly to a lack of sensitivity about how they were told about their cancer. Lack of interpersonal rapport or perceived disrespect by providers were other themes associated with less positive cancer care experiences.

Challenges Accessing Cancer Treatment Services

Cancer patients, survivors and caregivers participating in focus groups, as well as interviewees, shared numerous challenges to accessing cancer treatment services. Cost, maintaining employment, transportation, and limited opportunities to participate in clinical trials were issues that rose to the top. Numerous cancer patients and survivors remarked that having cancer has depleted their resources. Cost challenges are compounded by the fact that cancer patients may be unable to work full time (or at all) during or even after treatment. Several respondents mentioned that transportation can be a challenge for cancer patients, a barrier also noted in 2016. However, increased use of transportation services (Uber Health and Lyft) by hospitals was seen as a step in a positive direction.

Numerous interviewees spoke about clinical trials, sharing their perception that these opportunities are limited, and patients of color are underrepresented. This was noted in the 2016 CHNA report as well. Language barriers and lack of cultural competency among providers as well as institutional racism were mentioned as challenges for patients of color and immigrants.

"I have no savings now. If my house hadn't appreciated, I wouldn't know what the future would hold. My house is my only asset. Everything else is gone."-Focus group participant

The importance of having support during cancer treatment was mentioned by many respondents. A prevalent theme was that of navigating the cancer care system. This was also a prominent area of discussion in the 2016 CHNA as well. Participants expressed concern about patients “getting lost” in the system and as a result, not getting the care that they need. Care coordination—where a care team collaborates to facilitate the appropriate delivery of health care services—was seen as a critical aspect of successful cancer care and outcomes. Cancer patients and survivors had differing experiences with care coordination both within and outside the health care system, with some receiving substantial support and others reporting that they did not receive any. Many recommended expansion of navigation services and more promotion of these services to ensure that all cancer patients can access them.

Cancer Incidence

In 2015, the overall cancer incidence rate in Boston was 492.5 per 100,000 residents. Overall cancer incidence rates for Asian (390.5 per 100,000) and Latino (349.4 per 100,000) residents in Boston were significantly lower than for White residents (546.7 per 100,000). Women have lower overall cancer rates than men. Data on cancer incidence by age group and neighborhood was not available for this report.

Cancer Incidence Over Time

Overall cancer incidence rates have declined significantly in Boston between 2001 and 2015, as have incidence rates for colorectal, lung, and prostate cancers. Incidence rates for liver cancer, by contrast, have risen in Boston. The following table examines cancer incidence rates over time by race/ethnicity and gender.

Table 5: Statistically Significant Changes in Cancer Incidence Over Time, by Sub-Group, 2001-2015								
	Asian Men	Asian Women	Latino Men	Latina Women	Black Men	Black Women	White Men	White Women
All Cancer	No change	↑	No change	No change	↓	↑	↓	↓
Breast	N/A	↑	N/A	No change	N/A	No change	N/A	No change
Colorectal	↓	No change	No change	No change	No change	↓	↓	↓
Liver	No change	No change	No change	No change	No change	No change	No change	↑
Lung	No change	No change	↑	No change	↓	No change	↓	No change
Prostate	↓	N/A	↓	N/A	↓	N/A	↓	N/A
Head and Neck	No change	No change	No change	No change	No change	No change	No change	No change

NOTES: GREEN arrow indicates statistically significant decrease over time; RED arrow indicates statistically significant increase over time; N/A indicates comparison is not applicable.

DATA SOURCE: Cancer registry, Massachusetts Department of Public Health

Between 2001-2015, incidence rates of colorectal and prostate cancer declined among Asian men, while overall cancer rates and breast cancer rates among Asian women increased. Among Latino men, prostate cancer rates declined but lung cancer incidence rates increased. Incidence rates of overall cancer, lung, and prostate cancer decreased among Black men. Among Black women, colorectal cancer rates declined but overall cancer rates increased. White men and women experienced declines in overall

cancer and colorectal cancer incidence rates between 2001 and 2015; additionally, incidence rates of lung and prostate cancer among White men declined over this time period, while incidence of liver cancer among White women increased.

The table below provides an overview of the differences by race/ethnicity and gender for cancer incidence during the 2013 to 2015 time period, followed by an overview of key findings. Significant differences compared to White residents are marked with yellow highlighting.

Table 6: Cancer Incidence for Boston Males by Race/Ethnicity, 2013-2015

Incidence by Cancer Per 100,000 residents 2013-2015		All Men	Asian Men	Latino Men	Black Men	White Men
	All Cancers 2015	545.1	390.5	432.8	558.1	593.5 ★
	Colorectal Cancer	47.5	38.9	37.4	60.5 ★	47.7
	Liver Cancer	18.8	32.5 ★	23.6	17.2	16.7
	Lung Cancer	75.1	95.7 ★	45.9	78.4	79.6
	Prostate Cancer	126.7	74.5	111.8	190 ★	110.8
	Head and Neck Cancers	24.7	26.5	25.3	29.0	34.2 ★

Yellow statistically significantly higher than White comparison group

★ indicate the highest incidence rate for each cancer type

DATA SOURCE: Cancer Registry, Massachusetts Department of Public Health

Data about different types of cancer reveal that Asian residents of Boston have higher rates of liver cancer than their White counterparts, with Asian men having higher rates than White men. However, Asian men have significantly lower rates of prostate and head and neck cancer than their White counterparts. Latino men have lower rates of cancer overall than their White counterparts as well as significantly lower rates of lung and head and neck cancers compared to White men. In general, Black residents of Boston have overall cancer rates similar to Whites. Black men, however, have significantly higher rates of colorectal and prostate cancer than White men.

Table 7: Cancer Incidence for Boston Females by Race/Ethnicity, 2013-2015

Incidence by Cancer Per 100,000 residents 2013-2015		All Women	Asian Women	Latina Women	Black Women	White Women
	All Cancers	461.2	375.8	298.5	512.8	518.8 ★
	Breast Cancer	132.7	80.3	90.0	140.1	160.1 ★
	Colorectal Cancer	35.9	26.2	24.5	45.5 ★	36.4
	Liver Cancer	6.5	10.1 ★	6.9	6.0	6.4
	Lung Cancer	57.5	42.0	20.5	54.0	75.7 ★
	Head and Neck Cancers	8.2	N/A	4.7	9.4	12.3 ★

★ indicates highest mortality group for cancer type

DATA SOURCE: Cancer Registry, Massachusetts Department of Public Health

The above table demonstrates differences in cancer incidence for women of Boston by race/ethnicity. Asian women have significantly lower rates of breast and lung cancer incidence than White women,

however, like their Asian male counterparts, they have a non-significantly higher incidence of liver cancer when compared to their White counterparts. Latina women have significantly lower rates of cancer overall as well as significantly lower rates of breast, lung, colorectal and head and neck cancers compared to their White counterparts.

Black residents of Boston have overall cancer incidence rates very similar to Whites. Black women have significantly lower incidence rates of breast, lung, and head and neck cancers than White women, and have non-significantly higher rates of colorectal cancer incidence. This 2013-2015 data describing a lower rate of new breast cancer cases among Black women compared to White women contrasts with the 2011-2012 data reported in the previous CHNA. The prior data showed very similar numbers between the two groups (131.3/100,000 for Black women and 133.4/100,000 for White women). Future data will help to illuminate whether over time the breast cancer incidence rate will continue to be significantly lower among Black women compared to White women.

Cancer Mortality

Cancer and heart disease are the leading causes of death in Boston and have remained so for the last six years. Cancer has been the leading cause of premature death (death before age 65) from 2011-2016. The overall cancer mortality rate in Boston was 160 per 100,000 residents in 2015-2017. This is consistent with the HP2020 target of 161.4 deaths per 100,000 population.

The CHNA compares the overall Boston mortality rates (not separated by gender) with that of Massachusetts and the United States. Two types of cancer have mortality rates above both the state and national rates. The prostate cancer mortality rate in Boston is higher than the state and national rates (24.5 vs. 18.7 and 19.2 respectively per 100,000). Similarly, the Boston mortality rate for liver cancer is higher than the state and national rates (9.2 vs. 6.5 for both state and national rates per 100,000).

Between 2011 and 2017 the overall cancer mortality rate in Boston declined significantly as did colorectal and lung cancer mortality rates, as described in Table 8 on the following page. Despite some progress, the mortality rates of other cancers have not improved and remain unchanged over this six-year period. Additionally, premature mortality rates for breast, liver, prostate and lung cancer (for those under age 65) have not significantly changed. This reality underscores the importance of community outreach to raise awareness, promote preventative behaviors, and encourage early screening particularly given the unchanged treatment outcomes.

Table 8: Statistically Significant Changes in Cancer Mortality Over Time for 2011-2017 in Boston, MA		
	Mortality	Premature Mortality <65 years
All Cancers	↓	↓
Breast Cancer	No change	No change
Colorectal Cancer	↓	↓
Liver Cancer	No change	No change
Lung Cancer	↓	No change
Prostate Cancer	No change	No change

NOTES: GREEN arrow indicates statistically significant decrease over time; RED arrow indicates statistically significant increase over time; N/A indicates comparison is not applicable.
 DATA SOURCE: Cancer Registry, Massachusetts Department of Public Health

The following tables provide an overview of significant differences in cancer mortality by gender and race/ethnicity, followed by explanations of the key findings associated with each population.

Table 9: Cancer Mortality for Boston Males by Race/Ethnicity						
Mortality Per 100,000 2015-2017		All Men	Asian Men	Latino Men	Black Men	White Men
	All Cancers	160	157.6	149.4	234.4 ★	197.0
	All Cancers <65 years	46.3	57.7	36.7	68.2 ★	45.1
	All Colorectal Cancer	12.1	11.3	8.3	23.0 ★	16.7
	Colorectal Cancer <65 years	4.5	NA	NA	9.5 ★	5
	All Liver Cancer	9.2	12.6	15.7	17.7 ★	12.8
	Liver cancer <65 years	3.8	10	5.3	11 ★	4.1
	All Lung cancer	36.5	58.9 ★	32.2	41	47.6
	Lung cancer <65 years	10.0	12.8	7.0	15.2 ★	12.8
	All Prostate Cancer	24.5	NA	26.8	49.8 ★	19.1
	Prostate cancer <65 years	2.0	NA	NA	3.7 ★	1.6

★ highest mortality group for cancer type.

Yellow statistically significantly higher than White comparison group

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 combined

Black men in Boston have the highest mortality rates for overall cancers, premature overall cancers, colorectal cancer, premature colorectal cancer, liver cancer, premature liver cancer, premature lung cancer, prostate cancer and premature prostate cancer as noted by the red star in almost every category for Black men. Compared to White men, the mortality rate for Black men is statistically significantly higher for all cancers, premature all cancers, premature colorectal cancer, premature liver cancer, prostate cancer and premature prostate cancer as noted with yellow highlighting.

Asian men experience significantly higher rates of premature mortality due to liver cancer relative to White men. Asian men also have the highest lung cancer mortality across the groups, which is the single highest mortality rate for any specific type of cancer. In contrast, Asian men have significantly lower rates of overall mortality due to cancer than White men.

Latino men in Boston experience significantly lower rates of overall cancer mortality due to lung cancer than White men in the city.

Table 10: Cancer Mortality for Boston Females by Race/Ethnicity

Mortality Per 100,000 2015-2017		All Women	Asian Women	Latina Women	Black Women	White Women
	All Cancers	138.5	96.9	84.8	151.2	155.3 ★
	All Cancers <65 years	42.6	48.2	34.4	52.0 ★	38.8
	All Breast Cancer	19.9	9.9	8.2	26.2 ★	21.3
	Breast Cancer <65 years	8.1	11.1 ★	4.4	10.9	7.1
	All Colorectal Cancer	8.8	6.1	5.5	10.8 ★	8.5
	Colorectal Cancer <65 years	3.6	N/A	5.7 ★	4.2	2.6
	All Liver Cancer	5.6	6.3	6.5	4.1	6.6 ★
	Liver cancer <65 years	1.4	N/A	N/A	1.8 ★	0.9
	All Lung cancer	30.4	22.1	8.8	27.1	41.1 ★
	Lung cancer <65 years	7.8	8.1	2.5	9.0	9.3 ★

★ highest mortality group for cancer type

Yellow statistically significantly higher than White comparison group

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Deaths, 2015-2017 combined

Black and White women have higher mortality rates from all cancers combined compared to Asian and Latina women. Although the difference does not reach a level of statistical significance, Black women have mortality rates above the other groups for breast cancer, colorectal cancer and for those under age 65, liver cancer. Moreover, Black women under age 65 have a mortality rate from all cancers that is significantly higher than their White counterparts.

The breast cancer mortality rate for Black women is higher than for White women for both breast cancer generally and for those under age 65. However, in contrast to prior data, these data from 2015-

2017 do not show a breast cancer mortality rate among Black women under 65 years of age that is significantly higher than White women. More data will be needed over more years to analyze and confirm whether this may reflect a trend away from the higher Black rate or whether these numbers may simply lack sufficient power from a large enough sample size to detect the difference at a significant level.

Although Asian and Latina women have mortality rates lower than White women for lung cancer, breast cancer and all cancers, Latina women under age 65 have significantly higher mortality rates from colorectal cancer compared to White women in this age group.

This report also analyzed patterns of cancer mortality according to Boston neighborhood. Table 11 below depicts differences in mortality rates by neighborhood, followed by an overview of key findings.

Table 11: Cancer Mortality Rates by Neighborhood												
		Boston	Dorchester	Fenway	E. Boston	Hyde Park	S. Boston	Mattapan	Roxbury	S. End	JP	Allston/Brighton
Cancer Mortality (per 100,000), 2015-2017	Cancer mortality	160	177.4	159.2	190.9	205.7	207.6	152.5	170.9	144.2	141.8	144.5
	Premature cancer mortality	10	15	14.6	7.9	9.6	10.6	9.3	10	10.6	6	9.4
	Breast cancer mortality	19.9	9.6-19.5	35.9	24.6	36.3	25.9	32.1	23.4	10.3	24.9	13.6
	Premature breast cancer mortality	8.1	4.2-6.2	18.8	NA	11.2	8.1	12.3	9	6.1	11.3	8.3
	Liver cancer mortality	9.2	11.3-11.8	6.5	17.1	7.9	7.5	5.8	7.5	11.7	6.5	7.5
	Lung cancer mortality	36.5	46.8	24.1	57.8	48.8	57.9	28.4	35.8	45.8	28.4	30.6
	Premature lung cancer mortality	10	15	14.6	7.9	9.6	10.6	9.3	10	10.6	6	9.4
	Prostate cancer mortality	24.5	45.2	28.5	NA	41.4	30.8	29.5	24.3	23.2	28.2	13.5
	Colorectal cancer mortality	12.1	13.1-14.7	7.6	7.7	14.4	12.7	14.4	9.5	9.4	11.6	13.5

Yellow: significantly higher than the overall Boston rate

ND: no data was collected on this population

DATA SOURCE: Massachusetts Department of Public Health, Boston resident deaths, 2015-2017 combined

As was observed with patterns related to behavioral risk factors, cancer mortality rates are also concentrated in neighborhoods challenged by the social determinants of health. Of note, residents of Dorchester experience significantly higher rates of premature (less than age 65) cancer mortality, lung cancer mortality, and premature lung and prostate cancer mortality. Residents of East Boston die of liver cancer at a rate nearly double that of what is observed across Boston and have significantly higher rates of lung cancer mortality and all cancer mortality. Residents of Fenway and Hyde Park die of breast cancer at a rate nearly double that of what is observed across Boston. In addition, Fenway residents have significantly higher premature breast cancer mortality, premature lung cancer mortality, and premature all cancer mortality rates compared to the rest of Boston.

CANCER SURVIVORSHIP

Perceptions of Cancer Survivorship

When asked about survivor services and experiences, interviewees and focus group members agreed that some follow up support with a medical care team is available following treatment, however they perceived that the support “falls off” shortly after. Patients described the need for more access to post-treatment supports for issues like managing the long-term effects of treatment (such as lymphedema) as well as how to stay on top of medications. Survivors mentioned that the prevailing concern for those who have successfully undergone cancer treatment is the fear that it will return. Focus group participants and interviewees reported that there is a lack of planning for survivorship as part of the cancer treatment process. As a result, patients, many of whom have received substantial support during their cancer journeys, suddenly feel isolated and alone. As in 2016, a common theme among cancer survivors was the importance of rejoining the workforce and concerns about their cancer history being viewed as a liability by colleagues and current and prospective employers.

Support groups were reported to be available and very helpful to survivors, and to patients in cancer treatment. Focus group members who have participated in support groups after cancer reported that these have been a source for information about services and advice about nutrition, exercise, and monitoring. Support groups also help to fill the need for emotional support after treatment. However, some reported, not all patients receive information about these groups. Survivors also mentioned the need for supports relative to how to live healthy lifestyles after cancer.

“I don’t know, but I feel very disconnected.... it’s like I’m out here by myself, there’s no sense of connection. Well, the immediate afterwards was okay, but after that, there’s nothing. It can come back at any time and I’m like, ‘how do I know?’”—Focus group participant

OTHER HEALTH ISSUES

Mental Health

Mental health issues were described as a priority concern across almost all focus group and interviews. Stress, anxiety, and depression were the most frequently-cited challenges among Boston residents. Surveillance and survey data indicate that anxiety and depression are somewhat common across Boston residents. While statistics indicate that the proportion of people receiving treatment for depression has grown, barriers such as stigma, cultural and language differences, and lack of sufficient providers constrain access to services for many. Residents from Jamaica Plain and Roxbury were significantly more likely to receive treatment for depression than the rest of Boston; those from Back Bay, Charlestown, and Hyde Park were significantly less likely to do so.

Substance Use

Substance use was considered a priority health issue in many focus group and interview discussions. Participants mentioned a variety of substances including marijuana, prescription drug use, and opioids as most concerning.

Other Chronic Conditions

Quantitative data point to a high prevalence of chronic disease among the residents of Boston. In 2013-2017, one-quarter of Boston adults reported being diagnosed with hypertension and about 10% reported having diabetes. Rates of these chronic diseases are significantly higher among Black and

Latino residents when compared to White residents. A significantly higher proportion of residents in DFCI’s priority neighborhoods of Mattapan, Roxbury, and Dorchester reported a hypertension diagnosis compared to the rest of Boston. Diabetes was also more prevalent in Dorchester, Mattapan, and Roxbury, as each had a significantly higher percentage of adults reporting a diabetes diagnosis compared to the overall Boston rate. The heart disease mortality rate was also significantly higher in East Boston, Hyde Park, Roxbury, and South Boston than the rest of Boston.

The table below depicts the various proportions of Boston residents affected by chronic health conditions across select neighborhoods. Significantly higher rates are highlighted.

	Boston	Dorchester	Mattapan	Roxbury	E. Boston	Hyde Park	S. Boston	Fenway	S. End	JP	Allston/ Brighton
Chronic Health Conditions											
Overweight/obesity (2013-2017)	56.8%	63-65%	71%	57.9%	63%	65%	57.3%	37%	50.7%	50.4%	49.7%
Diabetes prevalence (2013-2017)	8.5%	13%	18%	14%	9.1%	10.7%	5.5%	4.2%	6.5%	5.2%	4.3%
Self-reported hypertension (2013-2017)	24.7	30%	38%	30%	22.4%	24.7%	24%	12.7%	22.6%	20.3%	17.4%
Heart disease mortality per 100,000 (2016-2017)	131.4	127.3-130.4	118.2	158.8	174.2	168.5	157.3	96.5	101.4	137	140.3

Yellow: significantly higher than the overall Boston rate

ND: no data was collected on this population

DATA SOURCE: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2013, 2015, and 2017 combined

Environmental Health

Outdoor noise and air pollution from vehicles, and dangerous traffic were identified as top environmental health concerns in the Boston CHNA community survey. Quantitative data show secondhand smoke exposure was significantly higher among Boston residents of color and lower socioeconomic status.

KEY THEMES AND CONCLUSIONS

- Cancer is the leading cause of death in Boston and Massachusetts; rates of cancer mortality differ across different subgroups and by sex.** Black men experience the highest rates of mortality from all cancers and all premature cancers among those under age 65. These rates are significantly higher than White men. Black male residents also experience the highest rates of mortality due to colorectal, liver, and prostate cancer and lung cancer among those under age 65. Black women under age 65 have the highest mortality rates from all cancers which is statistically significantly higher than their White counterparts. Across all groups and cancers included in this CHNA, Asian men have the single highest mortality rate for lung cancer (58.9/100,000) followed by Black men for prostate cancer (49.8/100,000). Asian and Latino residents experience lower overall cancer mortality rates compared to White residents. Cancer mortality rates overall have declined

significantly in Boston from 2011 to 2017, as have colorectal and lung cancer mortality rates. In contrast, mortality rates have not changed significantly for breast, liver and prostate cancer and lung cancer for younger patients under 65.

- **Cancer screening rates for some cancers are better than others, and some residents face substantial barriers to getting screened.** Quantitative data indicate that screening rates for breast and cervical cancer are relatively high in Boston, while colon cancer screening rates are substantially lower. Black, Latina, and Asian women are significantly less likely to receive pap smears than their White counterparts with Asian women being far less likely to have a pap smear. While a variety of cancer screening opportunities exist in Boston, barriers to accessing these remain and include lack of awareness, discomfort and fear, inability to take time from work, confusion about screening guidelines and for a few, insurance and transportation issues.
- **Breast and Prostate cancers continue to be the most frequent type of cancer diagnosed in Boston** and the mortality rates have not improved for these diseases. The highest incidence of breast cancer is among White women (160/100,000) followed by Black women (140/100,000). The highest incidence of prostate cancer is seen among Black men (190/100,000) followed by Latino (112/100,000) and White men (111/100,000). The largest incidence disparity occurs among Black men for prostate and colorectal cancer and for Asian men for liver cancer. Liver cancer has a much lower incidence but is on the rise. Lung cancer is the deadliest form of cancer for almost all groups.
- **Some cancer incidence rates have declined over time, although disparities still exist.** Overall cancer incidence rates have declined in Boston between 2001 and 2015, as have incidence rates for colorectal, lung, and prostate cancers. Incidence rates for liver cancer, by contrast, have risen in Boston. Differences exist across race/ethnicity and sex, as follows:
 - **Overall cancer incidence:** Rates have increased for Asian and Black women over this time period and decreased among Black men and Whites of both genders. Rates are lower among Asian and Latino residents compared to White residents.
 - **Breast Cancer:** Rates have increased among Asian women but remained the same for women in other racial and ethnic groups.
 - **Colorectal Cancer:** Rates have declined among Asian men, Black women, and Whites of both genders, but remain highest among Black men.
 - **Lung Cancer:** Rates have increased among Latino men and declined among Black and White men.
 - **Prostate Cancer:** Rates have significantly declined among men of all racial/ethnic groups but remain highest among Black men.
 - **Liver Cancer:** Rates have risen over time, with White women experiencing significant increases in these rates. Asian residents experience higher rates of liver cancer than White residents, with Asian men having significantly higher rates than White men. The Boston Liver cancer rate is higher than the Massachusetts and US rates.
- **In synthesizing the data described in this CHNA, certain populations, including Black men and women, Asian men and women, and immigrants appear to have disproportionately higher levels of disease burden and risk, warranting increased attention.** Furthermore, the data confirms the need to prioritize efforts in Dorchester, Roxbury, and Mattapan while also pointing to emerging areas of need in neighborhoods such as East Boston and Fenway that warrant additional consideration.

- Boston has many health care and social service assets, but challenges to treatment exist for those in need of cancer care.** A high proportion of Boston residents are insured and report having one person as their personal doctor or health care provider, although barriers to accessing healthcare exist. These include underinsurance; cost; language and immigration status; navigation and care coordination challenges; transportation; and lack of culturally-sensitive approaches to care. Primary challenges to access for those with cancer include cost, maintaining employment, transportation, limited opportunities to participate in clinical trials, language access, and for communities of color, racism within the health care system.
- Patient navigation continues to be an area where more attention is needed.** While numerous focus group members reported that they benefitted greatly from having a care coordinator, social worker, or patient navigator during their cancer care, not all patients appear to have access to these services. There is a need for assistance with navigating the health system and health insurance, connection to social and other services, as well as advocacy for some. Respondents also suggested that such support be provided across the cancer continuum—from the point of an abnormal finding to survivorship. In particular, there was a strong desire for navigation services to support survivors well beyond the treatment period.
- Clinical Trials continue to be an area where more attention is needed.** As noted in the previous CHNA, more outreach is needed to patients, especially people of color, to raise awareness for this opportunity and to ensure that clinical trial participants will reflect the actual diversity of the city of Boston. It is incumbent on medical providers to encourage participation in clinical trials and to ensure that there is adequate space for underrepresented patients to participate. There is also a desire for providers to generally strengthen their patient communication and to better engage with patients regarding treatment options.
- Planning for cancer survivorship and expanding survivorship services were seen as important areas where more attention is needed.** Patients value the support that is provided during cancer treatment but saw a need for this during survivorship as well. This was noted as a substantial need in the 2016 CHNA as well. Planning for survivorship includes attending to issues like long-term effects of treatment, medication needs, managing day-to-day activities like employment and healthy living, and emotional support.
- Nearly one in five respondents participating in the Boston CHNA felt that cancer was a top concern. Additionally, several of the top concerns (e.g. smoking, obesity) are risk factors for cancer.** Among the general population, top community concerns were mental health and substance use, trauma, community violence, obesity, and social and economic concerns such as housing and employment.
- Quantitative data on smoking, alcohol use, obesity, and access to healthy foods and opportunities for physical activity indicate that some Boston residents are at increased risk for cancer.** While smoking rates have declined over time, one in six Boston adults still smoke, with significantly higher rates of smoking among Black residents, males, and those with lower levels of education and income. For example, nearly 1 in 3 unemployed residents smoke. Obesity was an area of substantial concern for Boston CHNA focus group members and interviewees, and data show that over half of Boston adults are overweight or obese. Black and Latino adults, as well as those who are older and who have lower levels of education and income are significantly more likely to be obese or

overweight. Certain neighborhoods also appear to have much higher rates of obesity; seven out of ten Mattapan residents, for instance, are obese or overweight. Limited access to opportunities for physical activity, food deserts, as well as lack of time to prepare healthy food were all reported to be contributors to obesity, especially among lower income residents.

SUGGESTIONS FOR CANCER-RELATED INITIATIVES, PROGRAMS, AND SERVICES

Overall

- **Expanded patient navigation/care coordination services.** Among all suggestions provided by interviewees and focus group participants, enhanced support to help patients navigate cancer services and related care was mentioned most frequently. This was a key suggestion in 2016 as well. They described a need for assistance navigating the health system and health insurance, connection to social and other services, as well as advocacy for some. Similarly, interviewees noted the importance of navigation support, including support at the beginning of the cancer continuum—when a patient has an abnormal screening result. Ensuring that patients are informed of these services and that they are offered to equally to all patients was also emphasized. The need for transportation support was also noted.
- **Enhanced language capacity/cultural competency.** While interpretation services in most aspects of cancer care was reported to be good, a few focus group members and interviewees suggested that greater language capacity is needed with front-line staff to help with scheduling and with different sub-specialty groups. They also mentioned an ongoing need for more cultural competency capacity across the cancer care system, including training in anti-racism/anti-discrimination. Some stated that greater racial/ethnic diversity in the cancer care workforce is a critical step in ensuring cancer care meets the needs of all patients.
- **Policy change.** A few respondents suggested policy changes including reimbursement for patient navigation as mentioned above. Additional policy suggestions included working with public benefits (such as SSI and SSDI) to minimize the catastrophic financial toll that cancer can have on individuals and families and advocating for changes in insurance coverage for alternative treatments and patient navigator services.
- **Greater collaboration across institutions.** A couple of focus group members and interviewees reported that collaboration among hospitals serving cancer patients could be improved, in particular relative to clinical trials and patient navigation services and ensuring that cancer patients and survivors at all hospitals are aware of the services available to them. More collaboration between hospitals and community-based organizations was also mentioned.

Prevention

- **Obesity Prevention.** Obesity is a risk factor for cancer and other chronic diseases. Given that more than half of Boston residents are obese or overweight, there is a need to provide education about healthy eating and nutrition. Community Benefits may be able to build on the past success of promoting healthy eating and cooking in a low-income housing community. Over five years of data, nearly two-thirds of Community Benefits priority neighborhood program participants indicated on a feedback survey that they wish to learn more about nutrition. Similarly, CHNA focus group participants expressed concern about obesity and not knowing how to prevent it. Particular geographic areas with higher obesity rates, such as Mattapan, would benefit from such education.

- **Tobacco Use.** Tobacco use is the most important risk factor for lung cancer and is linked to approximately 90% of lung cancer deaths in the United States, according to the Centers for Disease Control and Prevention. The data show high smoking rates among certain groups. For example, more than 1 in 4 Boston residents who are unemployed, low-income and do not have a high school degree smoke. DFCI's Treatment Program in Roxbury has had success in helping people reduce their tobacco use or quit completely. Expanding this program to other health centers in areas with high smoking rates, such as Dorchester or South Boston, or other community settings such as low-income housing developments, could help prevent lung and other cancers.
- **Low-dose lung screening.** Education about lung screening and expanded lung screening opportunities could help detect lung cancer at an earlier stage when most treatable, particularly for groups most at risk. Asian men have the highest lung cancer incidence rate and also the highest mortality rate across all cancers and all groups reported in the CHNA. Additionally, Latino men have had a large increase in lung cancer incidence.

Screening

- **More outreach about cancer prevention and screening services.** While screening rates for some cancers and among some groups is high, focus group members and interviewees saw a need to continue to maintain these rates, while also expanding efforts to ensure that underserved populations are reached. Suggestions about the type of information that needs to be disseminated include clear information about current cancer screening guidelines, the treatability of cancer, the importance of engaging in healthy behaviors to prevent cancer, and why it is important to follow up on abnormal results. Suggestions to enhance outreach included identifying and engaging community champions, utilizing multi-media approaches, and prioritizing young audiences and men.
- **Better patient follow-up after abnormal findings.** Respondents who discussed screening services overwhelmingly mentioned a need for better protocols relative to follow up after abnormal results.
- **Greater engagement of PCPs.** Interviewees stressed the importance of ensuring that PCPs are up-to-date about most current guidelines and have the resource they need to educate patients about why screenings are important, what is involved, and any risk or benefits.

Cancer Treatment

- **Greater access to clinical trials.** Noting the underrepresentation of people of color in clinical trials, several interviewees mentioned a need to conduct better outreach to these groups and to reduce barriers to their participation. This was also a key suggestion in 2016. Patient navigators or care coordinators can also be a critical resource relative to trials, helping patients to identify opportunities and dealing with barriers such as insurance. Direct messaging to patients about clinical trials was also suggested.
- **More support groups and education.** Cancer patients and survivors requested more cancer support groups in different languages, across different cancers and serving different populations. A few participants wanted financial planning guidance in the context of cancer and strategies to negotiate with employers. Caregivers participating in focus groups also saw a need for more education.
- **Better communication by physicians and provider offices.** Although most focus group members reported that received high quality cancer care, some saw a need for improvement relative to communication. A few reported that they wished that they had received more information about treatment options or had more of an opportunity to discuss these with their physicians.

Cancer Survivorship

- **Survivorship Services.** As in the 2016 CHNA, there was a request for more support services for survivors and families. People appreciated hospital survivor support groups but expressed a need for more support groups in other languages, as well as support groups facilitated by people of color and cancer survivors, possibly in collaboration with faith-based organizations. More information and support regarding living with cancer, rejoining the workforce, maintaining a healthy lifestyle, and supporting families was also requested.
- **Survivorship planning.** Respondents shared that more attention needs to be paid to helping cancer patients plan for survivorship including ongoing medical care, transition back to work and family life, emotional support, diet and exercise, and other needed social supports.
- **Engagement of primary care providers.** As with cancer screening and treatment, engagement of PCPs is critical in survivorship to ensure follow up care and monitoring. A couple of interviewees noted that more should be done to ensure that all patients have a medical home after treatment. Ensuring that primary care providers have sufficient expertise to provide this care is also important.
- **Exercise and nutrition support.** Specific support around healthy lifestyles after treatment was suggested by several respondents. Specific suggestions included nutrition consultation as a routine part of post-cancer care and more low-cost or free exercise programs for cancer survivors.

Conclusion and Acknowledgements

Cancer remains the leading cause of death in Boston. While the CHNA findings reflect that collective efforts to advance cancer screening and prevention are making a difference, the overall burden of cancer across all types is weighty and more effort is needed to reduce the cancer burden and address disparities. Dana-Farber recognizes that our efforts must go beyond cancer care and treatment, and as such, we will continue our unwavering commitment to reducing the cancer burden and promoting survivorship. We remain committed to educating the community and raising awareness about the importance of cancer prevention, outreach, screening, early detection, clinical trials and survivorship. In addition, we will continue to conduct a broad scope of community-based research and evidence-based interventions through collaborative work in local neighborhoods and throughout the region.

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