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# Dana-Farber Cancer Institute 2022 Cancer-Focused Community Health Needs Assessment (CHNA) Executive Summary

Submitted to:



**Dana-Farber**  
Cancer Institute



**Health Resources in Action**  
*Advancing Public Health and Medical Research*

## OVERALL EXECUTIVE SUMMARY

*This CHNA Report and 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 (Dana-Farber) is one of the world's leading cancer treatment and research centers. In addition to providing expert clinical care, Dana-Farber 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, Dana-Farber'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 Dana-Farber's community benefits and outreach activities contributes to the larger goal of advancing diagnosis, care, treatment, cure, and prevention of cancer and related diseases.

#### **Purpose and Scope of the 2022 Cancer Community Health Needs Assessment**

In addition to fulfilling the requirement by the IRS Section H/Form 990 mandate, the 2022 Dana-Farber Community Health Needs Assessment (CHNA) aimed to gain a deep understanding of health issues facing Boston residents including cancer risks and cancer experiences. This report presents findings from cancer-focused data collection and analysis and also integrates key results from a larger Boston CHNA to provide a deeper dive from the perspective of residents, cancer patients, and survivors regarding their experiences, concerns, supports, and challenges related to cancer prevention, screening, treatment, and survivorship within the larger framework of the social determinants of health. The ongoing COVID-19 pandemic, which has resulted in significant changes and inequities in health, the economy, and the workforce, has been an important and evolving backdrop to this CHNA. Dana-Farber contracted with Health Resources in Action (HRiA), a Boston-based public health organization, to develop this cancer-specific report.

## METHODS

### Health Equity Lens

The 2022 Dana-Farber CHNA focuses on the social determinants of health using a health equity lens. There is often a deep connection between how race, ethnicity, income, geography, and other factors shape health patterns. This CHNA focuses on the social determinants of health and also recognizes the need and imperative to focus on root causes in order to truly address inequities. As depicted in the Health Tree figure, these root causes include but are not limited to structural and institutional barriers, distribution of resources, poverty, and racism.

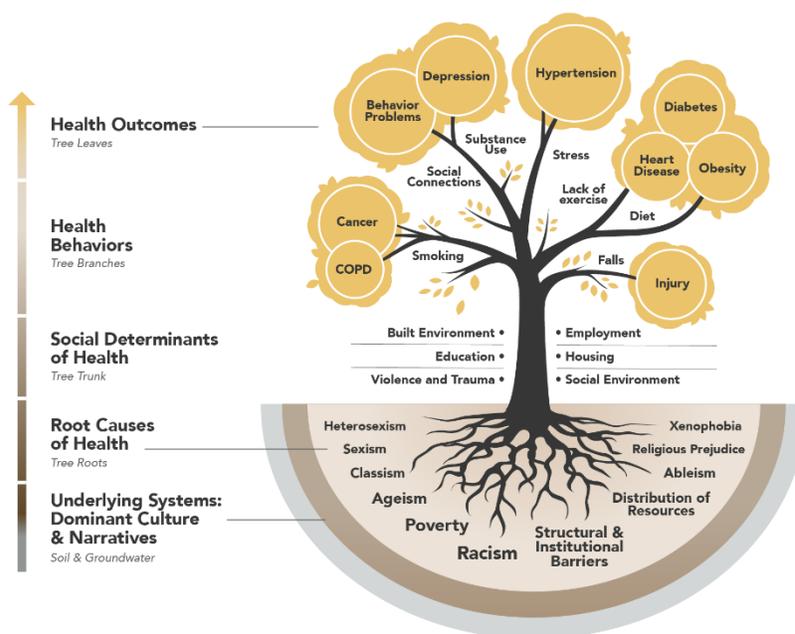
Guided by this framework, this report describes health patterns for Boston overall and areas of need for particular population groups. Understanding factors that contribute to health patterns for these populations can facilitate the identification of data-informed and evidence-based strategies to provide all residents with the opportunity to live a healthy life.

### 2022 CHNA: A Snapshot in Time

This 2022 Dana-Farber CHNA was conducted during an unprecedented time, including the COVID-19 pandemic, which exacerbated many social and economic inequalities that have been present for generations. The pandemic contributed to a staggering number of COVID-19 cases, deaths, and ongoing health challenges which disproportionately affected marginalized populations. During this same period, there has been a growing national movement calling for racial equity to address racial injustices in the U.S. The growth of this movement has been sparked by the killings of several Black Americans including George Floyd and Ahmaud Arbery. In 2020, the City of Boston declared racism as a public health crisis, underscoring the City's commitment to dismantle structural racism and recognize historical injustice.

This context shaped the assessment approach and content, in that the 2022 Dana-Farber CHNA also explores how the pandemic and racial injustices have affected community health needs. Dana-Farber is committed to meeting the health needs of medically underserved populations and recognizes that many of the populations that Dana-Farber focused on in this 2022 Dana-Farber CHNA have been disproportionately impacted by the COVID-19 pandemic. Given the unprecedented nature of the COVID-19 pandemic, it is critical now, more than ever, to understand community needs, experiences, and opportunities for the future.

Figure 1. The Health Tree



NOTE: The Health Tree is adapted by Health Resources in Action from the Human Impact Partners' Health Equity Guide

## Secondary Data

Secondary data for this report come from a variety of sources. Data sources include the Boston Behavioral Risk Factor Surveillance Survey (BBRFSS), the U.S. Census, the Massachusetts Cancer Registry, and vital records. As part of the BBRFSS, a separate COVID-19 Health Equity Survey was conducted in December 2020/January 2021 by the Boston Public Health Commission to better understand experiences among residents who have been most impacted by the pandemic. Data from this COVID-19 Health Equity Survey are also included in this report.

The Research and Evaluation Office at the Boston Public Health Commission conducted the data analysis for nearly all the secondary data on health indicators in this report (e.g., lifestyle behaviors, screening behaviors, cancer incidence, cancer mortality). Analyses are presented as frequencies (percentages) and rates throughout the report.

Additional data sources include presentations and reports regarding the social determinants of health, health outcomes, and health care experiences for several communities of color and sexual and gender minority populations. These sources include: a 2022 presentation by Dr. Don S. Dizon, *“Don’t Ask, Can’t Count. Addressing the Invisibility of the SGM Community Across the Cancer Trajectory Experience”*; Fenway Health and Black Boston COVID-19 Coalition 2022 report, *“Learning from Boston’s Black Community What Supports Its Health, Resilience, and Wellbeing”* (referred to hereafter as the “Black Boston 2022 Report”); and the Massachusetts Department of Public Health’s Women’s Health Network 2019 report, *“Assessment of Colorectal Cancer Screening Attitudes and Practices among the Asian Community in Massachusetts.”*

## Dana-Farber Key Informant Survey

Dana-Farber designed a qualitative key informant survey. This survey was fielded with cancer survivors and representatives from organizations that serve individuals across the cancer continuum. The survey aimed to understand their experiences with cancer prevention, cancer care, and survivorship; recommendations for cancer and chronic disease prevention services and resources; the influence of the COVID-19 pandemic on access to cancer screening and health care; potential facilitators to increase cancer screening; and recommendations for addressing gaps in services and resources for cancer survivors. Of 27 people contacted, a total of 13 cancer survivors and community stakeholders representing community-based, public health, and health care organizations completed this qualitative survey.

## Focus Groups and Interviews

DFCI worked with a variety of partners to gather primary qualitative data through focus groups and interview discussions. DFCI made a concerted effort to engage with populations and communities that have been historically marginalized. Altogether, 8 focus groups with 69 participants (caregivers, patients/survivors) and 4 interview discussions were conducted specifically for this CHNA. Key themes from two additional data sources were also analyzed and are incorporated into this CHNA. First, the Boston Breast Cancer Equity Coalition (BBCEC) shared key themes from 9 interviews conducted with small, local non-profit organizations who support BIPOC communities. Second, the Boston Public Health Commission also shared key findings from a focus group conducted with their 10-member Racial Health Equity Advisory Committee (RHEAC) to garner input to inform the creation of a lung cancer communication campaign.

## **Boston CHNA**

This report also integrates findings from data collected as part of the 2022 Boston CHNA-CHIP Collaborative's process. The Collaborative's Community Engagement Work Group facilitated 29 virtual and in-person focus group discussions with a total of 309 residents who have been disproportionately burdened by social, economic, and health challenges including: youth and adolescents, older adults, persons with disabilities, low-resourced individuals and families, LGBTQIA+ populations, racially/ethnically diverse populations (e.g., African American, Latino, Haitian, Cape Verdean, Vietnamese, Chinese), limited-English speakers, immigrant and asylee communities, families affected by incarceration and/or violence, and veterans. Some focus groups were conducted in languages other than English, including Spanish, Chinese, and Vietnamese. Collaborative members also conducted key informant interviews with 62 individuals. These interviewees included leaders and staff from public health, health care, behavioral health, the faith community, immigrant services, housing organizations, economic development, community development, racial justice organizations, social service organizations, education, community coalitions, the business community, childcare centers, elected government offices, and others.

## **Limitations**

While the data sources used in this CHNA are robust and highly credible, there are some considerations that are important to keep in mind. Qualitative discussions use small sample sizes and non-random sampling methods, the latter of which is an important approach to incorporating the perspectives of communities who have been underrepresented and underserved in the past and many of whom experience structural disadvantages related to the social determinants of health. Moreover, due to the ongoing COVID-19 pandemic, the majority of interviews and focus group discussions were conducted remotely, which may have affected participation – both in terms of who is able to participate remotely, and the information elicited in remote discussions.

Secondary data may have a time lag and apply different ways of measuring variables such as neighborhoods. Additionally, BBRFSS data from 2015-2019 are the most recent data available regarding the experiences, health behaviors, and self-reported health and health care patterns among Boston residents. Given the need to aggregate data across years to look at patterns across neighborhoods and population groups, data from the 2015-2019 period overlap with data reported in the 2019 Dana-Farber CHNA. Finally, COVID-19 data included in this report provide a snapshot of one moment in time in the ongoing pandemic and are not necessarily representative of the entire pandemic.

## **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 depicted in Figure 2 below – which are some of Boston's most diverse communities. The Dana-Farber Community Benefits office has identified these neighborhoods as priority focus areas given that they are within Dana-Farber's service area and include many of the city's most underserved populations. 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 2. Priority Neighborhoods



Dana-Farber has a statewide reach and also provides services at the following satellite locations:

- Milford
- Allston/Brighton
- South Shore
- Foxborough
- Merrimack Valley

## BOSTON POPULATION OVERVIEW

Boston's population is incredibly diverse in terms of race and ethnicity, country of birth, and languages spoken, which residents discussed as a community strength. According to Census estimates, approximately 3 in 5 (60.0%) Boston residents identify as people of color. Mattapan, Hyde Park, Dorchester, and Roxbury are home to the largest proportion of Boston residents who identify as Black. East Boston, Roxbury, Hyde Park, and Dorchester's 02121 and 02125 zip codes have the largest percent of residents who identify as Latino. Fenway and Allston/Brighton are home to the largest proportion of Asian residents. Participants noted many languages spoken among residents, including Cantonese, Mandarin, Russian, Spanish, Haitian Creole, Cape Verdean Creole, and indigenous languages. Boston's population represents a range of age groups, and the distribution of these ages varies across neighborhoods. Overall, according to 2020 Census estimates, 20% of Boston's residents are 19 years old or younger, 35% are 20-34 years old, 13% are 35-44 years old, 21% are 45-64 years old and 12% are 65 years or older.

## SOCIAL AND ECONOMIC CONTEXT

### Income and Poverty

Income loss during the pandemic has disproportionately affected Boston residents of color and low-income residents. Residents who identified as **Black** or **Latino** were most affected by income loss, with almost two-thirds (62.3%) of **Latino** respondents indicating that they had experienced income loss during the pandemic and nearly half of **Black** residents (49.9%) reporting income loss, compared to 33.1% of White adults. Relative to their counterparts, adults with **incomes less than \$25,000** (63.8%), and adults with incomes **\$25,000-\$50,000** (52.8%) reported income loss during the pandemic. Some 2022 Dana-Farber CHNA participants also described poverty and economic insecurity as a barrier to cancer screenings and health care appointments, citing barriers such as limited, inconsistent, or no health care coverage; lack of access to preventive health care; and difficulties taking time off work for low-wage workers. Several cancer survivors and caregivers mentioned the high financial costs and strain of a cancer diagnosis and treatment.

### Food Insecurity

Participants discussed how the cost of food is rising, contributing to growing levels of food insecurity as residents struggle to afford food, especially healthy food. Several participants underscored that many low-income residents have not been able to eat healthy foods during the COVID-19 pandemic due to financial constraints and some residents face barriers to safely accessing food due to concern about virus transmission. Some caregivers shared that it is difficult to get food, let alone healthy food, when undergoing cancer treatment and noted that it is difficult to get assistance with access to healthy food when undergoing cancer treatment. Pre-pandemic, about 17.8% of Boston residents were identified as food insecure – in that the food they purchased ran out before they had money to buy more. More than one quarter of residents in Mattapan (30.3%), Dorchester (25.1% to 27.8%) and East Boston (26.1%) reported food insecurity. Approximately 40% of **Latino** (40.4%) and **Black** (39.3%) adults reported using food assistance services during the COVID-19 pandemic, a markedly higher rate than 7.9% of White adults.

### Employment

Similar to the rest of the country, the greater Boston metropolitan area's unemployment rate fluctuated dramatically during the pandemic. The Boston metro area's unemployment rate was 16.0% during the early stages of the pandemic in April 2020 and has dropped to 3.7% nearly two years later in February 2022. Additionally, as of December 2021, an estimated 56,900 workers in Massachusetts have left the

labor force; this pattern is not reflected in current unemployment rates. Participants noted that the COVID-19 pandemic contributed to job and income loss, with some cancer survivors experiencing job loss or needing to leave their job due to health concerns about working in-person. Also, participants cited work as a barrier to cancer screening and treatment, particularly for residents with low-paying jobs.

### Education

The 2019 CHNA reported that college education differs dramatically by race/ethnicity and neighborhood. Nearly 70% of Boston White residents graduated college compared to only 20% of **Black** and **Latino** residents. East Boston and Roxbury have a greater proportion of residents without a high school diploma compared to Boston overall. Further, participants mentioned that many children struggle in school, especially during the pandemic. About 14.5% of Boston adults with children reported that they had unmet educational needs for children or teens during the COVID-19 pandemic

### Housing

Housing concerns in Boston have been pervasive for years since Boston is one of the most expensive cities in the U.S for renters. Participants reported being even more concerned about being able to afford where they currently live during the COVID-19 pandemic. More than 4 in 10 Boston adults (41.5%) reported that they have had trouble paying their rent or mortgage during the COVID-19 pandemic. Many residents, especially people of color, struggled with rents or mortgages. Compared to White respondents (24.8%), **Latino** (71.2%), **Asian** (52.1%), and **Black** (49.9%) adults were twice as likely or more to have trouble paying rent or mortgage. Other housing concerns included housing instability, mold and other environmental and safety issues that are unaddressed by landlords, and fear of losing housing due to medical costs and job loss or reduced work during cancer treatment.

### Transportation

Participants explained that often cancer patients live far from hospitals where they are receiving treatment, which makes for a long and exhausting commute, either by personal vehicle, a ride from a loved one, cab, or public transportation. In 2015-2019, 11.9% of Boston adults reported having transportation difficulties in the past year. Reports of transportation difficulties were highest in Dorchester's 02121 and 02125 zip codes (20.4%), Mattapan (17.2%), and South Boston (16.2%).

## BEHAVIORAL HEALTH

### Trauma, Discrimination, and Racism

Several participants discussed the impact of childhood trauma – such as racism, violence, poverty, home environments, addiction, neglect, and the loss of loved ones – on health and economic opportunity. Some participants mentioned experiences of racism in health care settings, citing poor treatment from doctors and hospital staff. About 6.4% of Boston adults indicated that they have been threatened at least a few times a month due to discrimination. This is significantly greater among **Black** and **Latino** residents (9.5% and 8.2%, respectively) compared to White residents (4.4%).

### Community Violence and Interactions with Police

Experiences with violence and with racism in non-health care settings emerged as a concern. Some participants discussed **anti-Asian** hate crimes and physical and verbal attacks as increasing and contributing to fear among **Asian American** residents seeking health care. About 14.4% of Boston adults

perceived their neighborhoods as unsafe, with the highest percentage of residents from Dorchester (24.5% to 34.3), Mattapan (29.5%), and Roxbury (29.3%) indicating concerns about neighborhood safety.

### Cancer and Mental Health

Several participants discussed the impact of the COVID-19 pandemic on mental health, citing high levels of stress and anxiety and fear about leaving home, feeling depressed, and isolation for cancer patients and survivors who felt like they could not leave home due to the ongoing pandemic and their immunocompromised health status. Some cancer patients and survivors discussed mental health issues related to their cancer diagnosis and treatment, describing the difficulty of processing and coping with a cancer diagnosis and treatment. During the COVID-19 pandemic, 16.8% of Boston adults reported experiencing persistent sadness – defined as feeling down, depressed, or hopeless more than half of the days in the previous 2 weeks

### Behavioral and Mental Health Care Access and Barriers to Care

About 7.1% of Boston adults reported delaying mental health care during the COVID-19 pandemic because of cost. Several barriers to mental health care emerged, including: a limited number of mental health providers, long wait lists, the need for referrals, financial barriers, limited mental health options for low-income communities, lack of culturally appropriate and linguistically congruent care, and mental health stigma.

## HEALTH PROMOTION AND CANCER PREVENTION

### Cancer Prevention Services Access and Delivery

Several participants discussed the lack of cancer prevention resources and barriers to accessing those resources in their communities, which are exacerbated for low-income residents and residents of color. Some key informants noted that the pandemic shifted the operational focus of their organizations from health promotion activities such as raising awareness about breast health to supporting COVID-19 testing and vaccination. Others noted that preventive services and programs may be a new concept for some immigrant communities.

### Smoking

Although smoking has declined (18.4% in 2013 to 12.2% in 2019), some groups smoke at rates substantially above the Boston rate overall. The single highest smoking rate was among those **out of work** (30.5%). Compared to their counterparts, reports of smoking were highest among **Black** adults (17.8%), **men** (18.4%), **renters** (15.8% to 29.9%), **US-born** adults (16.3%), and those **not formally employed** (17.0%). Notably, the percent of **low-income** respondents (15.7% to 23.4%) who reported smoking was nearly double that reported for higher income respondents (9.5%). During the 2015-2019 period, 18.6% of **LGBTQ** adults reported smoking.

### Alcohol Misuse

About 27.8% of Boston adults reported increased drinking habits during the COVID-19 pandemic. Prior to the COVID-19 pandemic, nearly one-quarter (24.1%) of Boston residents reported binge drinking (this proportion is similar to the rate reported in the 2019 Dana-Farber CHNA). In 2015-2019, compared to their counterparts, reports of binge drinking were highest among **White** adults (32.0%), **men** (28.9%), **renters** who do not receive rental assistance (30.1%), **higher income** residents (32.0%), **US-born** adults (27.7%), and those with **some college education or higher** (30.1%). More than one-quarter (29.1%) of **LGBTQ** adults reported binge drinking. Self-reported binge drinking was highest in South Boston,

Allston/Brighton, and Back Bay. Alcohol mortality appears to have spiked among **Black** residents as it more than doubled from 2019-2020.

### Obesity

Obesity continues to be a health concern; more than half (57.9%) of Boston adults reported being overweight or obese. Compared to their counterparts, the highest percentages of overweight and obesity are seen among **Black** (70.0%) and **Latino** (69.4%) adults, **men** (61.5%), **renters** who do not receive rental assistance (69.0%), **low-income** residents (60.4% to 62.5%), **immigrants who have lived in the US for more than 10 years** (66.1%), and adults with **lower educational attainment** (58.8% to 66.4%). Similar to patterns across Boston, about half (54.3%) of LGBTQ adults met the criteria for being overweight or obese. The neighborhoods of Mattapan, Hyde Park, Dorchester (all zip codes), East Boston, South Boston, and West Roxbury had the highest percent of residents who reported being overweight or obese.

### Physical Activity and Healthy Eating

Some participants described exercise as important for promoting physical and mental health, particularly when living with cancer. The percent of Boston adults who met the CDC guidelines for physical activity declined from 24.1% in 2013 to 19.0% in 2019. Compared to their counterparts, a lower proportion of **Asian** adults (14.7%), **Latino** adults (13.9%), **renters** (15.8% to 16.1%), **low-income** residents (13.8% to 15.2%), **immigrants** (13.0% to 14.8%), and adults with **less than a high school education** (12.6%) met the CDC guidelines for physical activity. Among LGBTQ adults, 22.5% reported levels of physical activity consistent with the CDC guidelines. Some participants mentioned limited healthy food options in lower-income neighborhoods across the city—particularly in Dorchester, Mattapan, and Roxbury.

## CANCER SCREENING

**Table 1: Cancer Screening Rates by Sub-Group, 2015-2019**

	All	White	Asian	Latino	Black	<\$25,000	Not employed	High School or Less	Renter	10 yrs or less in U.S.
<b>Mammography</b>	87.1%	85.7%	74.0%	91.7%	88.2%	88.2%	87.2%	86.6%	85.6%	***
<b>Colonoscopy or sigmoidoscopy</b>	78.4%	81.2%	62.7%	77.4%	77.9%	74.3%	47.6%	73.5%	70.6%	51.3%
<b>Pap Smear (2013, 2015, 2017 combined)</b>	83.7%	88.5%	57.7%	83.3%	83.4%	77.3%	84.2%	76%	74%-84%	63.5%

**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

NOTE: Pap smear data is from the 2019 CHNA and was not available for the 2022 CHNA.

DATA SOURCE for mammography and colonoscopy or sigmoidoscopy: Boston Public Health Commission, Boston Behavioral Risk Factor Surveillance System, 2015, 2017, and 2019 combined

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

## Breast Cancer Screening

Before the COVID-19 pandemic, 87.1% of Boston female adults aged 50-74 years reported having a mammogram in the past two years. This proportion exceeds the Healthy People 2030 (HP2030) target of 80.5% and is slightly lower than the mammography rate reported in the 2019 Dana-Farber CHNA (88.3%). Fortunately, disparities in mammogram rates were not seen among these groups; there was not a statistically significant difference in mammogram patterns across social and economic groups. Of note, data from 2015-2019 are the most recent data available pertaining to cancer screening patterns. However, these data were collected before the COVID-19 pandemic, when cancer screening rates declined.

## Colorectal Cancer Screening

Prior to the onset of the COVID-19 pandemic, just over three-quarters (78.4%) of Boston adults 50-75 years of age reported ever receiving colon cancer screening. This is slightly higher than the HP2030 target of 74.4% and is also higher than the colorectal cancer screening rate reported in the 2019 Dana-Farber CHNA (64.5%). Compared to their counterparts, the percent of adults reporting colon cancer screening was lowest among **Asian** adults (62.7%), **men** (73.8%), **renters** who do not receive housing assistance (70.6%), **low-income** adults (74.3% to 76.6%), and adults with **less than a high school education** (73.5%). Notably, just over half of **recent immigrants** (51.3%) reported ever receiving a colonoscopy, compared with 80.7% of US-born respondents. Again, it should be noted that these data were collected before the COVID-19 pandemic, when cancer screening rates declined.

The 2019 Massachusetts Department of Public Health *Assessment of Colorectal Cancer Screening Attitudes and Practices among Asian Communities in Massachusetts* identified several barriers and facilitators to colorectal cancer screening for Asian communities. Barriers included: limited experiences with and knowledge about preventive care; challenges of navigating the health care system; the time and financial burden of preventive care; low awareness of colorectal cancer; limited language and translation support; challenges translating the concept of and technicalities related to colorectal cancer in many native languages; transportation barriers; fear about screening procedures and potential results; and prioritization of non-Western medical approaches for some subgroups. Ongoing interactions with the healthcare system and positive relationships with providers were key facilitators to colorectal cancer screening.

## Other Screenings

### Cervical Cancer Screening

The most recent available data on cervical cancer screening rates in Boston was collected in 2017 and is reported in the 2019 Dana-Farber CHNA. As described in that report, in 2013-2017, 84% of Boston women (21-64 years of age) reported receiving a pap smear test in the past two years. This rate is nearly the same as the HP2030 target of 84.3%. Relative to their counterparts, a significantly lower proportion of women who identified as **Black** (83%) and **Latina** (83%) and a much lower proportion of **Asian** (58%) women reported receiving a pap smear recently compared to White women (86%). Additionally, **renters** (74%-84%), **those in other housing arrangements** (76%), **immigrants living in the US for less than ten years** (64%), and **immigrants residing in the US for more than 10 years** (83%) reported receiving a pap smear in the past two years. Also, women with a **high school education** (76%), women with **incomes <\$25,000** (77%) or **\$25,000-\$49,999** (85%), or **another employment status** (75%) 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 (65%) than in Boston overall.

### Lung Cancer Screening

As reported in the 2019 Dana-Farber CHNA, 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. The U.S. Preventive Services Task Force updated their guidelines in March of 2021. These guidelines recommend yearly lung cancer screening with LDCT for individuals who have a history of heavy smoking, and smoke now or have quit within the past 15 years and are between 50 and 80 years old. In 2020, rates of lung cancer screening in Massachusetts were 19.7%. While data on lung cancer screening rates in Boston is not currently available, it is anticipated that future BBRFSS data collection will include this.

### Prostate Cancer Screening

In 2017 the U.S. Preventive Services Task Force (USPSTF) updated its guidance for prostate cancer screening and recommended individual decision making with a physician about the test for men between the ages of 55 and 69 years. Following the USPSTF change, the prostate cancer screening rate appeared to increase by 12.1% among 55- to 69-year-old men. According to the National Cancer Institute Cancer Trends Progress Report, in 2018 39.0% of all men in the U.S. were screened for prostate cancer within the past year. However, the prostate cancer screening rate among **Black** and **Latino** men (37.0% and 33.2%, respectively) appears lower than among White men (40.4%). Research suggests that screening Black men for prostate cancer at a younger age may substantially decrease the likelihood of diagnosis of metastatic prostate cancer and reduce the probability of dying from it.

### HPV Vaccination

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 2020, rates of HPV vaccine completion among adolescents ages 13-17 in Massachusetts were 75% among females and 72% among males. Although Massachusetts has higher HPV vaccination rates than the US and Massachusetts's rate has increased since 2017, it still falls short of the Healthy People 2030 goal of 80% vaccination among eligible youth.

### Barriers to Accessing Screening Services

Participants cited several barriers to cancer screenings (and potential cancer diagnoses), including: disruption in in-person wellness programs that promote screening due to the COVID-19 pandemic, delays in screening due to fear of contracting COVID-19 at the screening facility and when taking public transportation to get to cancer screening appointment, long wait times for screening appointments since the onset of the COVID-19 pandemic, COVID-19 policies that restrict patients from being accompanied by loved ones, concerns about changes to the recommended frequency of cancer screenings, and fear of a cancer diagnosis.

Studies indicate that sexual and gender minoritized communities are less likely to have a regular primary care provider and to get cancer screening. When compared to heterosexual counterparts, gay men are more likely to report a cancer diagnosis and some gynecological cancers are higher among lesbians and

bisexual women. Transgender people experience unique health care barriers. For example, the prevalence of reported discrimination in health care settings as experienced by transgender people is higher than that reported by LGBTQ populations.

## HEALTH CARE UTILIZATION, CANCER INCIDENCE, AND MORTALITY

### Use and Perceptions of the Health Care System

Several participants noted that limited access to primary care providers is a barrier to health care utilization. About 81.0% of Boston adults report having a personal doctor or health care provider and 19.0% of Boston adults surveyed do not. Compared to their counterparts, a lower percentage of **men** (74.8%), **Asian** residents (63.9%), **Latino** residents (72.1%), **renters who do not receive rental assistance** (74.6%), **residents with other living arrangements** (74.9%), **low-income** residents (76.8% to 79.3%), and residents with a **lower educational attainment** (78.0% to 79.3%) reported having a personal doctor. Notably, fewer than half of **immigrants** who have lived in the US for less than 10 years (48.7%) had a primary care provider, which is nearly half the prevalence seen for US-born adults (86.4%). About 84.3% of LGBTQ adults reported having a personal doctor. The neighborhoods of Fenway (59.3%), East Boston (72.5%), and Allston/Brighton (73.4%) had the lowest percent of residents who report having a personal doctor or health care provider.

### Accessing Health Care Services for Cancer Prevention and Treatment: Barriers and Facilitators

Access to health care services is vitally important for cancer prevention and treatment. Participants identified various factors that can facilitate or hinder access to health care, including: health care access delays due to the COVID-19 pandemic; access to preventive health care; language barriers; health insurance affordability, changes, and charges; navigation of the health care system; long waits and limited time with doctors; COVID-19 policies that limit social support for cancer screenings, doctor's visits, and cancer treatment; limited and inconsistent health information from providers; and caregiving responsibilities.

### Perceptions of Cancer Treatment and Support Services

Several barriers and facilitators to cancer treatment emerged from participant discussions and a review of other assessments. Health care institutions and interpersonal interactions with providers can create barriers to cancer treatment for sexual and gender minoritized people. These barriers include, for example: gendering care across the cancer continuum and provider assumptions about patients' sexual behavior, histories, family formation, marital status, and the association between hormone replacement and cancer outcomes. Some participants described concerns that providers were not transparent about cancer outcomes and treatment options, the need for providers who deliver culturally responsive care, and barriers to understanding diagnosis and treatment options. Others described strong and regular communication with providers and support staff. Some participants mentioned stressors related to cancer diagnoses and treatment. While some participants worked with social workers and patient navigators and found them to be important sources of support, several participants were not aware of this resource. Some participants also noted a need for more support for caregivers such as providing information early on in the cancer journey about treatment and end of life care. Some participants perceived that the COVID-19 pandemic contributed to poorer quality care. While some participants found telemedicine convenient for brief follow-up appointments and seeing a provider in a timely manner, several participants emphasized the importance of in-person doctor's appointments and highlighted digital literacy as a telemedicine barrier for low-income communities and older adults.

## Cancer Incidence

In 2018, the overall cancer incidence rate in Boston was 415.7 per 100,000 residents. Overall cancer incidence rates for Asian (287.1 per 100,000) and Latino (333.5 per 100,000) residents in Boston were significantly lower than for White residents (434.9 per 100,000). Both Latino and Asian males and females had significantly lower overall cancer incidence rates than their White counterparts. **Black** residents overall and **Black males** had significantly higher incidence rates for overall cancer compared to their White counterparts. Women had lower overall cancer incidence rates than **men**.

The tables below present incidence rates by gender and race/ethnicity and highlight disparities compared to White residents.

**Table 2: Cancer Incidence per 100,000 for Boston Males by Race/Ethnicity, 2016-2018**

	All Men	Asian Men	Latino Men	Black Men	White Men
<b>All Cancers (2018)</b>	461.2	279.8*	394.5*	577.6*	477.6
<b>Colorectal Cancer</b>	32.8	31.6	27.8	42.7*	30.7
<b>Liver Cancer</b>	18.0	28.3*	15.3	23.0*	15.3
<b>Lung Cancer</b>	63.2	62.1	49.2*	66.6	68.6
<b>Prostate Cancer</b>	127.7	48.7*	117.7	232.8*	110.3

Asterisk (\*) denotes estimate was significantly different compared to White reference group within specific category (p <0.05)

Yellow denotes statistically significantly higher than White comparison group

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Cancer Registry, 2016-2018

**Table 3: Cancer Incidence per 100,000 for Boston Females by Race/Ethnicity, 2016-2018**

	All Women	Asian Women	Latina Women	Black Women	White Women
<b>All Cancers (2018)</b>	387.3	296.2*	305.5*	468.5	412.3
<b>Breast Cancer</b>	123.7	88.0*	96.5*	138.3	145.6
<b>Colorectal Cancer</b>	25.4	20.9	21.8	35.9*	24.8
<b>Liver Cancer</b>	6.7	10.1*	9.6*	9.7*	4.4
<b>Lung Cancer</b>	50.2	38.1*	24.5*	45.5	64.9

Asterisk (\*) denotes estimate was significantly different compared to White reference group within specific category (p <0.05)

Yellow denotes statistically significantly higher than White comparison group

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Cancer Registry, 2016-2018

## Cancer Incidence Over Time

Overall cancer incidence rates have declined significantly in Boston between 2010 (496.7 per 100,000) and 2018 (415.7 per 100,000), as have incidence rates for colorectal, lung, and prostate cancers.

Incidence rates for liver and breast cancer, by contrast, in Boston have remained relatively stable. The following table summarizes cancer incidence rates over time by race/ethnicity and sex.

**Table 4. Statistically Significant Changes in Cancer Incidence Over Time, by Sub-Group, 2010-2018**

	Asian Males	Asian Females	Latino Males	Latina Females	Black Males	Black Females	White Males	White Females
<b>All Cancers</b>			↓	↓	↓		↓	↓
<b>Breast Cancer</b>								
<b>Colorectal</b>		↓	↓			↓	↓	↓
<b>Liver Cancer</b>			↓					
<b>Lung Cancer</b>					↓		↓	↓
<b>Prostate Cancer</b>			↓		↓			

DATA SOURCE: Massachusetts Cancer Registry, Massachusetts Department of Public Health, 2010-2018

DATA ANALYSIS: Boston Public Health Commission, Population Health and Research

NOTES: Green arrow indicates statistically significant decrease over time

Incidence rates for all cancers overall declined significantly among Latino residents, White residents and Black men between 2010-2018. There have also been several significant declines across specific cancers and subgroups, as highlighted in the table above. It is important to note that incidence rates did not improve for all groups during this time period:

- Colorectal cancer incidence rates did not significantly improve among **Asian men, Latina women and Black men**
- Liver cancer incidence rates did not significantly improve among **Asian residents, Latina women, Black residents or White residents**
- Lung cancer incidence rates did not significantly improve among **Asian residents, Latino residents, or Black women**
- Prostate cancer incidence rates did not significantly improve among **Asian men or White men**

Unfortunately, there has been no significant change over time for breast cancer incidence rates for any groups in Boston during this time period.

### Cancer Mortality

Prior to the COVID-19 pandemic, in the years 2017, 2018, and 2019, cancer and heart disease were the leading causes of death in Boston. However, in 2020, the leading cause of death among Boston residents was COVID-19 (134.8 per 100,000 residents), followed by cancer (127.1 per 100,000 residents) and heart disease (123.8 per 100,000 residents).

Between 2015 and 2021 the overall cancer mortality rate and the overall cancer premature mortality rate in Boston declined significantly. Overall cancer mortality declined for White, Black, Asian and Latino residents between 2010-2021. However, this was not the case in all Boston neighborhoods; Fenway, Hyde Park, Jamaica Plain, Roslindale and West Roxbury did not have declining cancer mortality rates during this period.

The mortality rates for all Boston residents in aggregate for breast, colorectal, liver, and lung cancer have declined significantly between 2015-2021. It is important to note some disparities, however, since the decline in mortality rates does not apply to all groups for all cancers:

- Breast cancer mortality rates – did not decrease among **Black**, **Asian** and **Latina** women
- Liver cancer mortality – did not decrease among **Black** and **Latino** residents
- Lung cancer mortality – did not decrease among **Asian** residents

Unfortunately, there has been no significant improvement over time for prostate cancer mortality rates for any groups in Boston between 2010 and 2021.

Additionally, while premature mortality rates for those under 65 years of age for colorectal and prostate cancer have not significantly changed, premature mortality rates for breast, liver, and lung cancer have declined significantly between 2015-2021.

**Table 5. Statistically Significant Changes in Cancer Mortality Over Time for 2015-2021 in Boston, MA**

	Mortality	Premature Mortality (<65 Years)
<b>All Cancers</b>	↓	↓
<b>Breast Cancer</b>	↓	↓
<b>Colorectal</b>	↓	No change
<b>Liver Cancer</b>	↓	↓
<b>Lung Cancer</b>	↓	↓
<b>Prostate Cancer</b>	No change	No change

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Deaths, 2015-2021

DATA ANALYSIS: Boston Public Health Commission, Population Health and Research

NOTES: Please be advised that 2020-2021 data are preliminary and subject to change. Raw preliminary data may be incomplete or inaccurate, have not been fully verified, and revisions are likely to occur following the production of these data. The Massachusetts Department of Public Health strongly cautions users regarding the accuracy of statistical analyses based on preliminary data and particularly with regard to small numbers of events; Green arrow indicates statistically significant decrease over time

The tables below present mortality rates by gender and race/ethnicity and highlight disparities compared to White residents.

**Table 6. Cancer Mortality per 100,000 Residents for Boston Males, by Race/Ethnicity, 2019-2021**

	All Males	Asian Males	Black Males	Latino Males	White Males
<b>All Cancers</b>	154.7	126.1*	218.9*	117.9*	152.2
<b>All Cancers (&lt;65 Years)</b>	34.4	36.8	54.1*	25.1	28.8
<b>Colorectal</b>	10.6	6.6 <sup>+</sup>	18.4*	8.3 <sup>+</sup>	9.3
<b>Colorectal (&lt;65 Years)</b>	4.6	6.1 <sup>+</sup>	7.5*	3.6 <sup>+</sup>	3.5
<b>Liver Cancer</b>	10.3	16.3 <sup>+</sup> *	13.9*	9.5 <sup>+</sup>	7.9

<b>Liver Cancer (&lt;65 Years)</b>	3.1	4.3 <sup>+</sup>	5.1 <sup>**</sup>	3.8 <sup>+</sup>	2.0 <sup>+</sup>
<b>Lung Cancer</b>	31	44.8 <sup>*</sup>	39.6 <sup>*</sup>	17.2 <sup>**</sup>	29.3
<b>Lung Cancer (&lt;65 Years)</b>	7.1	11.6 <sup>**</sup>	11.6 <sup>*</sup>	NA	6.4
<b>Prostate Cancer</b>	21.5	11.3 <sup>+</sup>	43.7 <sup>*</sup>	19.7	17.6
<b>Prostate Cancer (&lt;65 Years)</b>	1.5	NA	3.6 <sup>+</sup>	2.4 <sup>+</sup>	NA

DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Deaths, 2019-2021

DATA ANALYSIS: Boston Public Health Commission, Population Health and Research

NOTES: Please be advised that 2020-2021 data are preliminary and subject to change. Raw preliminary data may be incomplete or inaccurate, have not been fully verified, and revisions are likely to occur following the production of these data. The Massachusetts Department of Public Health strongly cautions users regarding the accuracy of statistical analyses based on preliminary data and particularly with regard to small numbers of events; Asterisk (\*) denotes estimate was significantly different compared to White reference group within specific category (p <0.05); Yellow denotes statistically significantly higher than White comparison group; Plus sign (+) denotes that rates are based on 20 or fewer deaths and should be interpreted with caution; NA indicates data not available, data suppressed due to <5 deaths

**Table 7. Cancer Mortality per 100,000 Residents for Boston Females, by Race/Ethnicity, 2019-2021**

	All Females	Asian Females	Black Females	Latina Females	White Females
<b>All Cancers</b>	105.4	74.1 <sup>*</sup>	146.7 <sup>*</sup>	73.3 <sup>*</sup>	107.6
<b>All Cancers (&lt;65 Years)</b>	34.3	27.7	53.6 <sup>*</sup>	20.0 <sup>*</sup>	32.9
<b>Breast Cancer</b>	13.6	10.2	24.2 <sup>*</sup>	8.7	11.8
<b>Breast Cancer (&lt;65 Years)</b>	7.1	6.1	12.7 <sup>*</sup>	4.3	6.5
<b>Colorectal</b>	8.7	6.9 <sup>+</sup>	13.8 <sup>*</sup>	5.4 <sup>+</sup>	8.0
<b>Colorectal (&lt;65 Years)</b>	3.2	3.5 <sup>+</sup>	5.1	3.1 <sup>+</sup>	2.7 <sup>+</sup>
<b>Liver Cancer</b>	4.5	7.3 <sup>*</sup>	6.7 <sup>*</sup>	8.7 <sup>*</sup>	1.9
<b>Liver Cancer (&lt;65 Years)</b>	2.3	NA	3.2	1.4	1.7
<b>Lung Cancer</b>	21.5	17.8	23.3	11.6 <sup>*</sup>	26.1

<b>Lung Cancer (&lt;65 Years)</b>	6.1	3.4 <sup>+</sup>	8.6	NA	7.5
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DATA SOURCE: Massachusetts Department of Public Health, Boston Resident Deaths, 2019-2021

DATA ANALYSIS: Boston Public Health Commission, Population Health and Research

NOTES: Please be advised that 2020-2021 data are preliminary and subject to change. Raw preliminary data may be incomplete or inaccurate, have not been fully verified, and revisions are likely to occur following the production of these data. The Massachusetts Department of Public Health strongly cautions users regarding the accuracy of statistical analyses based on preliminary data and particularly with regard to small numbers of events; Asterisk (\*) denotes estimate was significantly different compared to White reference group within specific category (p <0.05); **Yellow** denotes statistically significantly higher than White comparison group; Plus sign (+) denotes that rates are based on 20 or fewer deaths and should be interpreted with caution; NA indicates data not available, data suppressed due to <5 deaths

Cancer mortality rates also differ across Boston neighborhoods, in some cases significantly. In 2019-2021, South Boston (164.5 per 100,000), Mattapan (149.7 per 100,000), and Hyde Park (148.7 per 100,000) had the highest mortality rates compared to all of Boston. Dorchester (02121 and 02124) (50.9 per 100,000) and Fenway (42.4 per 100,000) had significantly higher rates of premature cancer mortality than all of Boston.

## CANCER SURVIVORSHIP

### Support Groups

Some focus group participants discussed support groups as an important resource, particularly when going through the cancer treatment process, and many participated in remote support groups due to the ongoing pandemic. They noted that support groups provide a space to share the highs and lows of their cancer experiences and to grow their systems of support, with whom they described being in regular communication. Some participants noted that technological barriers can limit support group participation for older residents.

### General Digital Access

Participants described an increase in virtual communications, including remote support groups and community discussions, noting that in some cases participation increased and in other cases participation declined. Some focus group participants described online platforms as important sources of community news and cancer-related resources such as recommendations for how to get wigs. Several participants thought that most communities have access to digital resources. Key informants emphasized several barriers to digital access, including lacking regular access to the internet, computers, and smart phones and limited digital literacy (e.g., how to access online resources, download and use apps) and comfort using technology. **Older adults** and **low-income** households emerged in key informant discussions as populations who experience significant digital barriers. Some participants noted that residents may have access to computers and smart phones but may not know how to use them well.

### COVID-19 Pandemic Restricts Access to Cancer Survivorship Resources

One key informant discussed how COVID-19 protocols, such as reduced operating hours, capacity restrictions, and receipt of services by appointment made it more difficult for cancer patients to access cancer-related self-care products and wigs.

## COMMUNITY SUGGESTIONS FOR THE FUTURE: CANCER-FOCUSED INITIATIVES, PROGRAMS, & SERVICES

Participants in the 2022 Dana-Farber CHNA shared several ideas for developing and improving access to cancer prevention services and resources and strengthening initiatives, programs, and services focused on cancer screening, cancer treatment and care, and survivorship.

### Develop and Improve Access to Cancer and Chronic Disease Prevention Services or Resources

- **Improve Access to Health Care Including Addressing Systemic Racism:** Participants discussed the importance of improving access to primary care; cancer screenings; mental health care for cancer patients, caregivers, and their families; and addressing delays in health care. Key informants emphasized the importance of ramping up cancer screenings that have been delayed due to the COVID-19 pandemic, basing cancer screenings in low-income communities, making cancer screenings available during the evenings and weekends for residents who cannot take time off of work, and hiring bilingual staff. Some cancer patients and survivors recommended providing mental health resources within the hospital setting where they were getting treatment, which they also noted would be helpful given the physical and emotional challenges of cancer treatments.

*“There is a need to get back to focusing on breast health. COVID has derailed the breast health work and it is going to result in delays in treatment and worse outcomes.” – Key informant*

The Black Boston 2022 Report identified several recommendations to address systemic racism in health care institutions to promote the health of Black communities. A key recommended priority involves building a health care culture that centers racial equity by creating space for institutions and members to work together to learn about and become leaders in racial equity. The Report also recommends developing a process – within and across organizations – to deepen understanding about how systemic racism shapes health inequities and take action to improve the social determinants of health and health of Boston’s Black community. Another recommendation included investing in models that prepare Black community members to affect positive change within the health care system and prioritizing health care access for Black communities who are uninsured and experience poverty by concentrating high quality healthcare in predominantly Black neighborhoods.

- **Diversify and Train Health Professionals to Provide Multilingual and Culturally Sensitive Services:** Diversifying the health care workforce and hiring and training bilingual and culturally responsive providers and staff across the cancer spectrum was a key theme across discussions. Participants cited the importance of diversifying and providing cultural sensitivity training to doctors and a range of support staff, including cancer screening staff and medical and treatment appointments. The Black Boston 2022 Report recommended expanding the number of health care professionals and leadership who identify as Black and people of color and who would bring important lived experience and understanding of how to talk with patients of color.
- **Develop Gender-Inclusive Practices:** To address health care systems-level factors that contribute to cancer inequities among LGBTQIA+ communities, recommendations from experts in the wellbeing of sexual and gender minoritized communities include developing gender-inclusive practices that do not gender cancer screening, diagnosis, and treatment such as focusing on cancer sites and body

parts when referring to cancer and cancer resources (e.g., “women’s health center” vs. “breast health center”), being aware of biases that can affect assessing and addressing health care needs, developing resources to support LGBTQIA+ populations after cancer treatment, and asking about sexual orientation and gender identity when relevant and treating this as sensitive information.

#### Encourage People to Resume Cancer Screenings

- **Improve Health Literacy and Communication Regarding Cancer Prevention and Screening:** Some cancer patients, survivors, caregivers, and organizational staff called for community conversations about early detection and cancer screening, factors that contribute to high cancer rates in certain racial/ethnic populations, nutrition education, physical activity resources for cancer prevention and for cancer patients and survivors, and support in identifying cancer-related questions to ask providers. Tailoring prevention and screening efforts to reach men and LGBTQIA+ populations also emerged as a priority. Participants noted that these discussions need to be available in residents’ primary languages and at community-based locations (e.g., faith-based organizations). Other recommendations to improve cancer screening included mentioning providers’ COVID-19 safety protocols to address patients’ concerns about COVID exposures and making breast cancer screening gender neutral (e.g., label as “breast center” vs. “women’s center,” offer non-pink gowns). Recommended modes for communicating cancer screening availability included: word of mouth, pamphlets, flyers, television, social media. Stakeholders engaged in the 2019 Massachusetts Department of Public Health *Assessment of Colorectal Cancer Screening Attitudes and Practices among Asian Communities in Massachusetts* recommended partnering with cultural organizations and ethnic media to develop a strategy to improve health education about colorectal cancer and screening.
- **Funding:** Key informants cited the need for funding to support cancer prevention and early detection initiatives and emphasized the importance of supporting smaller community-based groups through grant opportunities and facilitating networking.

“We need more community conversations; ‘people-to-people’ vs people-to-clinician’, and conversations about health outside of the clinical setting.” –  
Key informant

#### Expand Initiatives or Services to Support Access to Cancer Treatment and Survivorship

- **Financial, Childcare, and Transportation Support:** Organizational staff, cancer patients, survivors, and caregivers provided several recommendations to lessen the financial strain of cancer care, including providing free or low-cost childcare for cancer patients, providing or directing patients to financial assistance, connecting survivors to financial resources to save their housing, and connecting patients with community-based initiatives that provide fresh produce. Participants also recommended providing free transportation to medical and cancer treatment appointments and simplifying transportation services for patients who are not fluent in English.
- **Partner with Communities and Increase and Institutionalize Lay Health Worker Models:** Key informants and some focus group participants recommended growing community health worker and patient navigator models and integrating them across the cancer continuum. To institutionalize lay health worker models, they suggested integrating these models into operational budgets, rather than funding in a piecemeal fashion with grants. Relatedly, the Black Boston 2022 Report recommended that health care institutions authentically partner with Black communities to develop strategies to improve the health of Black residents.

- Increase Access to and Information about Resources Available to Cancer Patients and Their Caregivers:** Some participants recommended improving access to and information about resources such as prescription medications to address cancer treatment side effects and resources typically concentrated outside of the healthcare sector, such as support with housing, transportation, and nutritional assistance. One caregiver cited the importance of making cancer education more accessible so that caregivers understand what cancer patients might experience during their treatment, how to support patients during their treatment, and preparing for end of life. Finally, while some participants perceived that cancer information was available, they were not familiar with how to access it or would have appreciated receiving it earlier in their cancer journey.
  - Improve Awareness of and Access to Support Groups:** Cancer patients, survivors, caregivers, and organizational staff discussed the importance of improving awareness of and access to support groups, particularly support groups that are culturally responsive and available in residents' primary languages, led by affected groups (e.g., Haitian-led support groups), and available to LGBTQIA+ communities. They recommended that providers refer cancer patients to support groups early in their diagnosis and treatment, and that hospital staff remind patients of available resources when scheduling and confirming appointments. Support groups for family members of cancer patients also emerged as a recommendation, as family members may not fully understand the experiences of cancer patients, may be stressed by the diagnosis, and may struggle to access cancer information that cancer patients.
- "...support groups to socialize and connect with others who have survived and shared their same experiences."*–  
Key informant
- Support for Survivors:** To better support cancer survivors, one recommendation involved incorporating a post-treatment assessment of the social determinants of health to ensure a strong clinical follow-up plan and provide continuity of support after treatment. Additionally, as noted above, another recommendation was to develop resources to support LGBTQIA+ survivors.
  - Accurate Data Collection and Reporting for Marginalized Populations:** Some key informants recommended accurate data collection and analysis of data pertaining to sexual orientation and gender identity minoritized populations and marginalized racial/ethnic groups. They noted the importance of data reporting by trained analysts who are structurally and culturally responsive and sharing these findings with communities who are disproportionately affected by cancer.

## KEY THEMES

This CHNA examines quantitative and qualitative data about the burden of cancer in Boston and needs related to cancer prevention, screening, treatment, and survivorship. Overarching themes that emerged from this synthesis include:

- **While cancer mortality rates have declined in recent years, cancer remains a leading cause of death in Boston. There are significant disparities in mortality compared to White residents:**

<b>Black residents</b>	<ul style="list-style-type: none"> <li>• Highest rates of overall cancer mortality</li> <li>• Significantly higher rates of breast, colorectal and liver cancer mortality</li> <li>• Black men have a significantly higher lung cancer mortality rate</li> <li>• Significantly higher prostate cancer mortality that continues to be 2.5 times that of White men</li> </ul>
<b>Asian residents</b>	<ul style="list-style-type: none"> <li>• Significantly higher liver cancer mortality rates</li> <li>• Asian men have a significantly higher lung cancer mortality rate which is still the single highest mortality rate across all groups for all 5 cancer types included in this CHNA</li> </ul>
<b>Latina women</b>	<ul style="list-style-type: none"> <li>• Significantly higher liver cancer mortality rate</li> </ul>

- **Despite overall declines in mortality rates, disparities persist since some groups do not have declining mortality rates.**

There has been no significant change for prostate cancer mortality rates from 2015 to 2021. During this period the overall cancer mortality rate and the mortality rates for breast, colorectal, liver, and lung cancer have declined significantly for all residents combined. However, younger adults under age 65 did not have a decline in cancer mortality during this period. Despite overall improvements, it is also critical to acknowledge that some populations have not had these cancer mortality declines:

- o **Black and Latino** residents did not have a decline in mortality rates for breast and liver cancer.
  - o **Asian** residents did not have a decline in mortality rates for breast and lung cancer.
- **Breast and prostate cancers continue to be the most frequent types of cancer diagnosed in Boston and prostate mortality rates have not improved. White and Black women have the highest incidence of breast cancer and Black men have the highest incidence of prostate cancer, more than double that of White men.** Additionally, disparities in incidence rates exist across the following groups compared to White residents:
    - o Colorectal cancer incidence rates are significantly higher for **Black** residents, consistent with the 2019 CHNA.
    - o Liver cancer incidence rates are significantly higher for **Black, Asian and Latina** residents
    - o Prostate cancer incidence rates are significantly higher for **Black men**, consistent with 2019 CHNA.

- **Despite a continued downward trend in cancer incidence rates, inequities remain.** Between 2010 and 2018 incidence rates for cancer overall and for colorectal, lung, and prostate cancers have declined significantly while incidence rates for liver and breast cancer have remained relatively stable. White, Black, Latino and Asian residents had a significant decline in overall cancer incidence rates, but importantly, incidence rates have not declined for the following groups and cancer types:
  - Colorectal cancer incidence rates have not declined among **Asian males, Latina females** and **Black males**.
  - Lung cancer incidence rates have not declined among **Asian** residents, **Latino** residents and **Black females**.
  - Prostate cancer incidence rates have not declined among **Asian males**.
  
- **The COVID-19 pandemic has had a substantial impact on cancer screening, cancer care, support for cancer patients, and the mental health needs of cancer patients and their caregivers.** COVID-19 disrupted in-person screening programs, caused some residents to delay screenings due to fear of contracting the virus, resulted in long wait times for screening and treatment appointments (including to see specialists), and led to policies that restricted loved ones from accompanying patients to appointments. Some participants found telemedicine convenient in some cases, while others emphasized the importance of in-person doctor’s appointments and noted that older adults and those with low-incomes often have difficulty accessing telemedicine. Additionally, CHNA participants noted that, for immunocompromised cancer patients and survivors, the pandemic led to high levels of stress and anxiety about leaving home as well as isolation and depression. Encouraging residents to resume screenings in the context of the ongoing pandemic is a priority for future work.
  
- **While some screening rates have remained stable or improved, barriers to screening remain.** Fear of cancer diagnosis and difficulty taking time off work were identified as barriers to screening, consistent with the 2019 CHNA. Lower screening rates and barriers for certain populations were also identified:
  - **Asian Residents:** The percentage of Asian adults reporting having ever had a colonoscopy or sigmoidoscopy is significantly lower compared to White adults, as it was in the 2019 Dana-Farber CHNA.
  - **Immigrant Communities:** CHNA participants described barriers to screening for immigrant communities including limited experiences with and knowledge about preventive care, particularly among Asian immigrant communities, and language barriers (noted by Asian and Spanish-speaking participants). According to 2015-2019 BBRFSS data, fewer than half of immigrants who have lived in the US for less than 10 years (48.7%) had a primary care provider, which is nearly half the prevalence seen for US-born adults (86.4%).
  - **Sexual and Gender Minoritized People:** In 2021, an estimated 7.1% of the US population – or 20 million people – self-identified as lesbian, gay, bisexual, transgender, or not heterosexual. Studies indicate that sexual and gender minoritized communities are less likely to have a regular primary care provider and to get cancer screening. A 2022 Dana-Farber CHNA participant noted that use of non-gendered language can encourage screening.
  
- **The COVID-19 pandemic exacerbated already difficult social and economic conditions that negatively impact cancer prevention, screening, and treatment.** In particular, the pandemic has worsened the following:
  - **Income inequalities.** Cancer treatment can carry extreme financial costs.

- o **Job/income loss.** Some survivors lost jobs or left due to health concerns about in-person work.
  - o **Food insecurity.** It's difficult to obtain food and especially healthy food during cancer treatment.
  - o **Housing.** Increased medical costs, job loss or reduced work during cancer treatment makes it harder to afford housing and lead to fears about losing housing.
  - o **Transportation.** Long distances to medical facilities can be a barrier to screening and treatment and is exhausting for those undergoing treatment.
- **Data on smoking, obesity, physical activity, healthy food access and alcohol indicate that some Boston residents are at increased risk for cancer.** Certain groups smoke at higher rates such as **Black** residents, **renters with assistance, low-income**, those with **less than a high school education** and over 30% of those **out of work**. Obesity continues to be a concern with over half of Boston adults reporting as overweight or obese and certain neighborhoods such as Mattapan and Dorchester have particularly high rates of obesity. **Black** and **Latino** residents and those with **low-incomes** report higher obesity rates. Healthy food is difficult to access for some; seven Boston neighborhoods have areas with limited grocery stores. Some groups such as those with **low-income**, those with **low educational attainment, Black** residents and **immigrants** have a concerning combination of cancer risk factors with more smoking, more obesity and less physical activity. Alcohol mortality appears to have spiked among **Black** residents as it more than doubled from 2019-2020 and should be monitored over time.
- **Access to health care services is vitally important for cancer prevention and treatment and some residents continue to face barriers to accessing services.** In addition to the challenges related to the COVID-19 pandemic described above, CHNA participants described barriers related to health insurance and costs and challenges navigating complex systems especially when working with multiple specialists. Participants also noted that the limited time spent with health care providers creates challenges related to understanding cancer diagnoses and building trusting relationships. Additionally, participants described a need for more providers who deliver culturally responsive care, particularly for **immigrant communities** and **communities of color**. Many of these themes were also present in the 2019 Dana-Farber CHNA.
- **To improve access to health care across the cancer spectrum, CHNA participants recommended addressing systemic racism and biases and developing gender-inclusive practices and data reporting.** Cancer patients and survivors of color shared experiences of having their health concerns dismissed by providers before being diagnosed with cancer, doctors talking down to them, not being informed about all of their cancer treatment options, and feeling disrespected, which they experienced as racism.
    - o The Black Boston 2022 Report identified several recommendations to **address systemic racism** in health care institutions to promote the health of Black communities, as discussed further in the Community Suggestions for the Future section above.
    - o Additionally, **diversifying health care workforce** and hiring and training bilingual and culturally responsive providers and staff across the cancer spectrum was a key theme.
    - o Specific recommendations for developing **gender-inclusive practices** included: focusing on cancer sites and body parts when referring to cancer and cancer resources (e.g., “breast health center” instead of “women’s health center”), being aware of biases, and developing resources to support LGBTQIA+ populations after cancer treatment.

- Accurate **collection and analysis of data** pertaining to sexual orientation and gender identity minoritized populations and marginalized racial/ethnic groups was also recommended.
- **Participants also offered recommendations on expansion of specific services and initiatives to support patients and caregivers across the cancer continuum.**
  - Similar to the 2019 Dana-Farber CHNA, participants recommended **expanding support groups** for both patients and caregivers and also recommended **integrating community health worker and patient navigator models** across the cancer continuum.
  - Holding multilingual **community conversations** on the topic of cancer, providing **financial support** to cancer patients, offering **educational resources to caregivers**, and developing **resources to support LGBTQIA+ survivors** were other specific recommendations.
  - While the need for encouraging diverse representation in clinical trials was identified in the 2019 Dana-Farber CHNA, this was not a prominent theme in the 2022 Dana-Farber CHNA.
- **In synthesizing the data described in this CHNA, certain populations, including Black residents, Asian residents, and Latina women appear to have disproportionately higher levels of cancer burden and risk, warranting increased attention.** Additionally, **immigrants** and residents with **low incomes** tend to have particularly difficult social determinants of health, higher rates of health risk behaviors and are less engaged in the health care system. Furthermore, the data confirms the need to prioritize efforts in Dana-Farber’s priority neighborhoods while also pointing to emerging areas of need in neighborhoods such as South Boston, Hyde Park and East Boston that may warrant additional consideration.

## CONCLUSION AND ACKNOWLEDGEMENTS

Cancer remains a leading cause of death in Boston. While the CHNA findings indicate that collective efforts to advance cancer screening and prevention are making a difference, the overall burden of cancer across all types is significant 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.

This comprehensive Cancer CHNA Report would not have been possible without the support and engagement of DFCI patients, family members, and caregivers, who generously contributed their time and feedback to this process. We’d also like to acknowledge our community partners, including Union Capital Boston (UCB), Roxbury Tenants of Harvard, Enhance Asian Community on Health, Boston Public Health Commission, Boston Breast Cancer Equity Coalition, Asian Women for Health and Dana-Farber’s External Advisory Committee members, among others, for their collaboration and support. In addition, we want to thank the organizations that participated in the Collaborative Boston CHNA/CHIP process. Please see <http://www.bostonchna.org/> for a full list of organizations engaged in this process.

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