

# Carney Hospital

A STEWARD FAMILY HOSPITAL

Steward

## Population Health Improvement Report 2012–2013



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# Executive Summary

While the full effects of health reform in the United States have yet to be realized, one thing is certain; from the largest teaching hospital to the smallest rural clinic, the assumptions that drive care delivery are changing. No longer will a patient's immediate condition be treated without consideration of the factors that have given rise to that situation; the external determinants that drive either health or illness and overpower the impact of a discrete prescription or an isolated emergency room visit. The results of such a myopic approach are evidenced in the status quo: fragmentation of care, disconnect between providers, duplication of services, and an overuse of resources.

Recognition of this critical situation has produced a renewed commitment across the US health system to focusing on three principal issues: improving the experience of patient care, providing care that improves the health of whole populations, and reducing the per capita cost of health care. Collectively referred to as the Triple Aim, these three goals create a roadmap for health systems to look both internally and externally at the conditions and drivers of health, and by innovation, to discover new ways of addressing those factors. The aim of this report is to present the areas of opportunity for Carney Hospital to optimize health system quality and address cost while confronting the pressing health concerns impacting the populations in its community.

This report details the most imminent concerns that arose from the examination of health-related data in the Carney Hospital service area population, retrieved from sources such as the US Census Bureau and the Boston Public Health Commission's *Health of Boston 2011* Report. We also collected primary data through a survey of local health and human service providers, meetings of the Carney Hospital Community Benefits Advisory Board, and focus group discussions with local residents. Internally, discussion with hospital staff, leadership, and directors of patient services and systems at Carney Hospital were done and examined for areas of action for improvement in quality and cost. Five areas of opportunity emerged:

## Obesity and Chronic Disease

People die at a higher rate from heart disease in North Dorchester (171.3 per 100,000 people) and Hyde Park (150.9 per 100,000 people) than in the city of Boston (147.3 per 100,000 people). North Dorchester (37.7 per 100,000 people) and Hyde Park (28.7 per 100,000 people) also have much higher rates of diabetes mortality than the city of Boston (21.6 per 100,000 people). Patients with chronic disease are more susceptible to issues resulting from fragmentation of care. In order to address this issue, the hospital should focus on improving patients' access to healthy food and knowledge of healthy meal planning and physical activity.

## Access to Healthcare

Access to Health Care is a major concern. Although most of the population is insured, there is a need for a more coordinated outreach effort. Language, navigation of the health insurance process, and inflexible time schedules remain barriers to achieving access to health care for the affected populations. Using community health advocates to assist with health insurance enrollment and navigation will help address some of these issues.

## Underserved Populations

Carney's service area is extremely diverse when compared to the state average. The largest population group is Black/African-American, representing up to 81% of the population in Mattapan, and 47% and 42% of the population in North and South Dorchester, respectively. The Hispanic populations in Dorchester, Mattapan, and Hyde Park are all above the Massachusetts average of 9%. Minority populations are less likely to be insured, and socio-cultural differences between patients and providers can lead to greater disparities in health and health care access. Other underserved populations identified through a survey of community members included: immigrants and illegal residents, the homeless, and people recently released from prison.

## Behavioral Health

S. Dorchester's suicide rate (8.4 per 100,000 people) was over 60% higher than the Boston city average (5.2) between 2003 and 2008. Both community service providers and residents within Carney's primary service area (PSA) identified behavioral health as an important health issue for the population that Carney serves. Mental health stigma has been identified as a major obstacle to accessing behavioral health resources.

## Substance Abuse

Alcohol and substance abuse related hospitalizations were higher in the service areas within Boston\* (457.4/100,000 people) than in Milton (228.6/100,000 people) and Massachusetts as a whole (345.6/100,000 people). Focus group and survey data indicated a need for more substance abuse treatment resources within the Carney's PSA. Increased awareness of substance abuse treatment centers and support groups would also be a useful tool for this community.

## Sexual Health

Sexual Health is also an important issue in Carney's service area. Chlamydia and gonorrhea rates for the service area are much higher than most other Boston neighborhoods. Increased education around sexual health, particularly the transmission of sexually transmitted infections (STIs), would be helpful in alleviating this issue.

## Recommended actions for the health system

### Chronic Disease/Obesity

- Implement a Farmers Market Prescription Program for persons with diabetes to access fresh fruits and vegetables from local markets. In addition, patients will enroll in Steward's diabetes education program to gain necessary information to help in disease management.
- Develop and implement a program that provides elderly congestive heart failure patients with culturally-appropriate, low sodium, and low fat meals to encourage healthy eating patterns at home as well as avoid hospital readmission.
- Expand Carney's Healthy Beverage Program, which has drastically reduced the amount of sugar-sweetened beverages available for purchase at the hospital, to local community organizations.
- Partner with local religious and community organizations to conduct outreach and education around nutrition, portion control, and the importance of physical activity.

### Access to Health Care

- Continue to support the utilization of community health advocates to provide follow-up enrollment assistance for uninsured patients who visit the emergency department.
- Conduct neighborhood-level outreach in strategic areas to offer assistance enrolling in available state health insurance programs.
- Utilize social media to inform community members of Carney's community partnerships and community benefit initiatives.

### Underserved Populations

- Conduct more focus groups and surveys to gather information on the needs of Vietnamese, Haitian Creole, and Spanish-speaking populations.

- Facilitate the exposure of primary care physicians to the community through a variety of outreach efforts such as health fairs and other community events.
- Utilize bilingual community health advocates to conduct outreach to underserved populations.
- Host a health fair in underserved communities to highlight preventative medical services and other community resources available at Carney Hospital.

### **Behavioral Health**

- Develop a collaborative care committee in partnership with community organizations to link behavioral health patients struggling to manage their disease with local Behavioral health resources.
- Partner with community organizations to increase awareness of coping mechanisms for trauma.

### **Substance Abuse**

- Institute a patient navigator to link individuals with substance abuse issues to clinical services, as well as primary care, social, and mental health services in the community.
- Continue to collaborate with the Dorchester Substance Abuse Coalition

### **Sexual and Reproductive Health**

- Partner with local community organizations such as schools and worksites to increase STI education and prevention activities, especially within the young adult population.

*\*Service areas within Boston city limits are North Dorchester, South Dorchester, Mattapan, and Hyde Park*

# Introduction

Carney Hospital (CH) is a member of Steward Health Care System, the largest fully-integrated community care organization in New England. With a 159-bed facility, Carney provides a wide range of services, including primary care medicine, a wide range of surgical specialties, psychiatry, emergency medicine, critical care, pediatrics, cardiology, neurology, and ambulatory surgery. Carney's service area includes North Dorchester, South Dorchester, Mattapan, Hyde Park, and Milton. The first four areas are within Boston city limits, and Boston city data is presented throughout the report as a representation of statistics within these four areas.

Carney maintains a Community Health Department that focuses on integrating care across the spectrum of hospital, primary and community-based care. A Community Benefits Advisory Board comprised of hospital leadership, representatives of local health and human service organizations, community centers, churches, and other community organizations guides the planning and execution of the community health initiatives. The results and recommendations here are designed to be the basis for strategic actions for Carney and its community partners.

This report provides the results of an examination of the health conditions and social factors affecting the people living in the neighborhoods and towns surrounding Carney as well as the key issues the hospital needs to address to improve quality and address cost. Evaluation of both the needs of the community and the strategic goals of the hospital furthers the prospect of working collectively to improve both the health delivery system and the health of the population. Opportunities are realized at the intersection of the hospital's strengths, the community's needs, and the new direction of health care in the United States.

The current US health care system, characterized by fee for service payment models and widely condemned for its exorbitant per capita costs and less than optimal health outcomes, is faced with an opportunity for transformation at a critical moment of unprecedented policy change. The prospect of shifting from a system that rewards providers for volume of services to one that rewards health systems based on the end goals of healthy populations is a highly attractive solution to the current state of affairs. Health care transformation is also highly debated, particularly in terms of means and methods. Long standing practices and cultures must be shifted to embrace the idea of caring for populations instead of individuals alone, and of examining medical practices with the aim of reducing health care costs.

The triple aim framework is a widely recognized model for health care transformation. It is a paradigm that calls for improving simultaneously the experience of care, the per capita costs of health care and the health of populations.<sup>1</sup> While these pursuits are all necessary to improve the current health care system, they are interrelated and must be considered in balance.<sup>2</sup> The challenges of widespread change, including developing infrastructure to support new models of caring for populations, require thoughtful planning, determined execution, and intentional learning from experience. This report aims to answer the call for thoughtful planning by using the triple aim framework to reveal the opportunities for health care transformation within Steward Health Care System hospitals and their communities.

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<sup>1</sup> Donald M. Berwick, Thomas W. Nolan, and John Whittington, *The Triple Aim: Care, Health, And Cost*, *Health Affairs* 27 3 (2008).

<sup>2</sup> *Ibid.*

# Methods

The approach for the Population Health Improvement Report (PHIR) consisted of the following steps, each of which is briefly described in the order in which it was implemented.

1. Extensive public data was collected and key findings were derived from the research of online data sources such as the US Census and the Massachusetts Community Health Information Profile (MassCHIP). Online research of Administrative policies and legal ordinances was done to identify and analyze policies and regulations that affect population health status.
2. A Community Provider Survey was distributed to the Carney Hospital Community Benefits Advisory Board and other key community based organizations. Local health and human service organizations, government agencies, community centers, and churches were among the organizations that were surveyed.
3. A focus group was conducted to capture community data on perceived health issues and barriers to health resources.

From these sources, data on health behaviors, health conditions (also referred to as health outcomes), access to and utilization of health services and health care costs were examined for opportunities where the hospital, in partnership with local community service providers, could make a difference in lowering per capita health care costs, improving quality and improving the health of populations.

The priority concerns to be addressed were selected based on the following criteria:

- Disease or condition rates higher than the state average
- Disease or condition rates increasing over time
- Identified as concerns by focus group participants and provider survey respondents
- Aligns with the strategic goals and objectives of Carney Hospital
- Availability of potential resources to address the issue/problem identified
- Could reduce per capita costs

A detailed version of the methods is available in Appendix A. Data on demographics and additional health indicators are available in Appendix B.

# Results

## Chronic Disease

There are an estimated 90 million Americans living with at least one chronic disease, and chronic disease contributes to over 70% of deaths in the US each year.<sup>3</sup> The majority of adults in the US with high cholesterol and about half of adults with high blood pressure do not have their conditions under control.<sup>4</sup> Despite the relatively low cost and proven effectiveness of treatments for these common and preventable - but potentially deadly - conditions, many Americans are not getting better. The percentage of children and adolescents in the US with a chronic health condition has increased from 1.8% in the 1960s to more than 7% in 2004.<sup>5</sup> Nationally, the top three leading causes of death are related to chronic disease (heart disease, stroke and cancer).<sup>7</sup>

Chronic disease costs are also rising. More than 75% of health care costs are due to chronic conditions.<sup>8</sup> Patients with chronic conditions often require long-term services and supports.<sup>9</sup> Such care costs the US health care system over \$200 billion dollars a year.<sup>10</sup>

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<sup>1</sup> Donald M. Berwick, Thomas W. Nolan, and John Whittington, *The Triple Aim: Care, Health, And Cost*, *Health Affairs* 27 3 (2008).

<sup>2</sup> *Ibid.*

<sup>3</sup> Center for Disease Control and Prevention, *Chronic Disease Prevention* (<http://www.cdc.gov/program/performance/fy-2000plan/2000vii.htm>)

<sup>4</sup> Centers for Disease Control and Prevention, *High Blood Pressure and Cholesterol*

<sup>4</sup> *Improved care could save more than 100,000 lives a year* ([www.cdc.gov/vitalsigns/pdf/2011-02-vitalsigns.pdf](http://www.cdc.gov/vitalsigns/pdf/2011-02-vitalsigns.pdf))

<sup>5</sup> CDC.gov, *Chronic Diseases: At A Glance* (2009).

<sup>6</sup> *Ibid.*

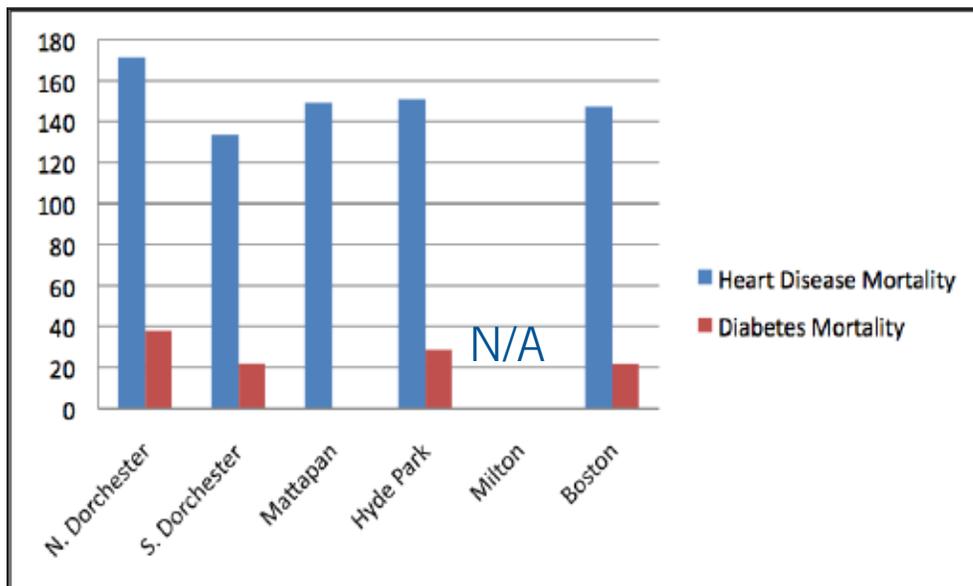
<sup>7</sup> *Ibid.*

<sup>8</sup> CDC.gov, *Chronic Diseases: At A Glance* (2009).

<sup>9</sup> S. Lawrence Kocot, Mark B McClellan, *Achieving Better Chronic Care at Lower Costs Across the Health Care Continuum for Older Americans*, Engelberg Center for Health Care Reform (2010)

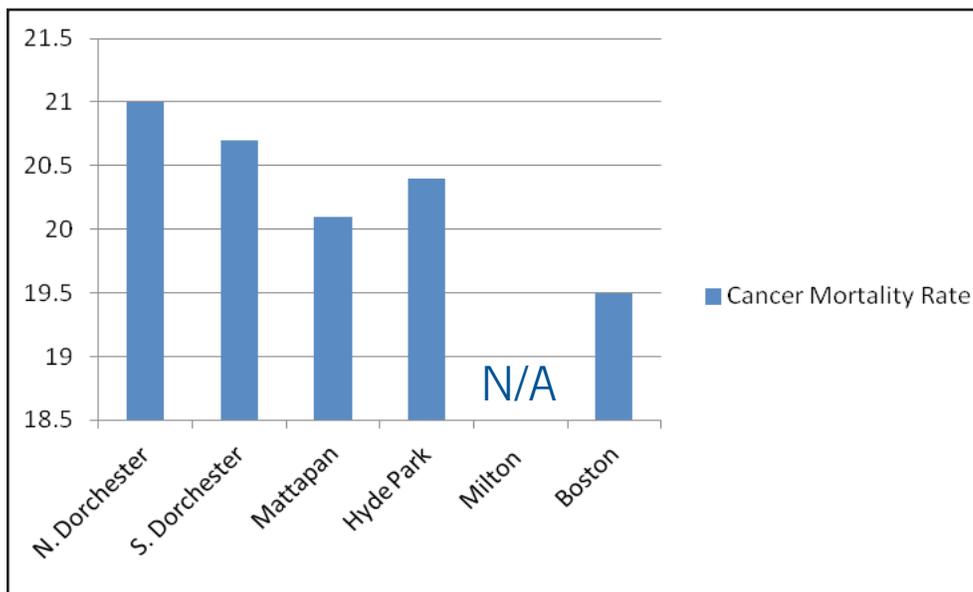
<sup>10</sup> *Ibid.*

Figure 1: Heart Disease and Diabetes Mortality (per 100,000 people)-(2007).



Source: MassCHIP 2007.

Figure 2: Cancer Mortality, age-adjusted per 10,000 people-2005 through 2007



Source: Health of Boston 2011

Carney's surrounding community suffers disproportionately from chronic diseases compared to the state and the rest of Boston. Lung Cancer is the leading cause of cancer mortality for both men and women in Boston, which contains most of Carney's service area. Mortality from heart disease and cancer are higher than the city of Boston and the state of Massachusetts. Dorchester, Mattapan, and Hyde Park have the highest rates diabetes and heart disease mortality. Focus group participants stated that chronic diseases, particularly cardiovascular disease and diabetes, are an issue for the community.

Lack of physical activity and a poor diet were cited in the focus groups as reasons for the high rates of chronic disease in Carney's PSA.

### Current Policies

The towns in Carney's service area have several regulations that impact chronic disease, including regulations to curb the use of cancer-causing products. The four service areas within Boston City limits (North Dorchester, South Dorchester, Mattapan, and Hyde Park) are under the jurisdiction of the Boston Public Health Commission's smoking regulations. These regulations include a ban on smoking in indoor workplaces (such as bars, restaurants, and nightclubs), as well as on city property. Milton also has a city-wide ban on smoking in workplaces, outdoor restaurants, and bars. There are also education and tobacco cessation resources available to residents in the Carney service area (such as the Dorchester Substance Abuse Coalition). This combination of policies and services demonstrates ongoing efforts to combat carcinogenic elements within Dorchester and other surrounding communities. The four PSAs within the city of Boston also have a sugar-sweetened beverage ban on city property, as well as a ban on serving food with artificial trans-fat, except for packaged foods, which must be labeled in vending machines.

More can be done to promote healthy eating and physical activity in Carney's PSA. Zoning to allow for more safe public spaces (see appendix B), and more policies to reduce food deserts could increase food access and physical activity within this community.

### Health Insurance and Access to Health Care Services

The ability to access health care services has a profound effect on every aspect of health, yet almost one in four Americans does not have a Primary Care Provider (PCP) or health center where regular medical services can be received.<sup>11</sup> Approximately one in five Americans (children and adults under age 65) does not have medical insurance.<sup>12</sup> People without medical insurance are more likely to lack a usual source of medical care, such as a PCP. These individuals are also more likely to skip routine medical care due to costs, increasing their risk for serious and disabling health conditions.<sup>13</sup> When they do access health services, they often face large medical bills and out-of-pocket expenses.<sup>14</sup>

The lack of health care coverage in a community also has negative effects on health care costs. A Kaiser Family Foundation report found that nationally, 65% of health care costs for the uninsured adult are not reimbursed, despite safety net programs (2004).<sup>15</sup> When hospitals seek compensation for care and do not receive it, the charges are considered bad debt. The impact of bad debt on a hospital impedes its ability to reduce costs.

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<sup>11</sup> *HealthyPeople.gov, Access to Health Services, (<http://www.healthypeople.gov/2020/LHI/accessCare.aspx>)*

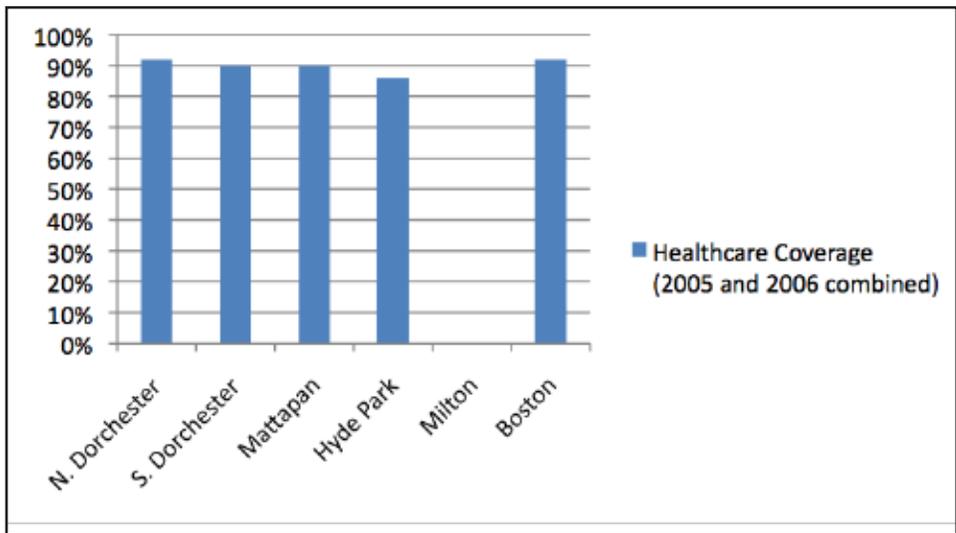
<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

<sup>14</sup> *Ibid.*

<sup>15</sup> *The Cost of Care for the Uninsured (Kaiser FF 2004)*

Figure 3: Percent of population with Health Coverage- 2005 and 2006 combined.



Source: Health of Boston 2011.

Access to healthcare in Carney’s service area, especially where health insurance coverage is concerned, is better than the US as a whole. This area has a relatively low percentage of uninsured residents (N. Dorchester 8%, S. Dorchester 10%, Mattapan 10%, Hyde Park 14%) when compared to the national average (Figure 3). However, the overall PSA has average or lower than average rates of uninsured residents when compared to the state average.

One of the principal themes that emerged from the focus group of community members was the need for successful transmittance of information from the hospital to the community regarding health care services and health education/health promotion information. The focus group participants felt there was a lack of knowledge of available health and health promotion resources available, citing the need for more service referral points. The coordination of care providers and facilitation of easy access to information and referrals was mentioned as possible solutions. Additionally, the focus group expressed the need for increased access to dental or oral health care for all residents. They mentioned that utilization of preventative dental services was low and that financing for dental health resources was inadequate.

Most of Carney’s service area is under the jurisdiction of the Boston Public Health Commission, an independent public agency providing a wide range of health services and programs to Boston residents. The town of Milton is under the jurisdiction of the Milton Department of Public Health (DPH). Both health departments conduct outreach to the community in order to improve health access. Milton’s DPH provides public health services such as immunizations and public health nursing services to the community. The public health departments also conduct public health education sessions on a variety of subjects, develop emergency preparedness plans, and investigate communicable disease outbreaks.

Community health centers are valuable community based organizations, often located in areas with a largely underserved population. These centers bring comprehensive primary health care and social support services to the community. Carney’s service area contains several community health centers, including Codman Square Community Health Center, Dorchester House Multi-Service Center, Upham’s Corner Health Center, Geiger-Gibson Community Health Center, Harvard Street Community Health Center, Mattapan Community Health Center, and Neponset Health Center. These centers all strive to provide community-based health care services to the medically underserved population of Massachusetts. In addition to providing health services, these centers cater to the cultural and socio-economically diverse population in Carney’s service area. Beth Israel Deaconess Hospital- Milton also serves

the Milton community with general medical and surgical inpatient care, as well as 24-hour emergency services.

Access to health care is often dependent upon reliable means of transportation. All five service areas are located in the Greater Boston Area, which has multiple bus routes, rail service, and highways. Principal highways are Interstate 93 and Route 128, the inner belt around Boston. Dorchester and Mattapan have access to the subway, and bus service is also available in all five areas.

### Outreach to Underserved Populations

Social and cultural differences between patient and health providers can lead to disparities in health and health access. This difference may affect: variations in patients' ability to recognize clinical symptoms of disease and illness, thresholds for seeking care (resulting from mistrust, and perceived racism or discrimination), expectations of care (preferences for or against diagnostic and therapeutic procedures), and the ability to understand the prescribed treatment.<sup>16</sup> Along with linguistic issues in communication, there is also a cultural component. If health care providers fail to understand socio-cultural differences between themselves and their patients, the communication and trust between them may suffer. This in turn may lead to patient dissatisfaction, poor adherence to medications, and poorer health outcomes.<sup>17</sup> Racial disparities in health care are also extremely costly, with a price tag of US \$23.9 billion in 2009.<sup>18</sup> Over the next decade, the total cost is estimated to reach approximately \$337 billion.<sup>19</sup>

Minority populations tend to have higher rates of uninsured people than whites in America. Approximately 91% of Latino Bostonians and 94% of African-American Bostonians had health insurance coverage in 2010, compared to 98% of white Bostonians.<sup>20</sup> Being uninsured often means postponing needed health care services. Many uninsured do not have a usual source for health care, have substantially higher unmet health needs than their insured counterparts, and have high out-of-pocket costs.<sup>21</sup> At Carney, uninsured patients arrive at the emergency department, and after receiving care are often unable to pay for services received. When hospitals seek compensation for care and do not receive it, the charges are considered bad debt. Carney incurred nearly \$3 million dollars bad debt in the fiscal year 2011-2012.

<sup>16</sup> Joseph R. Betancourt, Alexander R. Green and J. Emilio Carrillo, *Cultural Competence In Healthcare: Emerging Frameworks and Practical Approaches*, The Commonwealth Fund Field Report (2002)

<sup>17</sup> *Ibid.*

<sup>18</sup> Timothy Waidmann, *Estimating the Cost of Racial and Ethnic Health Disparities*, Urban Institute (2009).

<sup>19</sup> *Ibid.*

<sup>20</sup> Lesley Russell, *Fact Sheet: Health Disparities by Race and Ethnicity*, Center for American Progress (2010).

<sup>21</sup> Lesley Russell, *Easing the Burden Using Health Care Reform to Address Racial and Ethnic Disparities in Health Care for the Chronically Ill*, Center for American Progress (2010).

**Table 1: Diversity of General Population (% of population) -2010.**

<b>Race</b>	<b>N. Dorchester</b>	<b>S. Dorchester</b>	<b>Mattapan</b>	<b>Hyde Park</b>	<b>Milton</b>	<b>MA</b>
White	40.9	29.5	6.9	34.8	77.4	80.4
Black/African-American	24.8	44.3	79.5	49.9	14.3	6.6
Some Other Race	14.8	9.4	7.9	9.1	1.41	4.6
Asian	13.2	11.4	1.1	1.7	4.1	5.3
Two or More Races	5.8	5	4.1	4	2.5	2.63
American Indian and Alaska Native	.3	.4	.5	.5	.1	0.29
Native Hawaiian and Other Pacific Islander	.1	0	0	.1	.02	0.034
Hispanic or Latino	16.6	13.2	16.4	20.2	3.2	9

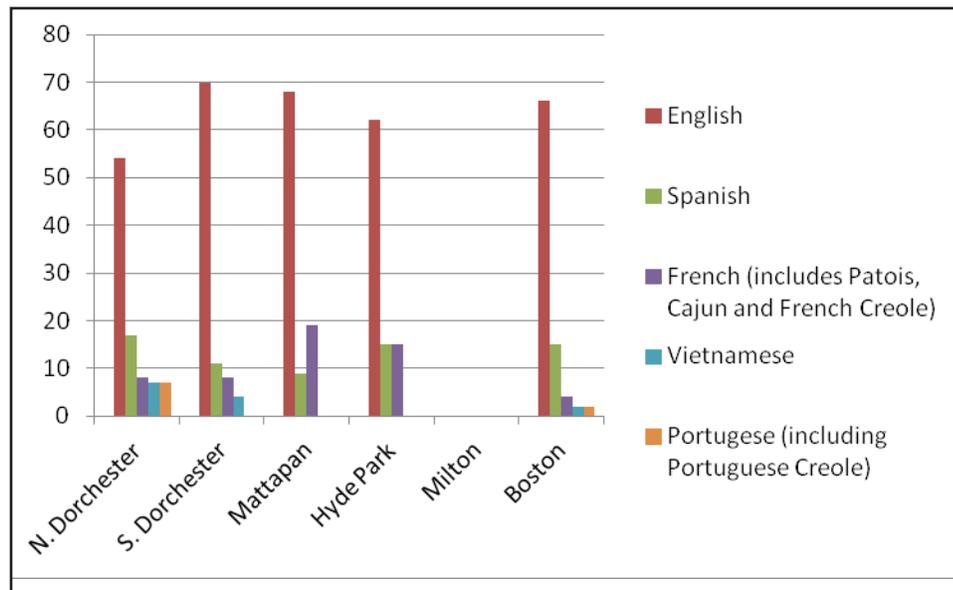
Source: US Census 2010

Carney’s service area is extremely diverse when compared to the state population. Most areas have a white population of less than 40%, compared to the Massachusetts average of 80%. The largest population group is Black/African-American, representing 79.5% of the population in Mattapan, 49.9% in Hyde Park, and 44.3% in South Dorchester. The Hispanic population in N. Dorchester, S. Dorchester, Mattapan and Hyde Park are all above the Massachusetts average of 9%. Milton has the largest white non-Hispanic population at 77.4%.

The public school population for the City of Boston (which includes Mattapan, Dorchester, and Hyde Park) shows an African-American population of 33%, compared to Massachusetts at 8%. Note that the Boston statistics include all Boston neighborhoods, some with large white population (See appendix B).

Other underserved populations identified through survey responders included immigrants and illegal residents, the homeless, and people recently released from prison.

**Figure 3: Language Spoken at Home (2009).**



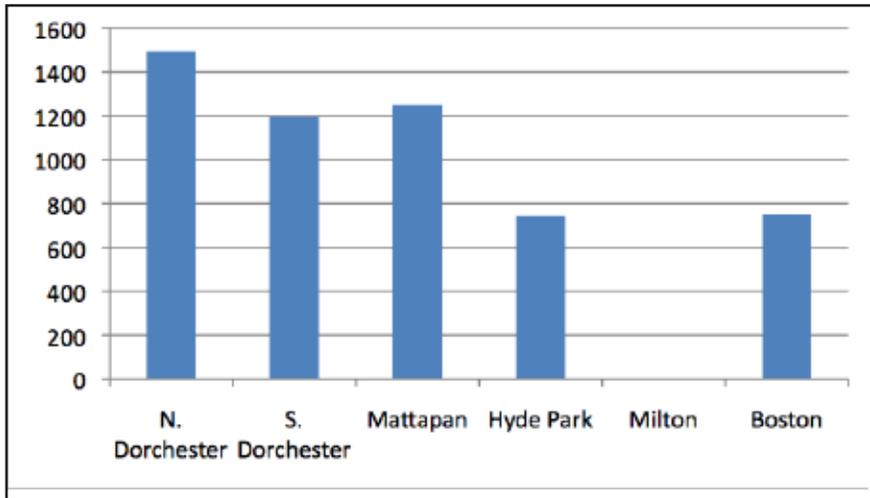
Source: *Health of Boston 2011*.

With 38% of its population speaking another language, Dorchester has more people that speak a language other than English than the US or Massachusetts average. Spanish speakers are the second largest group at 14%, followed by French speakers at 8%, and Vietnamese speakers at 5.5%. Mattapan and Hyde Park have a higher percentage of French speakers than the other service areas, which likely correlates to these neighborhoods' large Haitian populations.

### Reproductive & Sexual Health

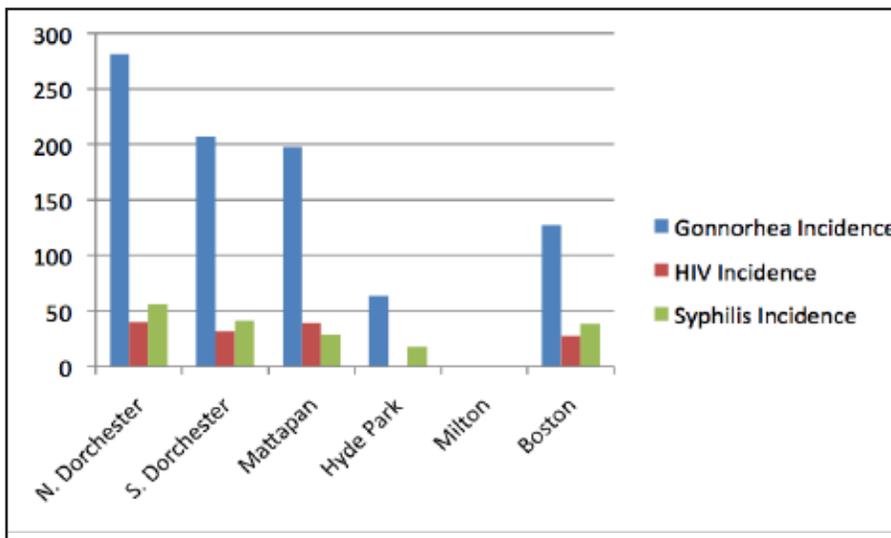
Services that focus on reproductive and sexual health are important resources for public health. These services improve health and reduce costs by not only covering family planning, Human Immunodeficiency Virus (HIV) and Sexually Transmitted Infection (STI) testing and treatment, and prenatal care, but also by screening for intimate partner violence and reproductive cancers, providing substance abuse treatment referrals, and counseling on nutrition and physical activity. Untreated STIs can lead to serious long-term health consequences, especially for adolescent girls and young women, including reproductive health problems and infertility, fetal and perinatal health problems, cancer, and further sexual transmission of HIV.

Figure 4: Chlamydia Incidence Rates (per 100,000 people) - 2006 through 2009.



Source: Health of Boston 2011.

Figure 5: Gonorrhea, HIV and Syphilis Incidence Rates (per 100,000 people) - 2006 through 2009



Source: Health of Boston 2011.

North Dorchester has much higher incidence rates of sexually transmitted infections than the rest of Carney's service area. The rates of HIV and Gonorrhea are higher in most of Carney's PSA when compared to the city of Boston. The data show that Chlamydia by far is the most prevalent sexual disease, followed by Gonorrhea, HIV/AIDS, and Syphilis.

The wellbeing and health of mothers, infants, and children determine the health of future generations and help predict health status and issues that may arise. The city of Boston, which includes four out of five of Carney's service towns, has a birth rate of 52.8/1000 among women ages fifteen to forty-four. Hispanic women had the highest birth rate out of all the ethnicity groups, with a rate of 72.3/1000, followed by black non-Hispanic at 65.5/1000. All Boston city birth rates are lower than the state average for each ethnicity group. Milton's birth rates are also all lower than the state average except for white non-Hispanic women. All of Carney's service area, except for North Dorchester, has an infant mortality rate that is lower than the city average. However, the rates of low birth weight births and preterm births are higher than the state's average for most of Carney's service area. Currently, there are no Obstetrics services at Carney hospital. However; there is a robust gynecology department that services all of Carney's PSA.

**Table 3: Infant Mortality Rates (per 1,000 live births) – 2006 through 2008.**

Area	Rate
N. Dorchester	10.6
S. Dorchester	6.5
Mattapan	5.8
Hyde Park	6.4
Milton	n/a
Boston	6.5
Massachusetts	4.8

Source: MassCHIP

## Behavioral Health

Behavioral health maintenance is essential to achieve wellbeing, healthy family and interpersonal relationships, and the ability to live a full and productive life. People with untreated behavioral health disorders are at high risk for many unhealthy and unsafe behaviors including alcohol or drug abuse, violent or self-destructive behavior, and suicide (the eleventh leading cause of death in the United States for all age groups and the second leading cause of death among people age twenty-five to thirty-four.<sup>22</sup>

Behavioral health patients face great obstacles in receiving behavioral health services. Behavioral health stigma is a main barrier for patients who might otherwise seek health resources because of the fear of social ostracism or discrimination. Additionally, behavioral health patients face difficulty in accessing social services, including adequate housing, proper health insurance and employment support, which are known social determinants of health. Lack of behavioral health care integration results in increased usage and boarding in the Emergency Department(ED), as well as increase cost.<sup>23</sup>

<sup>22</sup> HealthyPeople.gov, Mental Health (<http://www.healthypeople.gov/2020/LHI/mentalHealth.aspx>)

<sup>23</sup> The problem of patients remaining in the ED after already being admitted to the hospital, because of lack of inpatient beds.

Behavioral health issues can also have a serious impact on overall health. It is associated with the prevalence, progression, and outcome of some of today's most pressing chronic diseases,. These include diabetes, heart disease, and cancer. On average, people with serious behavioral health illness die twenty-five years earlier than the general population. Behavioral health disorders can have harmful and long-lasting effects—including high psychosocial and economic costs—not only for people living with the disorder, but also for their families, schools, workplaces, and communities.<sup>24</sup>

**Table 4: Suicide Rate by Neighborhood (2003-2008).**

Area	Deaths per 100,000 people
N. Dorchester	4.3
S. Dorchester	8.4
Hyde Park	4.4
Mattapan	N/A
Milton	N/A
Boston	5.2

Source: *Health of Boston 2011*.

**Table 5: Percentage of Adults Reporting 15+ Days of Poor Mental Health in past 30 Days (2002-2007).**

Boston	9.90%
Massachusetts	9.10%
White (non-Hispanic)	8.50%
Black (non-Hispanic)	13.10%
Hispanic	12.20%
Asian (non-Hispanic)	7.90%

Source: *MassCHIP*.

S. Dorchester has a suicide rate 60% higher than the overall Boston City rate. Both N. Dorchester and Hyde Park have rates close to the city average. The percentage of Boston adults reporting fifteen or more days of poor mental health within the past thirty days was 9.9% for the city of Boston (which includes all but one of Carney's PSAs). This is slightly higher than the Massachusetts average of 9.1%. However, the rate among black Bostonians (13.1%) and Hispanic Bostonians (12.2%) indicates a larger issue of behavioral health within these populations. This is relevant for Carney's PSA, as most of the neighborhoods have much larger black and Hispanic populations when compared to the Boston or state averages.

The focus group and the survey participants articulated a need for increased behavioral health resources, especially follow-up services (such as better outpatient appointment scheduling process or establishing an aftercare plan). Additionally, participants cited behavioral health issues among the elderly as a consistent and growing issue. Community-based organizations articulated difficulty in treating behavioral illness because of lack of resources, such as lack of inpatient psychiatric beds and inadequate behavioral health reimbursements.

<sup>24</sup> *Ibid.*

## Obesity

Obesity rates in the US have increased dramatically over the last thirty years and have currently reached epidemic status in the United States. The number of overweight children has doubled in the past two decades, leading to a generation at risk for cardiovascular diseases, diabetes, and other serious health problems.<sup>25</sup> This outcome is complicated in the cities by food deserts – urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food. Food deserts prevent individuals, children, and families from easily accessing healthy foods needed to support a healthy lifestyle.

Preventing obesity in our children is one of the most important public health issues facing the nation today. Regular physical activity and healthy eating habits can prevent or mitigate obesity and contribute to overall health. However, innovative approaches and partnerships are needed to help address this growing problem.

Obesity increases the risk of a number of health conditions including hypertension, adverse lipid concentrations, and type 2 diabetes.<sup>26</sup> It is estimated that 300,000 deaths per year may be attributable to obesity.<sup>27</sup> Additionally, obesity has been shown to reduce life expectancy.<sup>28</sup> One study revealed that people who are severely obese live up to twenty years fewer than people who are not overweight.<sup>29</sup>

One report estimated obesity to cost \$190 billion on obesity-related health care expenses in 2005.<sup>30</sup> Healthcare spending on obesity-related conditions is estimated to be 8.5% of Medicare spending, 11.8% of Medicaid spending, and 12.9% of private-payer spending.<sup>31</sup> Costs are only expected to rise as the rates of obesity are increase.

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<sup>23</sup> *The problem of patients remaining in the ED after already being admitted to the hospital, because of lack of inpatient beds.*

<sup>24</sup> *Ibid.*

<sup>25</sup> *Center for Disease Control and Prevention, Adolescent and School Health, Childhood Obesity Facts (<http://www.cdc.gov/healthyyouth/obesity/facts.htm>)*

<sup>26</sup> *Cynthia L. Ogden, et al. Prevalence of Obesity in the United States, 2009–2010, NCHS Data Brief 82 (2012).*

<sup>27</sup> *SurgeonGeneral.gov, Overweight and Obesity: Health Consequences.*

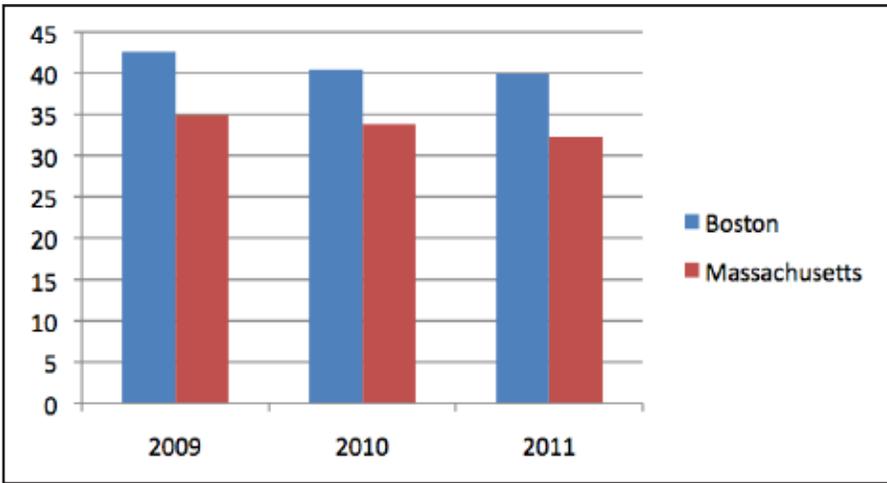
<sup>28</sup> *National Institute on Aging Press Office, Obesity threatens to cut U.S. life expectancy, new analysis suggests, National Institute on Aging (2005)*

<sup>29</sup> *Ibid.*

<sup>30</sup> *Cawley J, Meyerhoefer C. The medical care costs of obesity: an instrumental variables approach. J Health Econ 31:219-30. (2012)*

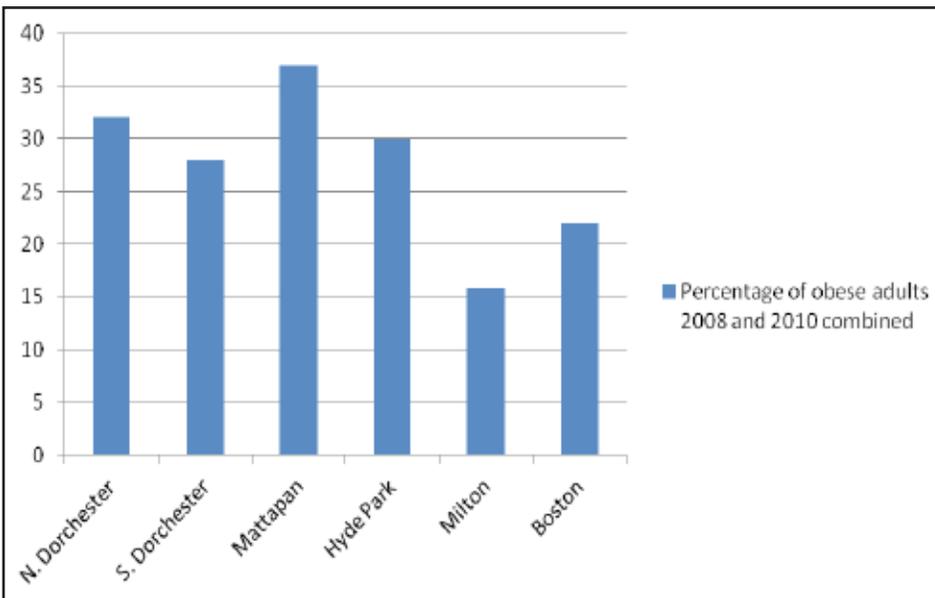
<sup>31</sup> *Harvard School of Public Health, The Obesity Prevention Source, Economic Costs, <http://www.hsph.harvard.edu>*

Figure 6: Grades 1, 4, 7, 10 Percent Overweight or Obese Males and Female- 2011.



Source: Executive Office of Health and Human Services (EOHHS)-Publications Status of Childhood Weight

Figure 7: Adult Obesity Rate- 2008-2010.



Source: Small-Area Estimation and Prioritizing Communities for Obesity Control in Massachusetts", American Journal of Public Health March 2009)

Service area data shows that, on average, over 40% of school-aged children are overweight or obese. There are a higher proportion of overweight or obese children in Carney's service area when compared to the rest of Massachusetts. Mattapan (36.8%) and S. Dorchester (32.8%) have some of the highest rates of adult obesity in the entire state. N. Dorchester (28.5%) and Hyde Park (29.2%) are also both high, at close to 30% of all adults. Milton (15.8%) is the only town with an obesity rate below 20%. Areas with large minority populations (such as Carney's service area) tend to have higher rates of obesity. Obesity interventions are necessary to prevent obesity related diseases such as diabetes and heart disease.

Obesity interventions were a consistent theme in Carney's focus group, where nutrition and physical activity were mentioned repeatedly as a concern for Carney's service area. Participants stated a need for more areas to exercise safely and more places to buy healthy and inexpensive foods. Participants also felt that there was a need for more nutrition education that included healthy preparation of ethnic foods.

There are seasonal and year-round farmers' markets in Dorchester, Mattapan, Hyde Park, and Milton providing access to fresh healthy foods within the local community. Despite these markets, Dorchester and Mattapan residents lack access to healthy foods, especially compared with the rest of Boston neighborhoods. Dorchester has one grocery store per 20,082 people, and Mattapan has no full-service grocery stores within its borders.<sup>32</sup> This disparity in food access within the city of Boston correlates with rates of obesity- areas with lower obesity rates tend to have more grocery stores and farmers' markets, while areas with few food stores have higher obesity rates.<sup>33</sup>

### **Current Policies**

The City of Boston has put ordinances and policies in place that promote physical activity and healthy food access. The Dorchester Avenue Project is working to improve Dorchester Avenue through a multitude of changes, which include the development of more pedestrian walkways. The Boston Public Health Commission, in partnership with the Mattapan Food and Fitness coalition and other neighborhood organizations, has instituted "Healthy on the Block," an initiative to increase community access to healthy affordable food through community corner store in Mattapan. Thus far, the initiative has collaborated with four corner stores to increase healthy food options for the Mattapan community.

### **Substance Abuse**

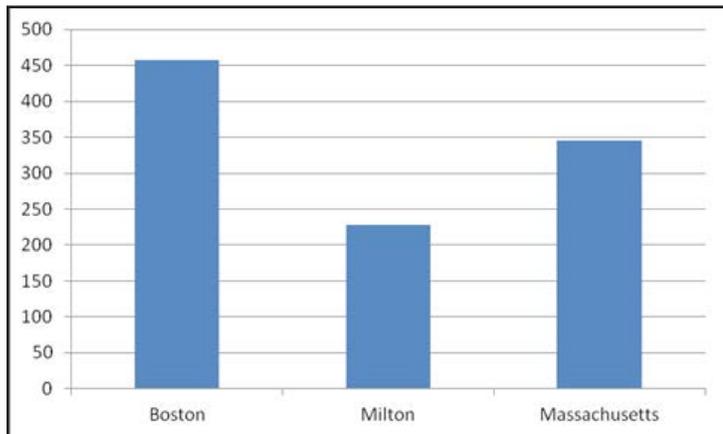
Substance abuse may directly involve the misuse of drugs and alcohol, but it is also associated with a range of destructive social conditions. Such conditions include family disruptions, financial problems, lost productivity, and failure in school, domestic violence, child abuse, and crime. Moreover, both social attitudes and legal responses to the consumption of alcohol and illicit drugs make substance abuse one of the most complex public health issues.

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<sup>32</sup> <http://www.baystatebanner.com/local11-2011-11-17>

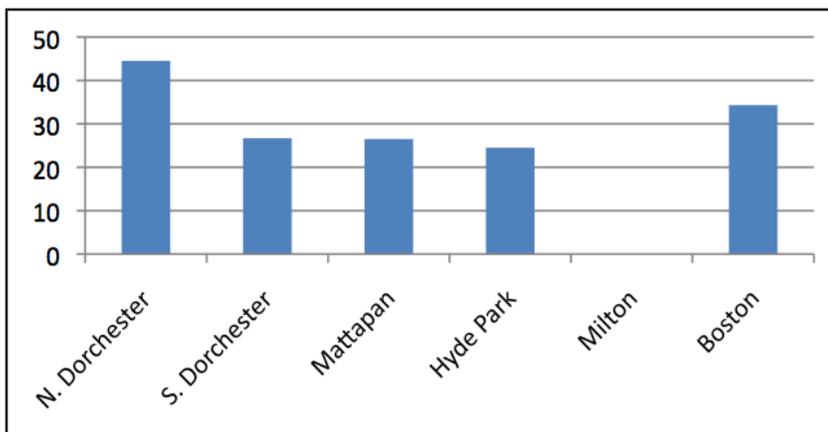
<sup>33</sup> *Small-Area Estimation and Prioritizing Communities for Obesity Control in Massachusetts. Am J Public Health. 2009 March; 99(3): 511-519*

**Figure 8: Alcohol and Substance Abuse-Related hospitalizations (per 100,000 people)-2009.**



Source: MassCHIP.

**Figure 9: Substance Abuse- related Mortality Deaths per 100,000 People (2008).**



Source: Health of Boston 2011.

Alcohol and substance abuse-related hospitalizations were higher in the Boston service areas (457.4/100,000 people) than in Milton(228.6/100,000 people) and Massachusetts as a whole (345.6 /100,000 people). N. Dorchester also had almost double the number of deaths due to substance abuse than the rest of Carney’s service area.

Focus group and survey input indicated a need for more substance abuse treatment resources within Carney’s PSA. Community members are often unaware of available resources in Dorchester, and increased awareness of substance abuse treatment centers and support groups would be useful for this community. The homeless population was identified as a particular sub-population in need of these resources.

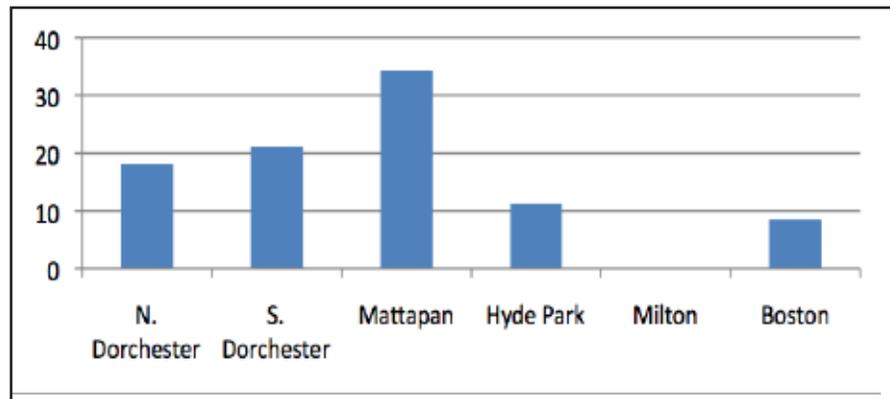
Steps have been taken by the towns in Carney's service area to deal with substance abuse in the community. The Dorchester Substance Abuse Coalition (DSAC) was formed in August, 2006, in response to the growing problem of substance abuse among youth in Dorchester. Neponset Health Center partnered with Carney, the Medical Foundation, the Irish Immigration Center, the Dorchester Probation Court, and Boston Police District C-11 to form DSAC.<sup>34</sup> The Task Force works to promote awareness, education, prevention, and treatment of substance abuse in the city.

## Crime

Crime and violence affect the individual and the community. Physical assaults, homicides, rapes, sexual assaults, and robberies breed public safety and health concerns in the community. Violence impacts the perceived safety of a neighborhood, inhibiting social interactions and adversely impacting social cohesion. Additionally, violent crime may result in premature death or injury and it is linked to disability, mental health issues, and increased medical costs.<sup>35</sup>

The data show that the highest crime rates occur in the Boston towns, while Milton's crime rate is lower than the state. Mattapan has the highest rate of homicide deaths in Carney's service area, with a Homicide rate of 34.3. This is over four times greater than the homicide rate for the city of Boston (8.5). North Dorchester (21.1) and South Dorchester (18.2) also have homicide rates much greater than the city of Boston. Youth violence was identified as a major issue in Carney's PSA from the focus group and survey responders.

**Figure 10: Homicide Rates (per 100,000 people).**



Source: *Health of Boston 2011*

<sup>34</sup> <http://www.mysac.org/site>

<sup>35</sup> *Healthy People 2020, Injury and Violence Prevention*  
(<http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=24>)

# Recommendations

This section of the report provides recommendations based on the evaluation of these results and the criteria established in the methods section of the report. Carney Hospital is well positioned to address the following areas:

- Chronic Disease/Obesity
- Underserved Populations
- Health Insurance and Access to Care
- Behavioral Health
- Sexual Health
- Substance Abuse

These areas represent leadership opportunities for Carney to improve patient experience population health and reduce per capita cost. Carney Hospital will collaborate with community partners to support efforts to impact and improve on these areas.

Recommendations for Carney are given below. Where appropriate, community-wide recommendations are also given. These represent efforts that are beyond the scope of the hospital but on which the hospital could partner with community organizations.

## Chronic Disease/Obesity

### Health System Recommendations:

- Implement a Farmers Market Prescription Program for persons with diabetes to access fresh fruits and vegetables from local markets. In addition, patients will enroll in the diabetes education program to gain necessary information to help in disease management.
- Develop and implement a program that provides elderly congestive heart failure patients with culturally-appropriate, low sodium, and low fat meals to encourage healthy eating patterns at home, as well as to avoid hospital readmission.
- Expand Carney's Healthy Beverage Program, which has drastically reduced the amount of sugar-sweetened beverages available for purchase at the hospital, to local community organizations.

### Community-wide Recommendations:

- Partner with local religious and community-based organizations to conduct outreach and education around nutrition, portion control, and the importance of physical activity.

With extremely high rates of obesity (up to 40% of the total population ) and obesity-related diseases in some of Carney's service areas, it is critical that the hospital takes leadership in implementing effective programming that will work to reduce these rates. It is recommended that Carney develops a Farmers' Market Prescription pilot program that will provide Carney's diabetic patients with vouchers that can be used at local farmers' markets. These vouchers can be used to buy fresh fruits and vegetables. By partnering with a local fitness center, patients could be encouraged to try a local gym to help with weight management. Lastly, patients could be encouraged to enroll in Steward's Diabetes Education Program, where they will have one-on-one sessions with the diabetes nurse and hospital nutritionist, as well as group sessions that provide instruction in healthy eating and portion control.

Heart disease and related conditions such as hypertension are an area of concern for the hospital. Three of Carney's service areas have higher heart disease mortality rates than the Boston city average. In particular, elderly patients have a much higher likelihood of being readmitted after discharge for congestive heart failure (CHF) if they ingest foods high in salt. It is recommended that Carney pilot a Healthy Meals program that would provide elderly patients recovering from CHF with low salt meals for a number of weeks post discharge. A Healthy Meals program, coupled with nutrition counseling, will help elderly patients from the community become more aware of the dangers of a high salt diet, and encourage them to incorporate healthy eating and exercising in their daily routine.

Carney's Healthy Beverage Program has been successful in eliminating almost all sugar-sweetened beverages from the hospital cafeteria. This has been done with minimal effect on profit for the cafeteria, and has encouraged employees, patients, and visitors to make healthier beverage choices. This program should be expanded into the community through Carney's partnerships. Carney will share best practices on implementing a healthy beverage program with already-engaged organizations, such as the Dorchester YMCA and Pope John Paul II Academy. The hospital could also link interested organizations with the Boston Public Health Commission and Healthcare without Harm, two leaders in sugar sweetened beverage reduction programming throughout the city.

Combating chronic disease requires education and modification of health behavior.<sup>36</sup> Promoting healthy behaviors such as an active life, healthy eating, and disease self-management are important to chronic disease maintenance. Carney should continue to collaborate with social service organizations, worksites, and religious organizations to provide counseling on needs identified through surveys and focus groups (healthy eating with cultural foods, portion control, and nutrition). Additionally, the hospital should provide education on the importance of physical activity for middle-aged adults in the community, a group identified as at high risk for obesity by our focus group participants. Carney physicians can support this effort by collaborating with organizations interested in increasing awareness of chronic diseases - particularly diabetes, heart disease, and cancer. Increased education in the community on chronic disease prevention and management with community partners would increase awareness of disease self-management and promote healthy behavior changes.

## Access to Health Care

### Health System Recommendations:

- Continue to support the utilization of community health advocates to provide follow-up enrollment assistance for uninsured patients who visit the emergency department.
- Conduct neighborhood level outreach in strategic areas to offer assistance enrolling in available state health insurance programs.
- Utilize social media to inform community members of Carney's community partnerships and community benefit initiatives.

Carney's Community Health Advocates (CHAs) are working to increase healthcare access by conducting outreach and assisting patients in enrolling in and navigating access to health insurance. Carney employs staff that offer insurance enrollment services in the emergency department, but the burden of follow-up with forms and required documentation is placed on the patient. Carney's CHAs conduct follow-up with uninsured patients and help with enrollment into eligible insurance plans.

In conducting outreach and working with patients, community health advocates also have the opportunity to gather more comprehensive data on the community. Information on patient experience,

<sup>36</sup> Nicole D. Gillespie, Thomas L. Lenz, *Implementation of a Tool to Modify Behavior in a Chronic Disease Management Program, Advances in Preventive Medicine 2011 (2011)*

preferences, demographics, and socio-economic status can be collected in order to better understand and improve quality of care. Carney's CHAs will organize community-based enrollment drives to offer assistance to uninsured members of the Dorchester, Mattapan, Milton, and Hyde Park communities.

The use of community outreach workers would improve access to community prevention services and health care and could alleviate or reduce the hospital's bad debt. From 2011-2012, Carney's bad debt totaled \$2,942,478. The funds saved can be used to further improve patient care and population health.

Carney should also make use of new media disseminating initiatives to engage and inform Carney's PSA of community benefit services offered by the hospital. By utilizing web resources, social media, and collaborating with community based organization (such as the BACH), Carney can bring awareness of resources that are available to the community. Such initiatives can take the form of information distributed through the hospital website, Facebook, twitter, brochures, and health fairs. Focus group and survey input should be gathered regularly to inform the hospital on which communication platform is most effective for outreach into the community.

## Underserved Populations

### Health System Recommendation:

- Conduct more focus groups and surveys to gather information on the needs of Vietnamese, Haitian Creole, and Spanish-speaking populations.
- Collect up-to-date information and use community mapping techniques to identify areas of need and to document the use of hospital services in these populations.
- Conduct more primary care physician outreach to the aforementioned populations to increase healthcare access.
- Utilize bilingual community health advocates to conduct outreach to underserved populations.
- Host a health fair to highlight the medical services and community resources available at Carney.

Focus group data identified Vietnamese, Haitian Creole, and Spanish-speaking populations as populations that had the greatest problem with access. In order to better serve these populations, Carney needs a better understanding of the populations' preferences and needs in order to better improve the quality of care and health services delivered. Direct community input should be gathered using a focus groups and surveys. Information on population preferences, obstacles to securing quality services, and media preferences can be collected in order to focus efforts to increase access. CHAs who have begun outreach to these communities could be one important source of gathering direct community information.

Another major health access obstacle for underserved populations is finding care that is culturally competent. One way of increasing minority patient access at Carney would be to promote culturally-competent primary care physician practices affiliated with the hospital. Carney has physicians who speak a multitude of languages, including Vietnamese, Haitian Creole, and Spanish. By promoting events and opportunities for these physicians to connect with Asian, Latino, and Haitian populations in Dorchester, Carney can link these residents who might need culturally-competent primary care services with the appropriate providers of care. Community health advocates should have a list of these physicians on hand when enrolling minority residents into health insurance plans. The CHA can also play an important role in connecting patients (particularly ones with Limited English Proficiency) with primary care physicians that are culturally-competent. The effectiveness of this outreach could be verified though focus group data collected from the minority populations within Carney's PSA.

As part of Carney's 150th Anniversary, the hospital could host a health fair that would exhibit the medical services and resources at the hospital as well as highlight Carney's diverse partnerships with community organizations. The hospital will engage organizations that conduct outreach to underserved populations identified through the focus group and survey respondents; immigrants, racial minorities, and persons recently released from prison. Carney's bilingual physicians will be on hand to connect with community members for whom English is not a first language. Carney's community health advocates, who are also bilingual, could conduct insurance enrollment for participants while at the fair.

## Behavioral Health

### Health System Recommendation:

- Develop a collaborative care committee, in which Carney would partner with community organizations to link behavioral health patients struggling to manage their disease with local mental health resources.

### Community-wide Recommendation:

- Partner with community organizations to conduct education around coping mechanisms for trauma.

One major concern identified in the focus group was an overall lack of behavioral health resources in Carney's community. Collaborative Care Committees, also known as CCCs, have been effective in Steward's hospitals as a way of collaborating with community partners to help behavioral health patients struggling to manage their disease. By joining forces with the police department, mental health facilities, fire departments, and other organizations in the community, Carney can link behavioral health patients with resources that can help them not only manage their disease better, but also improve their overall health and quality of life.

Trauma, in both youth and adults, was also identified as an area of concern in the focus group and in surveys completed by Carney community members. Specifically, participants raised concerns about the lack of resources to handle the after effects of trauma within the community. Carney should partner with local community health centers and other organizations to raise awareness about the detrimental effects of trauma and to help remove the stigma around getting help. Often, there are stigma toward receiving treatment for mental health issues, especially in certain cultural communities. Carney and its community partners should conduct more research in certain populations to determine the best way to conduct culturally-appropriate outreach on trauma and mental health issues.

## Sexual and Reproductive Health

### Community-Wide Recommendation:

- Partner with local community organizations to conduct STD education, especially within the young adult population.
- Work with schools and workplaces in the community.

With high rates of chlamydia and gonorrhea within Carney's PSA, more education and raised awareness of resources could be useful in reducing incidence rates. Carney should partner with local community health centers to conduct education on STD transmission, and where to get more information on sexual health issues. Other potential partners could be the Dorchester Y or other organizations that have a large young adult population. Physicians from Carney could be used in this education series to provide expertise on the topic.

## Substance Abuse

### Healthy System Recommendation:

- Institute a patient navigator that will link individuals with substance abuse disorders to clinical services, as well as primary care, social, and mental health services in the community.

### Community-wide Recommendation:

- Continue collaboration with the Dorchester Substance Abuse Coalition.

The substance abuse mortality rate is significantly higher than the Boston average in some parts of Carney's PSA. In collaboration with the Boston Public Health Commission, St. Elizabeth's Medical Center and local community health centers, it is recommended that Carney develop the Providing Access to Addictions, Treatment, Hope and Support Program (PAATHS) Program, an enhanced resource and referral center for individuals with substance abuse disorders (SUD); particularly those identified as most at risk for fatal and non-fatal overdose. The PAATHS program will operate with a navigator who will identify needed services and supports, as well as provide care and linkages to care that address all of the clinical and non-clinical care needs of the individuals. The navigator, who will be out stationed at community-based health facilities on a regularly-scheduled rotation, will effectively link active drug users with clinical services that incorporate primary care, social, and mental health services and will improve engagement, retention, and adherence. The presence of a staff resource dedicated to substance abuse issues will support primary care teams at the partnering health facilities.

Dorchester Substance Abuse Coalition (DSAC) is a grassroots organization dedicated to reducing, preventing, and eliminating substance use and abuse among youth in our community. As a founding member of the coalition, Carney should continue to collaborate with community organizations such as the Boston Public Health Commission, and the Dorchester Police Department to address the risk factors leading to substance use and abuse, and educate parents and loved ones about prevention and treatment. The coalition facilitates capacity building programs for non-profits and community based organizations, collaborative program planning, and facilitation of support groups and information sessions for youth and adults.

## Crime

### Community-wide Strategy:

- Collaborate with community schools and the police department to support school-based crime prevention programming.
- Institute a trauma support group for the community.

Crime and violence are a major issue in much of Carney's PSA. Mattapan's homicide rate is over four times that of Boston, and both North and South Dorchester have large homicide rates as well. Youth violence in particular was identified as an area of concern in Carney's PSA from the focus group and survey responses. It is recommended that the hospital support school-based programs to increase awareness of the crime and safety issues in Dorchester and surrounding areas. This should also include information on violence prevention techniques. By collaborating with the school system and the Dorchester police department, more research can be done to inform the development of an effective anti-crime program for the diverse public school population. Additionally, a peer to peer anti-bullying program could be developed and implemented as a school based intervention.

Trauma was identified in the focus group as a large issue within Carney's PSA. Carney's behavioral health department, in collaboration with neighborhood trauma support centers, could start a trauma support group that meets at local community center. To better focus our interventions in this area, more research should be done to determine which age groups, geographic area, or population groups are in need of additional support to improve health outcomes in this area.

## Limitations

Thorough data collection was done on the PSA; however, some online data sources (secondary data) lacked information on certain towns or neighborhoods. Often these were towns that had smaller populations or were neighborhoods within a major city, such as Boston. In such cases we could only collect data where it existed. In order to compensate for the lack of secondary data, we collected first-hand community input (primary data) that represented the smaller towns and neighborhoods. Moving forward, we will collect more detailed quantitative data and continue to research available secondary data sources to fill the data gaps.

Focus group data was collected for the PHIR. Though a focus group informs the report with essential primary data from the community, there are some limitations. Focus group data is qualitative, not quantitative, because it is based on the opinions of a very small number of participants. The small sample size means the groups might not be a good representation of the larger population.

Community-based organizations in Carney's PSA were surveyed to gather input on the community. A major limitation is that organizations focus on their mission and constituents, which may not directly align with or be representative of the community as a whole. Additionally, a sampling of community-based organizations may not accurately represent the larger population.

## Appendix A: Methods

The Massachusetts Department of Public Health-defined service area for Carney Hospital was used as the geographical area for this report. This service area includes North Dorchester, South Dorchester, Hyde Park, Mattapan, and Milton. Secondary data was collected by Steward Health Care community health managers for the hospital's primary service area as defined by the Massachusetts Department of Public Health. Four out of the five service areas for Carney are neighborhoods within the city of Boston. For some of the secondary data resources, individual neighborhood data was rolled into the Boston City statistic. For the instances where individual neighborhood data was not available, Boston City data is presented in this report. Online research of administrative policies and legal ordinances were done to identify and analyze policies and regulations that affect population health status. Sources included:

- United States Census [www.census.gov](http://www.census.gov)
- The Massachusetts Executive Office of Health and Human Services' Massachusetts Community Health Information Profile (MassCHIP) <http://www.mass.gov/eohhs/researcher/community-health/masschip/>
- Massachusetts Department of Elementary and Secondary Education <http://www.doe.mass.edu/>
- Federal Reserve Bank of Boston, Research Department <http://www.bos.frb.org/>
- Massachusetts Department of Public Health Bureau of Health Information, Statistics, Research and Evaluation
- American Journal of Public Health <http://ajph.aphapublications.org/>
- Health of Boston Reports; Boston Public Health Commission <http://www.bphc.org/about/research/Pages/HOB2011.aspx>

- Massachusetts Department of Public Health HIV/AIDS Surveillance Program, Bureau of Communicable Disease Control Registries
- Massachusetts Crime Reporting Unit Web Site <http://www.ucrstats.com>

Carney gathered primary data through a survey to community providers and opinion leaders and through a focus group which contained a demographic survey, an evaluation survey, and a consent form. A community provider survey entitled “2012 Carney Hospital Community Health Needs Assessment Survey” was sent on Oct. 22, 2012 to sixteen community leaders affiliated with health services, social services, business, churches, education, families, youth, adults, and seniors. Five people responded to the survey.

The focus group was held on November 13, 2012 from 6:00 p.m. to 7:30 p.m. at Carney Hospital. The event was advertised through an email distributed to members of Carney Hospital’s Community Benefits Advisory Board. Nine residents from Dorchester, Mattapan and Milton attended the meeting. Attendees were asked to complete a consent form, demographic survey, and evaluation. A light dinner and refreshments was served for all participants.

**Table 6: Focus Group Participants Characteristics**

<b>Q1. What is your current age?</b>	<b>Frequency</b>
18-25	0
26-35	2
36-45	3
46-55	1
56-65	1
66-75	2
76+	0
<b>Q2. What is your biological sex?</b>	
Male	2
Female	7
Intersex	0
<b>Q3. What is your gender identity?</b>	
Male	2
Female	7
Transgendered	0
Other (Specify)	0
<b>Q4. Which group below most accurately describes your racial background?</b>	
Alaskan Native/Native American/Indigenous	0
Asian	0
Black/African-American	6
Latino(a)/Hispanic (Non-White)	0
Pacific-Islander/Native Hawaiian	0
White	1
Multiracial	0
Other (Please Specify)	1 Cape Verdean, 1 Nigerian-American
<b>Q5. What is the highest grade in school, year in college, or post-college degree work you've completed?</b>	
Less than high school	0
9th-12th grade (No diploma)	0
High school graduate or equivalency	0
Some college (no degree)	1
Associate's Degree	3
Bachelor's Degree	2
Graduate/Professional Degree	3
Other (Please Specify)	0

For further information on methods, please contact Michelle Reid, Community Health Manager, Carney Hospital at [Michelle.Reid@Steward.org](mailto:Michelle.Reid@Steward.org).

# Appendix B: Supplementary Health Indicator Figures

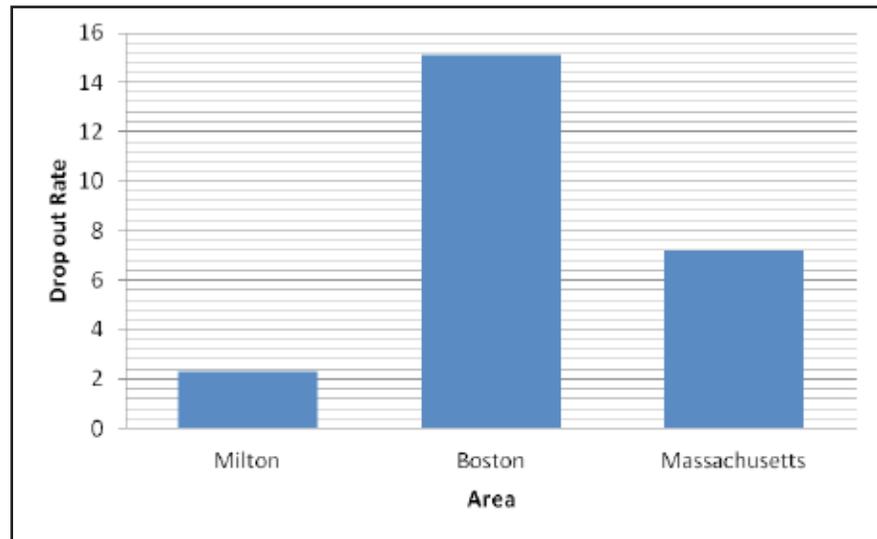
1. Diversity of Public School Population (2011)
2. High School Dropout Rate (2008-2011)
3. Educational Attainment, by Town
4. Median Household Income Inflated Adjusted Dollars (2009).
5. of Families with Income Below Poverty Level by Family Type 2005-2009
6. Number of Supplemental Nutrition Assistance Program Cases- 2008 and 2010
7. Annual Unemployment Rate 16 years and over (2010)
8. Number of Foreclosures in 2007, 2008 and 2009
9. Percentage of Owner Occupied Housing Units v. Renter Occupied Housing Units and Average Household Size.
10. Percentage of Adults Self-Reported as having Asthma- 2011
11. Percentage of Low Weight Births- 2007, 2008, 2009 combined
12. Adequate Prenatal Care
13. Local Policies Affecting Health

### 1. Diversity of Public School (Percent of Population)-2011.

Public School Population	Boston	Milton	MA (%)
White, non-Hispanic	12.6	80.6	68.0
Black/African-American	33.7	4.7	8.3
Hispanic	43	3.7	16.1
Asian	8.3	9.8	5.7
Other	0.4	0.1	0.3
Two or More Races	1.9	1	2.5

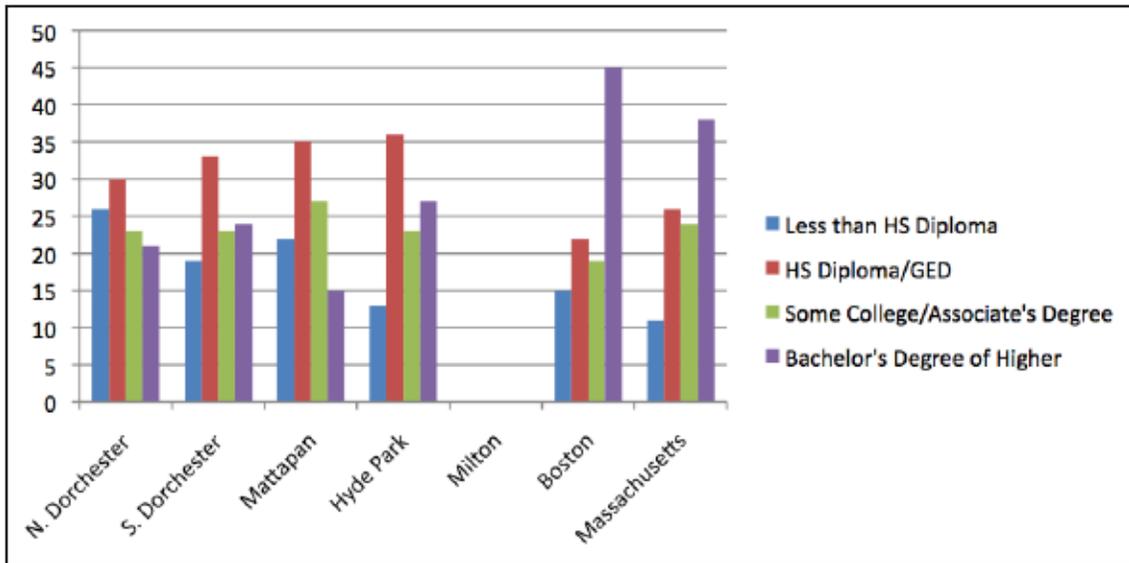
Source: MA Department of Elementary and Secondary Education, District Profiles, 2011.

### 2. High School Drop-out Rates (2008-2011).



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

**3. Educational Attainment (by percent of population Age 25+) 2005-2009.**



Source: Health of Boston 2011.

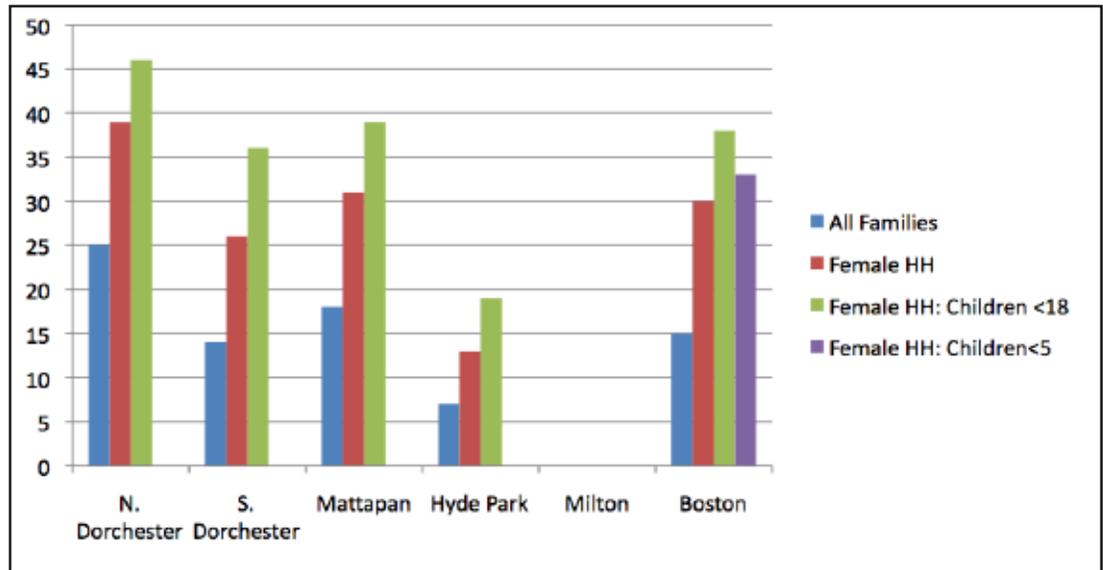
**4. Median Household Income Inflated Adjusted Dollars (2009).**

**Median Household Income Range**

	\$25000-\$40000	\$42000-\$55,000	\$56,000-\$70,000
Neighborhoods /City/State	N. Dorchester	S. Dorchester, Mattapan, Hyde Park, United States, Boston (City)	Massachusetts

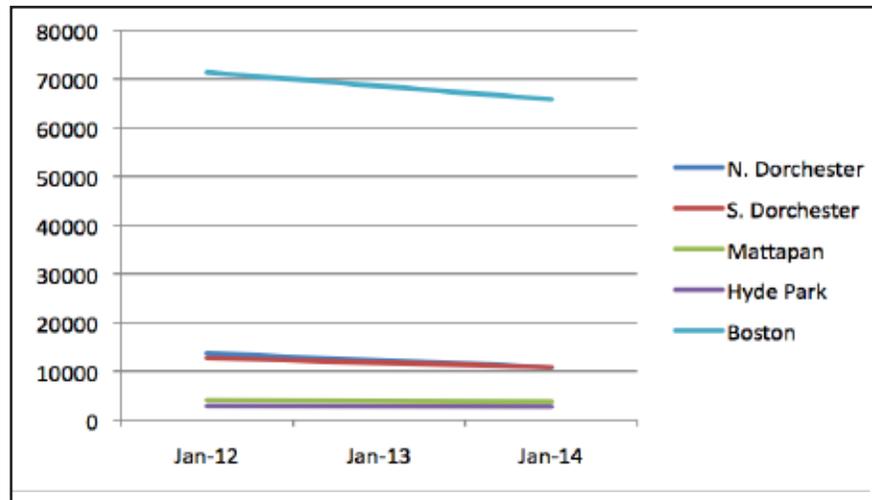
Source: Health of Boston 2011.

5. % of Families with Income Below Poverty Level by Family Type 2005-2009.



Source: Health of Boston 2011.

6. Number of Supplemental Nutrition Assistance Program Cases- 2008 and 2010.



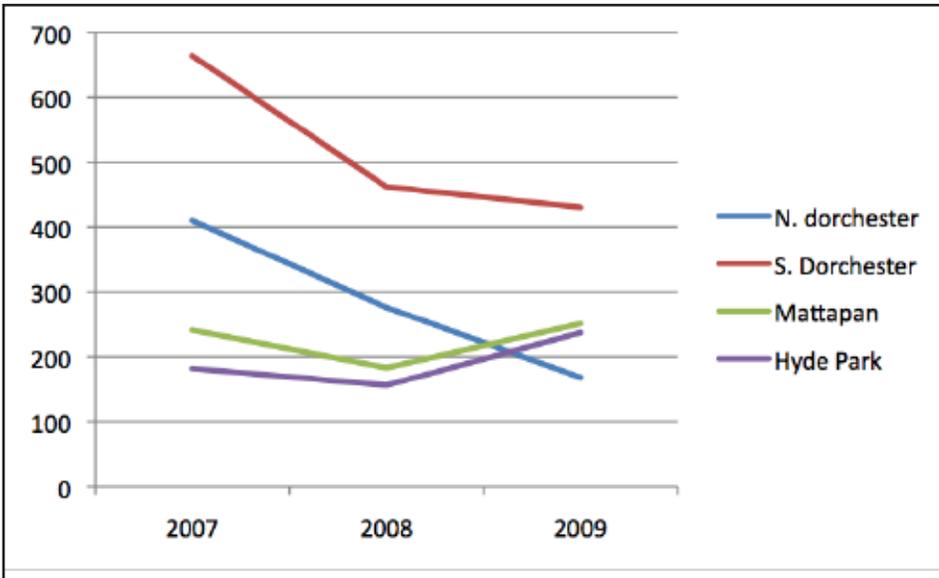
Source: Health of Boston 2011

7. Annual Unemployment Rate, 16 years and over (2010).



Source: US Census

8. Number of Foreclosures in 2007, 2008 and 2009.



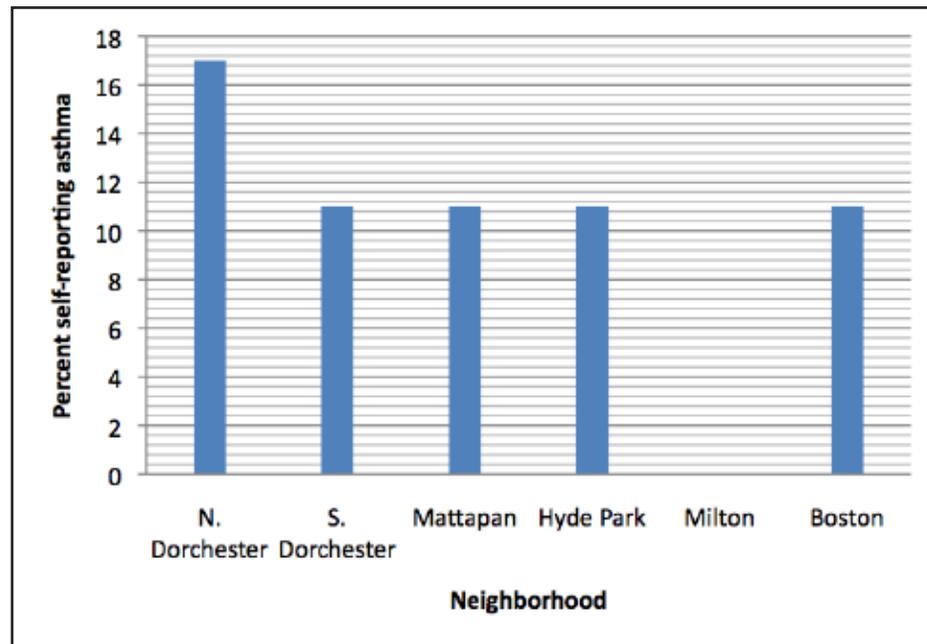
Source: Health of Boston 2011

### 9. Percentage of Owner Occupied Housing Units v. Renter Occupied Housing Units and Average Household Size.

	N. Dorchester	S. Dorchester	Mattapan	Hyde Park	Boston
% Owner Occupied Housing Units	30	40.9	35.5	57.6	33.9
Average Household Size of Owner-Occupied Units	2.6	2.9	2.9	3	2.4
% Renter Occupied Housing Units	69.9	59	64.5	42.2	66
Average Household Size of Renter Occupied Housing	2.6	2.7	2.7	2.4	2.2

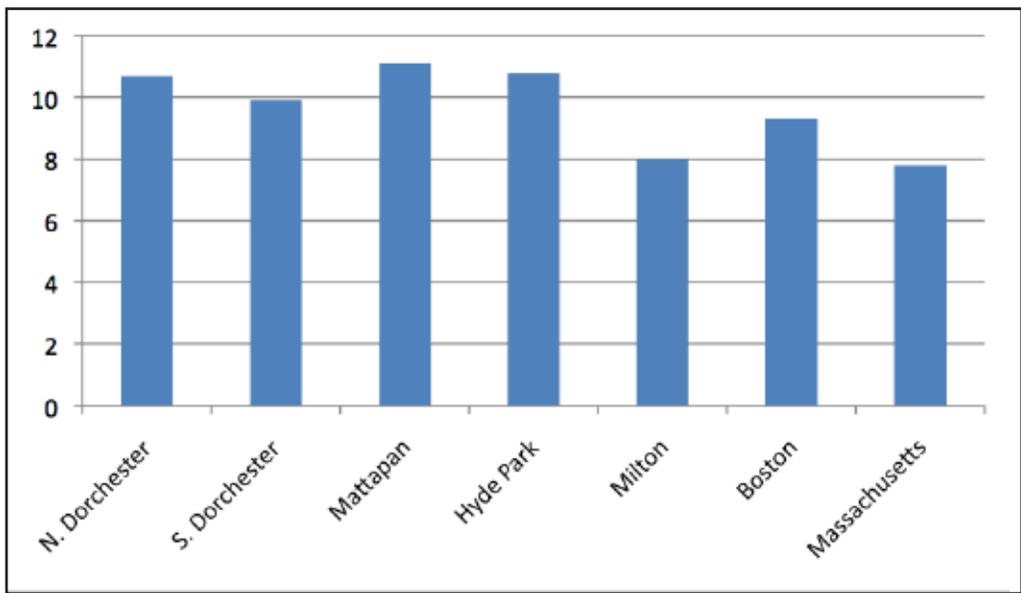
Source: Health of Boston 2011.

### 10. Percentage of Adults Self-Reported as having Asthma- 2011.



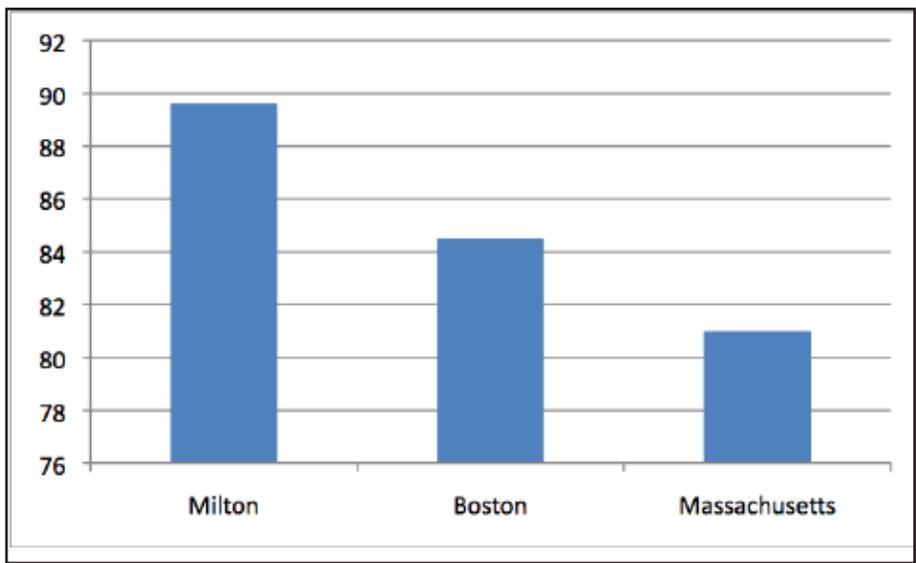
Source: Health of Boston 2011.

11. Percentage of Low Weight Births- 2007, 2008, 2009 combined.



Source: Health of Boston 2011.

12. Percentage of Women receiving Prenatal Care.



Source: MassCHIP

### 13. Local Ordinances Affecting Health- 2010.

	<b>Obesity</b>	<b>Tobacco</b>	<b>Cancer Prevention</b>	<b>Schools</b>	<b>Zoning</b>
Dorchester	-Sugar Sweetened beverage ban on city property. -Ban on serving food with artificial trans fat*	-Smoke-free restaurants, workplaces, and hotels	-Cancer Prevention and Control Program through DPH -Mayor's Cancer Ride program	-Wellness policy, Chef initiative to improve nutritional choices at schools.	Open space plan for increased use of open space districts, Urban agriculture Initiative
Mattapan	-Sugar Sweetened beverage ban on city property. -Ban on serving food with artificial trans fat*	Smoke-free restaurants, workplaces, and hotels	-Cancer Prevention and Control Program through DPH -Mayor's Cancer Ride program	-Wellness policy, Chef initiative to improve nutritional choices at schools.	Open space plan for increased use of open space districts, Urban agriculture Initiative
Hyde Park	-Sugar Sweetened beverage ban on city property. -Ban on serving food with artificial trans fat*	Smoke-free restaurants, workplaces, and hotels	-Cancer Prevention and Control Program through DPH -Mayor's Cancer Ride program	-Wellness policy, Chef initiative to improve nutritional choices at schools.	Open space plan for increased use of open space districts, Urban agriculture Initiative
Milton	None	Smoke-free workplace, outdoor restaurants and bars,		Milton walks to school campaign	Open space and recreation requirements

*\*Does not include the sale of any food or beverage containing artificial trans -fat that is in a manufacturer's original sealed package and is required by federal and or state law to have nutrition labeling.*

# Appendix C. Community Provider Survey Questions

1. How would you identify your geographic service area (town, city, zip code, etc.)?
2. How would you identify the community that you work with?
3. What is healthy about the community you work with?
  - a. What is unhealthy?
4. What are the top three areas of concern within the community that you work with?
  - a. What are some strategies that could address these concerns?
5. What are the top three health concerns within the community you work with?
  - a. What are some strategies that could address these concerns?
6. What do you feel are the biggest obstacles to health access within the community you work with?
7. What populations would you identify as underserved or underrepresented within the community?
8. What services do you perceive as being most needed within the community?
  - a. Which population would most benefit from this service?
9. In what ways is Carney Hospital serving the community well?
10. In what ways could Carney Hospital serve the community better?
11. What is the number one thing that Carney Hospital can do to improve the health and quality of life of the community?
12. Is mental health a primary concern within the community?
  - a. What about mental health is a concern?
  - b. How might this concern be addressed?
13. Is nutrition a primary concern within the community?
  - a. What about nutrition is a concern?
  - b. How might this concern be addressed?
14. Is there any other concern that you would like to address?

## Appendix D. Focus Group Questions.

1. Is there a sense of community where you live?
  - a. Why or why not?
2. What is healthy about your community?
3. What are the top three areas of health concern within the community?
  - a. What are some strategies that could address these concerns?
4. What populations would you identify as underserved or underrepresented within the community?
5. What do you feel are the biggest obstacles to health access for your community?
6. Is mental health a major issue within your community?
  - a. Do you know a lot of people with mental health issues?
7. Do you have issues with chronic disease (Chronic disease are health issues like diabetes, hypertension, obesity which require continuous monitoring and treatment)?
  - a. How do these issues affect the way you live work play? (to the moderator look for possible issues that chronic disease causes – asthma preventing school attendance, diabetes hindering job prospects)
8. Do you have or do you know of anybody with issues of Dementia or Alzheimer?
  - a. Do you see this issue as increasing, decreasing or staying the same?
9. When was the last time you had dental work done?
  - a. What was it?
10. How often do you have your teeth cleaned and checked?
11. How easy or hard is it to access dental health resources/services?
12. What services do you perceive as being most needed within the community?
13. In what ways is Carney Hospital serving the community well?
14. In what ways could Carney Hospital serve the community better?
15. What is the number one thing that the Carney Hospital can do to improve the health and quality of life of the community?





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