Brockton
Neighborhood
Health Center

Market Assessment to Evaluate Expansion Opportunities

January, 2014

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CAPITAL LINK

Acknowledgement

Capital Link gratefully acknowledges support from the Bureau of Primary Health Care, Health Resources and Services Administration, U.S. Department of Health and Human Services for the development of this document.

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Introduction and Summary

Brockton Neighborhood Health Center (BNHC) is a non-profit, multicultural, community health center. Incorporated in 1992, BNHC began providing services in 1994 in a mobile medical van operating out of a church parking lot. In its efforts to meet the health care needs of the community, Brockton Neighborhood Health Center constructed a new $17 million community health center, and began seeing patients in this new facility in November 2007. The new facility doubled the health center's capacity to serve low-income, diverse, medically underserved patients in Brockton and surrounding communities. BNHC is a comprehensive health home that provides primary medical, behavioral health and dental services. BNHC seeks to achieve health equity in its community by providing affordable, accessible, quality health care services to all who seek it, accepting payment for services using a comprehensive sliding fee scale that takes into account family income and family size.

Brockton Neighborhood Health Center has experienced significant growth over the past decade; according to internal data based on fiscal year visits, BNHC has grown from providing 50,800 total annual visits in 2003 to 143,000 annual visits in 2013, for an average annual growth of 18%. As the analysis and graphics in this report demonstrate, much of this growth has been driven by the adult patient population within the city of Brockton. Within the Brockton service area alone, nearly 77% of all patients are over the age of 18.

This market assessment focuses on the additional demand for primary care services within Brockton, in addition to exploring the market potential of six other service areas: Attleboro, Bridgewater, Randolph, Rockland, Stoughton, and Taunton. A scoring system that weighed demographic trends, health needs, competition, demand and transportation access was used to compare the service areas. While Brockton continues to be the most favorable for expansion, Stoughton and Attleboro also demonstrated favorable scores indicating expansion potential.

The analysis compiled in this report indicates that there are an estimated 13,400 low-income residents who are not currently being seen by BNHC or any other FQHC within the Brockton service area, nearly 5,000 of whom are adults between the ages of 18 and 64. This sizeable population makes the case for expansion of the health center's adult medicine programs, but a modest effort is recommended as competition from other primary care providers accepting MassHealth is notable for primary care. Competition from other dental providers is also high (at least for child dental services) but weak for mental health services, for which BNHC staff has noted there is typically a long waiting list.

Within Attleboro and Stoughton, there are 8,000 and 4,000 low-income residents respectively who are not currently served by a community health center. Attleboro is particularly poorly served for dental care as well as mental health services, and had the second highest number of health indicators that were poorer than the state average. For both of these markets, additional primary data gathering is recommended to understand the existing primary care providers that are accepting new MassHealth patients.

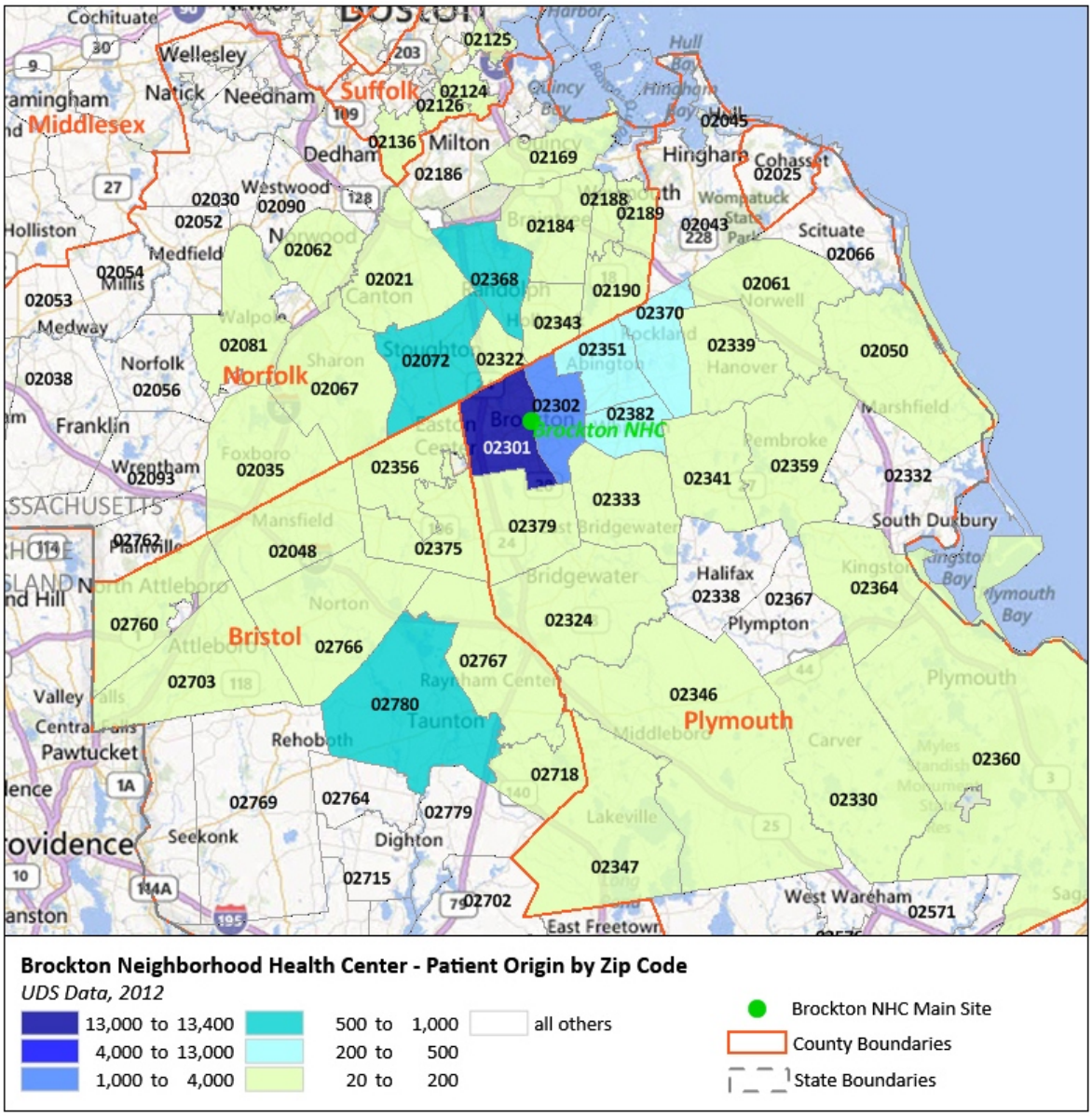
Overview of BNHC's Existing and Potential Service Areas

Brockton Neighborhood Health Center (BNHC) primarily serves the City of Brockton, but also has a notable and growing presence in other communities on the South Shore. As the following graphics demonstrate, BNHC's footprint spreads across much of Plymouth County, southern Norfolk County, and the northeastern portion of Bristol County.

Review of Patient Trends

Community health centers are required to report patients by zip code as part of their annual Uniform Data System (UDS) documentation submitted annually to the federal Health Services and Resources Administration (HRSA). From this data, it is possible to thematically map a health center's patient origin. For reference, these service areas are based upon actual users and may not precisely match other stated service areas such as those presented in federal grant applications and reports.

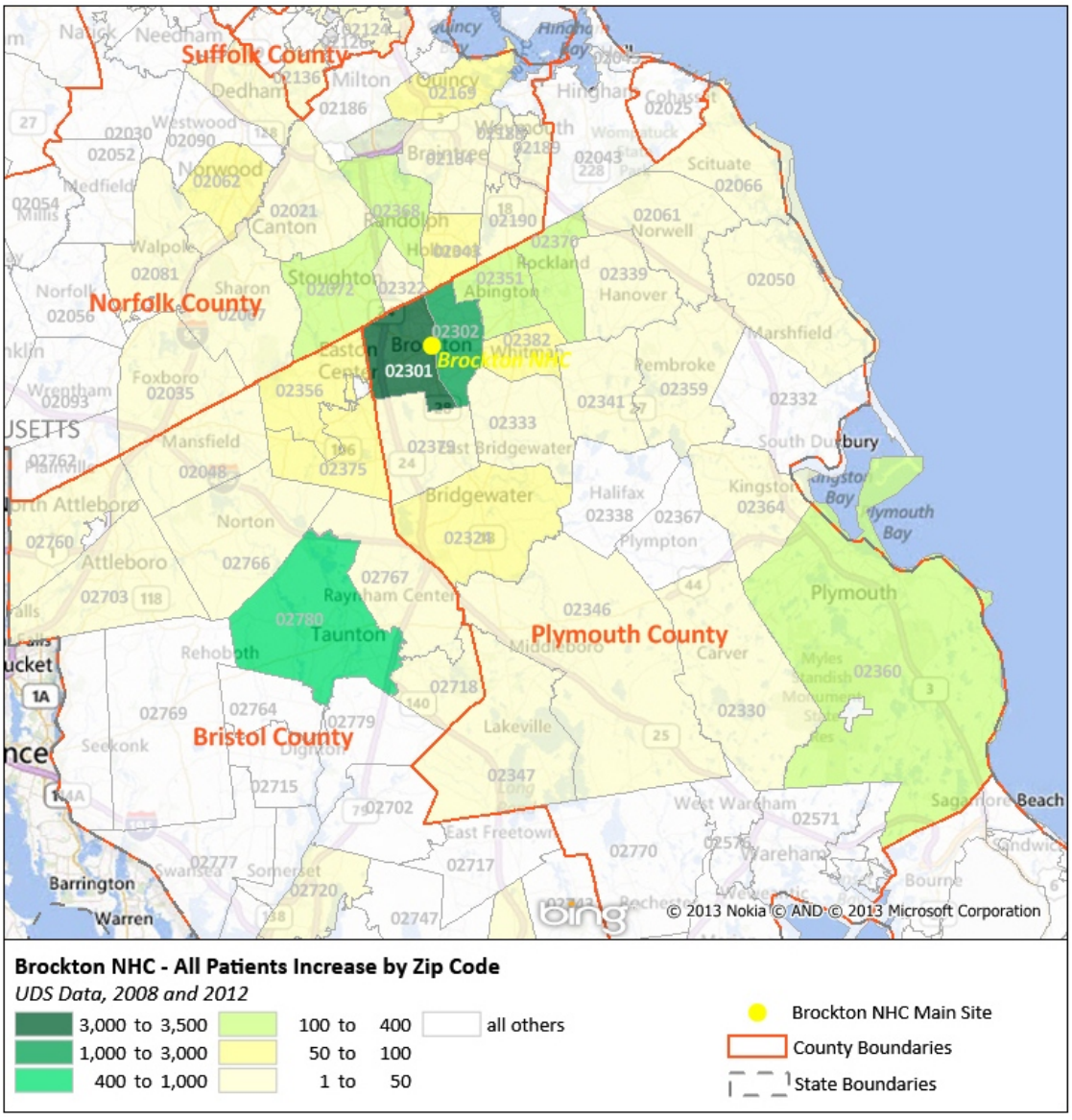
Graphic 1: BNHC Patient Origin by Zip Code, 2012 UDS



As the graphic above indicates, the vast majority of BNHC's nearly 27,000 annual patients come from within the city of Brockton. As of 2012, over 13,000 patients came from zip code 02301, while another 3,500 patients resided in Brockton zip code 02302. Thus these two Brockton zip codes combined represent 71% of the total patient base. The next largest patient bases were much smaller, from 860 patients in each of Taunton and Stoughton, to 630 patients from Randolph.

Prepared by aggregating internal data for patients by zip code, the graphic below indicates the increase in the number of all patients by zip code over a five-year period, between the 2008 and 2012 calendar years. Zip code 02301, which represents the majority of BNHC patients, had the largest numeric increase in all patients of 3,325 over the five-year period, representing growth of 33%. Zip code 02302 had a proportionately greater increase in patients (1,385), representing 65% growth. Taunton represented a smaller numeric change (450), but the greatest change in terms of percentage growth: 108%.

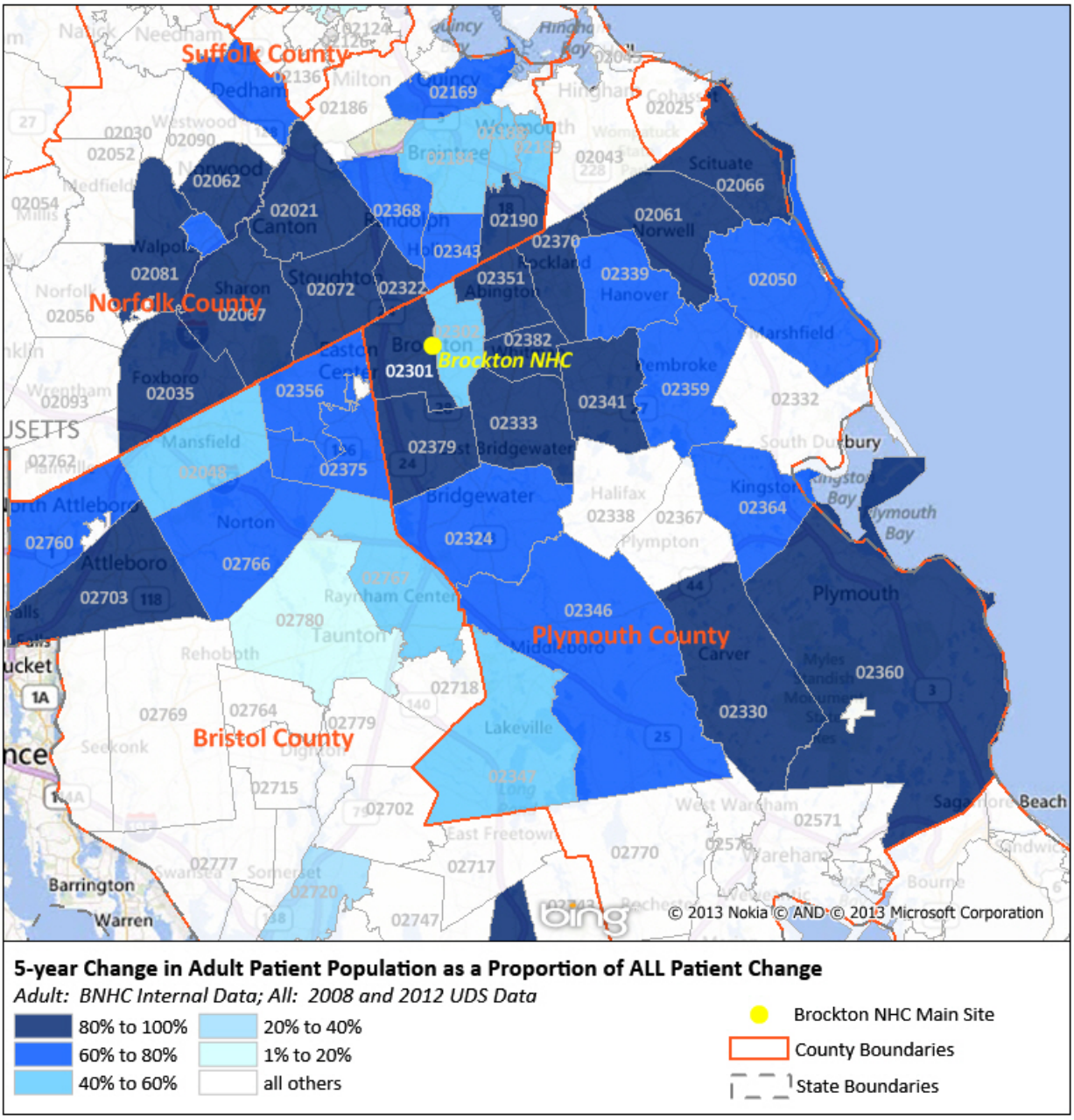
Graphic 2: Numeric Change in Patients by Zip Code, 2008 to 2012 (BNHC Internal Data)



The next graphic demonstrates that with few exceptions, adult patients (those aged 19 years and older) represented the vast majority of patient growth from most zip codes. Any zip code shaded dark blue indicates a region where 80% or more of all patient growth was driven by adult patients, while the next darkest shade of blue indicates zip codes in which adults comprised 60% to 80% of all patient growth.

For example, adults comprised 80% of all patient growth in zip code 02301 between 2008 and 2012. In contrast, adult patients represented 56% of all patient growth in zip code 02302, suggesting a more even growth pattern that more closely resembles the general population. For further comparison, only 14% of all patient growth in Taunton was by the adult population, indicating that a very different, younger patient base has historically been the driver for patient growth within this region.

Graphic 3: Percent of Five-Year Change in All Patients Represented by Adult Patients (19+) by Zip Code, 2008 to 2012 (BNHC Internal Data)



Demographic Trends

The charts below provide information on demographic trends within the Brockton service area. While growth in the overall population in Brockton has been relatively flat between 2000 and 2010, a more detailed analysis of the population under the age of 20, from 20 to 44, and 45 and older reveals important trends. While the two younger age groups showed a decline in growth, the 45+ population grew by 15% over ten years. This group was expected to grow by 3% in 2013 and another 2% by 2018 while the younger groups continue to decline in size or remain relatively flat.[1] Brockton is also expected to continue growing in diversity, which is already significant compared to surrounding communities (including Plymouth County, in which 85% of all residents are white).

Table 1: Demographic Trends, Brockton Service Area

Indicator	2000	2010	% Change	2013 Estimated	% Change	2018 Projected	% Change
Population	94,086	94,063	0%	94,740	1%	94,412	0%
Median Age in Years	34.0	35.9	6%	36.5	2%	36.7	1%
Per Capita Income	$16,910	$22,217	31%	$22,996	4%	$25,849	12%
Median Household Income	$39,503	$48,900	24%	$50,094	2%	$55,693	11%
Population Under 20	28,708	26,851	-6%	26,084	-3%	25,527	-2%
Population 21 to 44	34,731	31,875	-8%	32,284	1%	31,814	-1%
Population 45 and up	30,622	35,338	15%	36,372	3%	37,070	2%

Indicator	2010	% Total Population	2013 Estimated	% Total Population	2018 Projected	% Total Population
White	44,074	47%	43,040	45%	41,699	44%
Black	29,271	31%	29,985	32%	30,566	32%
Asian or Pacific Islander	2,204	2%	2,513	3%	2,664	3%
Some Other Race	12,028	13%	12,021	13%	11,827	13%
Two or More Races	6,486	7%	7,182	8%	7,656	8%
Hispanic Ethnicity*	9,360	10%	10,668	11%	11,809	13%

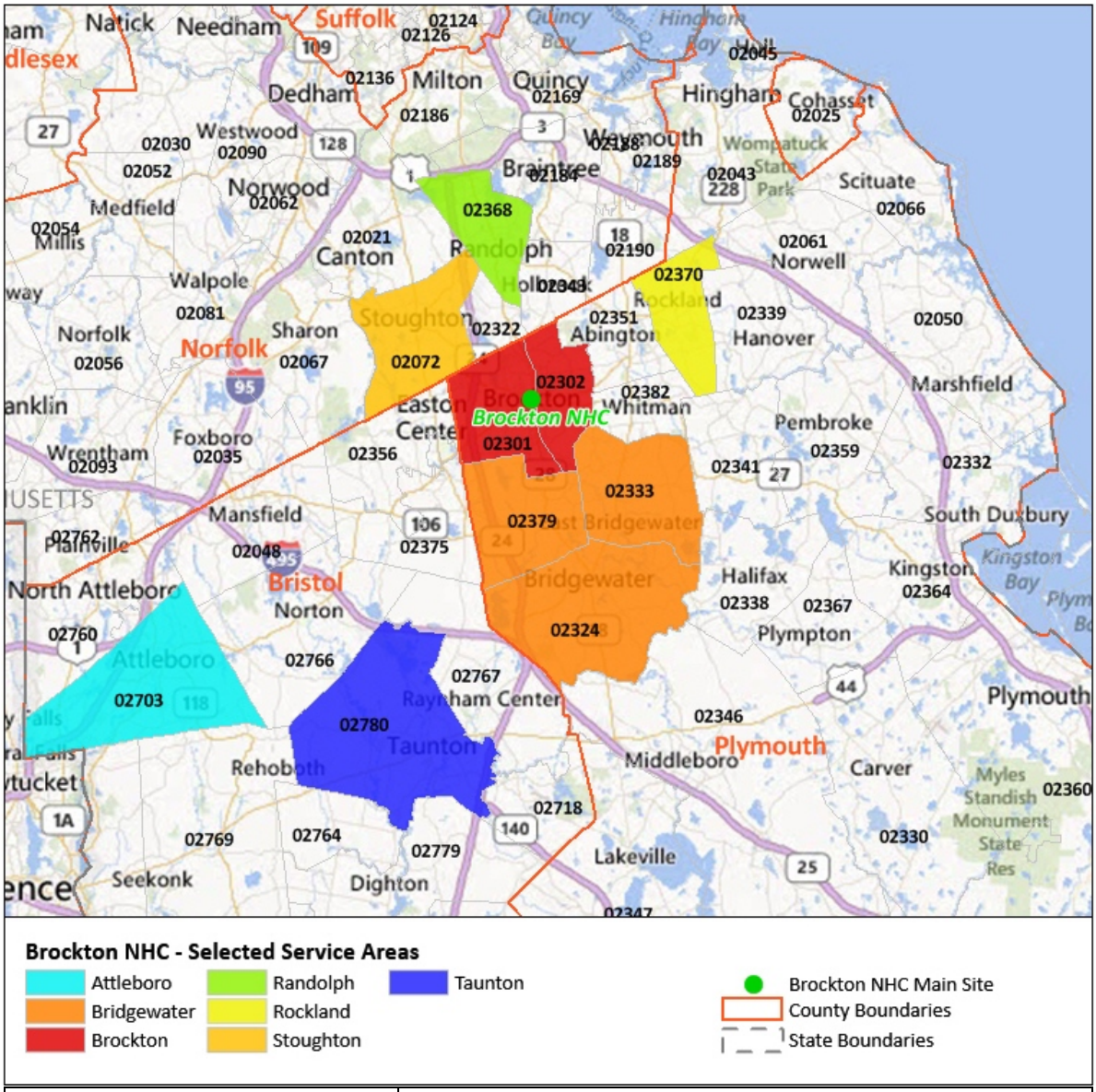
Brockton and Six Potential Service Areas

BNHC has chosen to focus this study on the market potential found within Brockton, as well as in six other service areas in nearby communities: Attleboro, Bridgewater, Randolph, Rockland, Stoughton,

[1] All 2013 demographic and population estimates and 2018 population projections are provided by DemographicsNow, www.demographicsnow.com.

and Taunton.[2] The map and table below indicate the definition of each of the service areas selected for study, which are outlined by zip code.

Graphic 4: Overview of Service Areas Selected by BNHC for Analysis



Brockton Service Area	02301, 02302
Attleboro Service Area	02703
Bridgewater Service Area	02324, 02333, 02379
Randolph Service Area	02368
Rockland Service Area	02370
Stoughton Service Area	02072
Taunton Service Area	02780

[2] Please note that Taunton has been excluded from any final selections despite its favorable rating because a competing health center recently received a New Access Point Award to provide health care to residents in this area.

The six service areas and Brockton are located across county lines within Bristol, Plymouth and Norfolk Counties within the South Shore of Massachusetts. More information on the patient population, including adult patients, within each zip code is presented in the tables below. The regions expected to grow the most from 2013 to 2018 are Attleboro and Bridgewater, followed by Stoughton.

Table 2: Total Population and 2013 BNHC Patients by Service Area

Service Area	2013 Total BNHC Patients	Total Population, 2013	Projected Population Growth, 2013 to 2018
Brockton Service Area	16,861	94,740	-0.3%
Stoughton Service Area	862	27,666	1.8%
Bridgewater Service Area	409	47,469	2.3%
Rockland Service Area	377	17,688	1.4%
Randolph Service Area	632	32,489	0.4%
Attleboro Service Area	97	43,465	3.1%
Taunton Service Area	866	48,985	0.5%

The next table focuses on growth trends of the adult patient population at BNHC. Internal data was aggregated to tabulate adult patients (aged 19 and older) by zip code for 2008 and 2012 to understand the growth rate by service area.

Table 3: Adult BNHC Patients by Service Area

Service Area	2008 BNHC Adult Patients (19+)	2012 BNHC Adult Patients (19+)	# New adult patients	5-year % change in adult patients	Projected Growth of Adult Population 20+, 2013 to 2018
Brockton Service Area	9,565	12,967	3,402	36%	0.3%
Stoughton Service Area	506	736	230	45%	2.8%
Bridgewater Service Area	292	378	86	29%	3.8%
Rockland Service Area	205	349	144	70%	2.1%
Randolph Service Area	351	504	153	44%	1.1%
Attleboro Service Area	53	89	36	68%	3.9%
Taunton Service Area	420	484	64	15%	1.2%

The data points from the above table further demonstrate that residents from the Brockton Service Area comprise the largest portion of the patient population, if not the fastest growing. Greater growth rates in the adult patient population are found in Attleboro, Rockland and Stoughton, yet actual patient growth numbers are much smaller, ranging from 230 to just 36 new patients over five years. Additional demographic data of the six service areas outside of Brockton has been included in the Appendix, and additional analysis on all seven service areas will be included throughout this report.

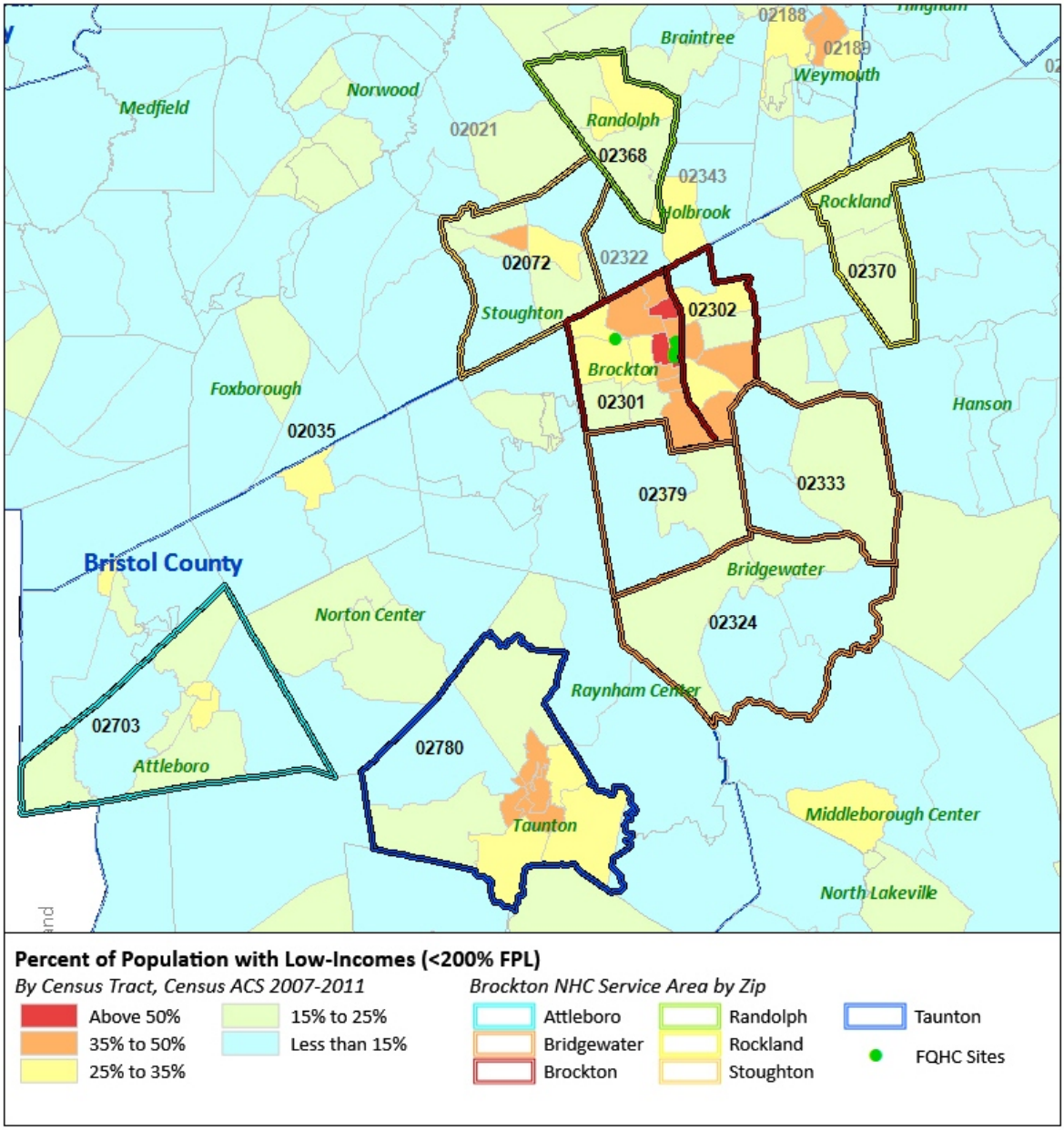
Visualization of Populations below 200% of the Poverty Level

Because 96% of BNHC patients whose income is known fall under the 200% Federal Poverty Level (FPL), understanding the income make-up of a service area is important in determining market share and potential demand. Utilizing the most recent U.S. Census data available, the following graphics

demonstrate this poverty measure by census tract within the city of Brockton as well as the selected service areas along the South Shore.

The two graphics below explore the proportion and absolute number of residents with incomes below the 200% FPL threshold. The graphic directly below clearly indicates that the greatest concentrations of low-income residents can be found in the Brockton service area, which is the only region that contains census tracts in which more than half of the residents are low-income. Stoughton and Taunton also contain census tracts with larger proportions (35% to 50%) of low-income residents.

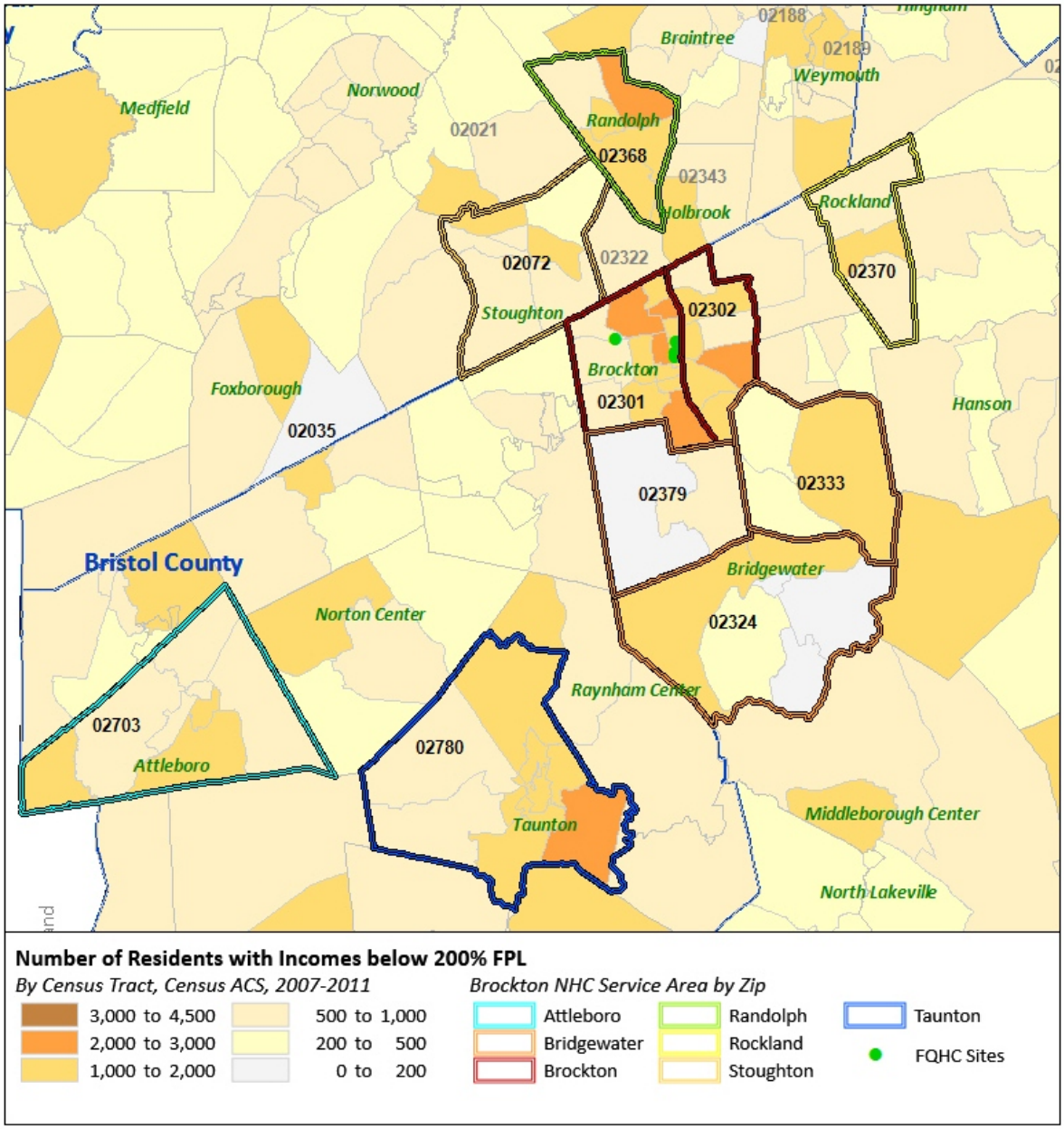
Graphic 5: Percent of Populations with Incomes below 200% of the Federal Poverty Level, by Census Tract, US Census 2007 to 2011 Estimates



However, it is important to also analyze the number of residents below 200% FPL (also called the low-income population), as this population is the most likely to become FQHC patients. The graphic below illustrates the number of low-income residents to be found in each service area. Not surprisingly,

Brockton contains the greatest concentration of low-income residents, followed by Taunton and Randolph. While Attleboro does not contain any census tracts with significant concentrations of low-income residents, it still contains the third greatest total number of low-income residents of the seven service areas.

Graphic 6: Residents with Incomes below 200% of the Federal Poverty Level, by Census Tract



MassHealth Eligibility by Region

Another likely patient population for any FQHC is the population enrolled in Medicaid, or MassHealth as it is called in Massachusetts. The graphic below provides a visualization of the population eligible for the MassHealth program within each zip code. The graphic and table below indicate that BNHC is well-situated to serve the greatest concentration of MassHealth patients in the region. The Brockton service area contains the greatest number of MassHealth-eligible residents (39,600) and the greatest proportion of MassHealth eligibility (a significant 42% of the total population).

Graphic 7: Number MassHealth-Eligible Residents by Zip Code, July 2013

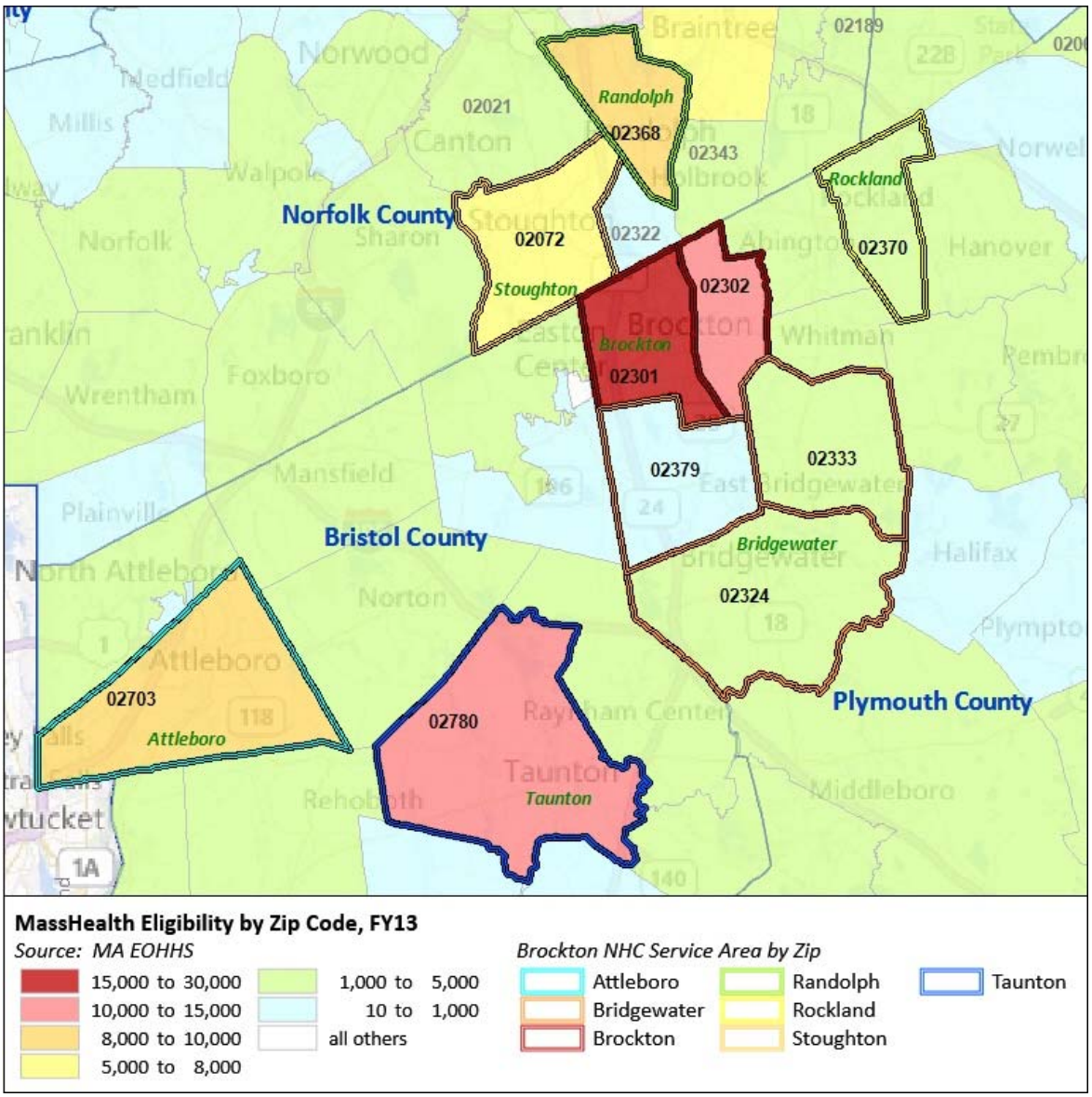


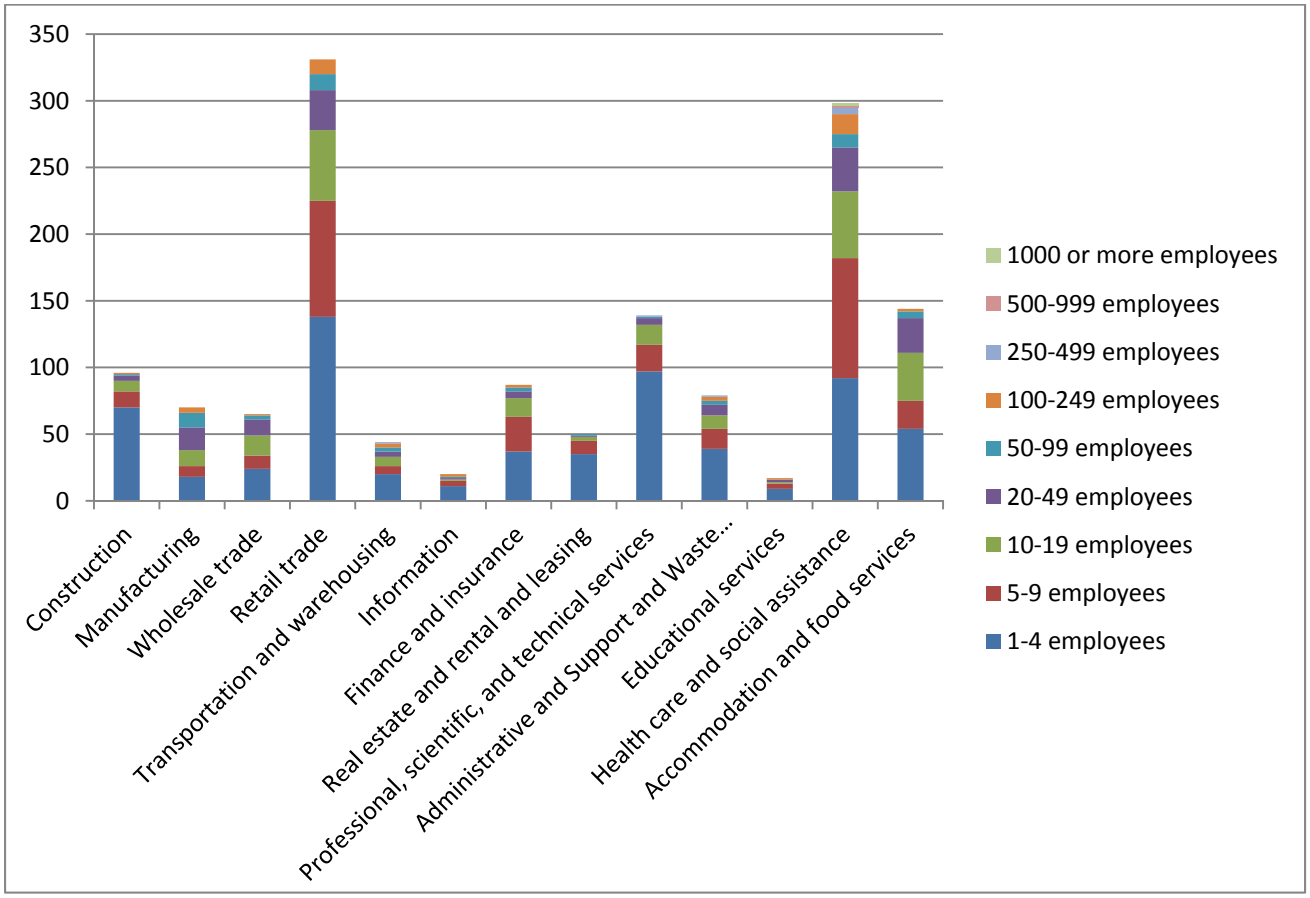
Table 4: MassHealth Eligible Residents by Service Area

Service Area	MassHealth Eligible Residents, FY13	Total Population, 2013	MassHealth Eligible Residents as a Percent of Total Population
Brockton Service Area	39,600	94,740	42%
Stoughton Service Area	5,300	27,666	19%
Bridgewater Service Area	5,200	47,469	11%
Rockland Service Area	4,500	17,688	25%
Randolph Service Area	6,600	32,489	20%
Attleboro Service Area	8,800	43,465	20%
Taunton Service Area	14,400	48,985	29%

Economic Environment

The U.S. Census Bureau annually reports on the number of business establishments with paid employees by geographical area. The graphic presents this information a graphic that is considered relevant to health care planning. Total employment figures were not available at the zip code level, but employment can be approximated by noting the number of establishments with larger numbers of employees, e.g. 1,000 or more.

Graphic 7: Number of Establishments by Industry, Brockton Service Area[3]



Of particular note is that the health care sector is a major employer in the Brockton Service area; there are 298 total health care establishments in the Brockton service area, three of which employ at least 500 people.

Two industries that traditionally have a high proportion of uninsured or under-insured workers are Retail and Accommodations & Food Services. According to the US Census Factfinder, these two industries employed approximately 9,000 residents as of 2012. Employees from the Retail and Accommodations sectors represent the greatest market potential for a community health center for outreach and enrollment, as these industries tend to employ lower-income individuals (and/or pay lower wages) and are less likely to insure their employees adequately.

[3] Census County Business Patterns http://www.census.gov/econ/cbp/index.html

Below is a table that provides detail on trends in unemployment rates, poverty rates and the proportion of low-income residents for each service area. Unemployment rates are relevant to this market assessment because health insurance status is often tied to employment status (although to a lesser extent in Massachusetts given the affordable insurance options available from the state's 2006 health reform effort). The unemployed have to seek health insurance from government programs or other affordable alternatives.

Table 5: Key Economic Indicators by Service Area

	Unemployment Rate, 2012	Poverty Rate, 2012	Percent Low-Income Residents, 2012
Brockton Service Area	13.8%	15.6%	35.7%
Stoughton Service Area	9.5%	8.3%	20.8%
Bridgewater Service Area	7.6%	0.6%	12.3%
Rockland Service Area	11.0%	5.5%	17.1%
Randolph Service Area	10.0%	8.3%	22.2%
Attleboro Service Area	8.4%	6.4%	19.8%
Taunton Service Area	9.2%	13.9%	29.1%

While more current data is available at the county level, more information can be obtained by using 2012 zip-code level data for unemployment from the US Census. The Brockton service area has the greatest unemployment and poverty rates out of all of the service areas analyzed, of 13.8% unemployment, compared to 6.9% unemployment in Plymouth County in 2012 (and 6.3% unemployment in 2013 at the county level). Rockland and Randolph also have significant levels of unemployment that are masked by looking at the unemployment rate for their respective counties. Randolph had 10% unemployment in 2012, compared to 5.6% in Norfolk County in 2012 (and 5.4% unemployment in 2013).

In contrast, the unemployment rates for Attleboro and Taunton are more in line with the greater county-level unemployment. For 2012 Bristol County's unemployment rate was 9.3%, which was quite similar to the 9.2% unemployment in Taunton and higher than the 8.4% unemployment found in Attleboro. The unemployment rate for the county has dropped to 8.3% as of November, 2013; it is reasonable to infer that a similar drop will be observed for Attleboro and Taunton once data is available.

Health Indicators

The table below presents recent health indicator data for Brockton and the state, provided by the Massachusetts Executive Office of Health and Human Services (MA EOHHS).[4] The Healthy People 2020 goal has also been included for reference. As the data illustrates, several Brockton service area health indicators compare favorably with state rates, but most of the statistics show reason for concern.

Table 6: Health Indicators

Health Indicator	Brockton	MA	Healthy People 2020 Goal
Cancer Death Rate per 100,000 population	192.5	170.3	159.9
Prostate Cancer Death Rate per 100,000 male population	29.9	21.1	28.8
% of adult women who have had a pap test in the past 3 years (Community Health Needs Area, or CHNA)	85.0%	84.1%	90.0%
Diabetes Prevalence (CHNA)	9.4%	7.5%	2.5%
Heart Disease Death Rate per 100,000 population	112.6	95.7	166.0
Stroke Death Rate per 100,000 population	30.7	30.9	48.0
% of Adults who have had their blood cholesterol checked in the past 5 years (CHNA)	87.8%	82.6%	80.0%
Obesity Rate (CHNA)	23.9%	22.3%	15.0%
Asthma Hospitalizations per 100,000 population (age 5 through 64)	290.1	127.8	77.0
Chronic Obstructive Pulmonary Death Rate per 100,000 population 45+	96.6	86.9	60.0
Cigarette Smoking among Adults (CHNA)	18.7%	15.0%	12.0%

Of particular concern are the higher-than-average prevalence of diabetes, smoking and obesity, all of which are above the state average and well above the Healthy People 2020 goal. Asthma hospitalizations occur at a rate that is more than double that of the state rate, indicating a great need for additional primary care interventions for this chronic condition.

Additional health indicator data for the six other service areas is included at the end of this report, including the number of health indicators for each community that exceeded the state average. Both Brockton and Taunton had poorer than state average performance on eleven out of thirteen indicators, while Attleboro and Bridgewater performed less favorably than the state for ten indicators out of the thirteen.

[4] MA EOHHS Instant Topics by community and CNHA, http://www.mass.gov/eohhs/researcher/community-health/masschip/topics/

Insurance Status and Policy Environment

Given its mission to serve the low-income population and patients with limited access to care, BNHC attracts a patient population that is more likely to be uninsured or receive some type of government - sponsored health care assistance. Both of these populations will continue to be a major part of the target market. In Massachusetts however, the landscape continues to change.

Impact of 2006 Statewide Health Reform

While health reform was brought to the nation in 2010 in the form of the Patient Protection and Affordable Care Act (ACA), the state of Massachusetts enacted its own health reform several years earlier. In 2006, the Commonwealth of Massachusetts passed into law Chapter 58 of the Acts of 2006 "an Act Providing Access to Affordable, Quality, Accountable Health Care." The law aimed to achieve nearly universal health insurance coverage. The law required nearly all Massachusetts adults to carry health insurance, expanded Medicaid eligibility, and created a subsidized health insurance plan for adults called CommonwealthCare. After state health reform was implemented, the rate of uninsured dropped from 10.9% of the population in 2006 to just over 2.0% in 2010.[5]

It should be noted however that for community health centers in Massachusetts, the rate of uninsured patients remained higher than the general population. In 2006 the proportion of uninsured, or "self-pay," patients for Massachusetts FQHCs was 32.7%, and by 2009 it was 19.9%. At BNHC, the proportion of uninsured patients dropped from 45% in 2006 to 32.5% in 2009. As for many health centers in the state, the uninsured rate has fluctuated beginning in 2010 and hit its highest point in 2011 as the Great Recession peaked and many people lost employer-provided coverage and were temporarily uninsured. For BNHC, 35.7% of patients in 2011 were uninsured, but this rate dropped back down to 32.1% in 2012. The most accurate information on the uninsured population is provided by the Census Small Area Health Insurance Estimates, which provides data at the county level. Based on 2011 uninsured rate of 4% of the broader Plymouth County, the estimated number of uninsured in the Brockton service area is 3,800, or 4% of the population (this is likely a low estimate given that BNHC sees between 7,000 and 8,000 uninsured each year, 71% of which are from the Brockton service area).

While many Massachusetts health centers saw dramatic growth in the proportion of Medicaid (or MassHealth) patients as a result of health reform, BNHC actually saw a decrease in the share of patients insured by Medicaid, going from 41.4% of all patients in 2006 to 39.9% of patients in 2012. However, there was still a dramatic increase in the absolute number of Medicaid patients, growing from 5,023 in 2006 to 9,518 in 2012. As of July of 2013, the number of MassHealth enrollees in the Brockton service area approximately 39,600 residents, or 41.8% of the population.[6] While MassHealth discontinued full coverage of all adult dental care in 2011, the legislature has recently added back coverage for all fillings beginning in 2014 as well as check-ups, cleanings and x-rays.

Most of the self-pay patients at BNHC were replaced by patients insured by public programs, primarily CommonwealthCare. The proportion of BNHC patients with "other public insurance" jumped from

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[5] *Massachusetts Health Insurance and Employer Survey Chartbook, Updates for 2011*, January 2013, Commonwealth of Massachusetts Center for Health Information and Analysis, http://www.mass.gov/chia/docs/r/pubs/13/mhischartpack-1-29-13.pdf

[6] This statistic is based on zip-code level data for the MassHealth eligible population provided by the EOHHS. The EOHHS considers all residents eligible for the MassHealth program to be enrolled.

4.2% in 2006 to 15.3% in 2007 and as of 2012 was 14.1%. Based on EOHHS zip code-level data on CommonwealthCare enrollment for 2013, there are 1,900 residents (2%) of the Brockton service area who are enrolled in this program.

Trends in Medicare Population

The Centers for Medicare and Medicaid Services (CMS) reported that for 2010 Plymouth County's Medicare enrollment was 16.2% of the population, up from 12.3% in 2007. This increase in Medicare enrollees is much greater than the increase observed statewide, as Medicare enrollment in Massachusetts has only increased from 15.5% in 2007 to 16.1% in 2010.[7] At BNHC, the proportion of Medicare patients has more than doubled between 2006 (3.8%) and 2012 (8.5%). This trend, coupled with the broader demographic trends happening in Brockton service area and Plymouth County, suggests that the Medicare population will continue to grow as a proportion of BNHC's patient base as the population ages.

Shifting to Focus on Costs

The Massachusetts legislature deliberately decided to focus only on expanding insurance coverage in the 2006 health reform effort, and not on controlling costs. Partly as a result of this decision, rising health costs continue to present a challenge to the state budget. In 2008, additional health reform legislation was passed to initiate cost containment and delivery system improvements, including the creation of a Special Commission on the Health Care Payment System. In 2009 the Commission proposed a new payment mechanism called "global payments." The governor proposed legislation in 2011 that called for the formation of integrated care organizations; this legislation was modified and signed into law in August, 2012.[8] The law includes incentives for MassHealth providers to assume Alternative Payment Methodologies (APMs), which are defined as methodologies that do not rely solely on fee-for-service arrangements, which can lead to overuse and overspending. The law includes the requirement for 80% of MassHealth members to have adopted APMs by July of 2015.[9]

Anticipated Impact of National Health Reform

While the reforms adopted in Massachusetts became the model for comprehensive federal health reform, this does not mean that the reforms were identical. There are key differences between the two laws that require several changes in order for Massachusetts to fully comply with the new provisions:[10]

- Premium subsidies for private coverage are available to individuals with incomes up to 400% FPL, as compared to 300% FPL in the Massachusetts health reform.
- Medicaid will be expanded to all individuals under the age of 65 with incomes up to 138% FPL as part of national health reform, as compared to 133% FPL eligibility for parents, 200% FPL for pregnant women, and just 100% FPL for the long-term unemployed. While most of these will remain in place, the minimum coverage for all adults will be raised to the 138% FPL level.
- Slight differences also exist in the penalties for not having individual coverage, as well as employer requirements (50+ employees in the federal statute versus 11 or more in the state law).

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[7] Centers for Medicaid and Medicare, Medicare Enrollment Reports http://www.cms.hhs.gov/MedicareEnrpts/

[8] Executive Office for Administration and Finance Press Release, July 16, 2009 http://www.mass.gov/chia/gov/commissions-and-initiatives/health-care-payment-system/move-to-global-payment-system-supported.html

[9] *Chapter 224 of the Acts of 2012: Implications for MassHealth,* Blue Cross Blue Shield of MA Foundation, Sept 2012, http://bluecrossmafoundation.org/sites/default/files/download/publication/Chapter%20224%20Implications%20for%20MassHealth%20summary.pdf

[10] Kaiser Family Foundation http://kaiserfamilyfoundation.files.wordpress.com/2013/01/8311.pdf

Special Populations and Other Considerations

The following tables and narrative are presented in order to more fully describe the characteristics and possible unique medical and behavioral health needs of each service area. Data on the foreign-born and veteran populations is presented below, in addition to data on transportation access, which is particularly relevant to the service areas which are more distant from the BNHC main site.

Foreign-Born Population

As the data in the table clearly demonstrates, some service areas chosen by BNHC are more diverse than others in terms of the population born outside of the United States. Randolph has even greater diversity than the Brockton service area, although it is spread across many different nationalities, while Brockton has the greatest concentrations of Cape Verdean and Haitian residents.

The significant Portuguese and Brazilian populations in other service areas are important to note as BNHC considers reaching out beyond Brockton, from the perspective of Portuguese language competencies already on board at BNHC. Portuguese is also the primary language for Cape Verdeans, as well as Brazilians (although in differing dialects).

Table 7: Foreign-Born Population by Service Area

	Portugal	China	India	Cambodia	Vietnam	Cape Verde	Haiti	Brazil	All Foreign -Born	Foreign-Born as % of Total Population
Brockton Service Area	583	172	211	10	505	6,381	6,035	860	**20,319**	**22%**
Stoughton Service Area	572	184	270	-	4	16	276	923	**3,911**	**14%**
Bridgewater Service Area	167	116	62	61	-	98	177	44	**1,887**	**4%**
Randolph Service Area	50	603	216	13	661	101	923	305	**4,794**	**27%**
Rockland Service Area	-	28	56	-	32	-	-	-	**856**	**3%**
Attleboro Service Area	605	279	120	240	189	44	139	110	**3,642**	**8%**
Taunton Service Area	2,123	108	14	63	25	343	191	274	**4,475**	**9%**

Veterans

A table presenting the veteran population in each service area is below. In each area, veterans comprise between 5% and 8% of the population, with the greatest proportions to be found in Bridgewater and Rockland. Many individuals within the veteran population have unique medical and behavioral health needs due to physical and psychological trauma experienced during their time in service. While Post-Traumatic Stress Disorder (PTSD) is the most common issue health professionals point to for veterans, it should be noted that veterans with PTSD also have a greater number of medical conditions than veterans with no mental health conditions.[11]

[11] http://www.ncbi.nlm.nih.gov/pubmed/20853066

Table 8: Veteran Population by Service Area

Service Area	Veterans
Brockton Service Area	5,583
Stoughton Service Area	1,659
Bridgewater Service Area	3,645
Rockland Service Area	1,464
Randolph Service Area	1,620
Attleboro Service Area	3,093
Taunton Service Area	2,981

Transportation Access

Another major consideration for BNHC as it considers the expansion potential of other service areas is the level of accessibility to the main site located in Brockton, which will be essential for referrals to services not provided at any satellite site (such as dental or behavioral health). The table below outlines the access residents in each service area have to cars, as well as the extent to which public transportation is available.

Table 9: Transportation Access of Service Areas

Service Area	% Workers 16+ driving to work	Households with no vehicle available	% Households with no vehicle available	Main site accessible via Brockton Area Trans?	Estimated Trip Length to Main Site via Public Transportation (Google Maps)
Brockton Service Area	88%	4,704	14%	Yes	1 to 20 min
Stoughton Service Area	90%	846	8%	Yes	64 min
Bridgewater Svc Area	87%	374	2%	No	12 min (rail only)
Rockland Service Area	93%	469	7%	Yes	30 min?
Randolph Service Area	85%	1,266	10%	Yes	23 min
Attleboro Service Area	80%	896	5%	No	N/A - 40 min drive
Taunton Service Area	93%	1,596	8%	No	N/A - 30 min drive

Within the city of Brockton, residents have strong access to the BNHC main site due to the availability of the Brockton Area Transportation system (BAT), a network of buses that moves throughout the city, as well as outside of the city to a limited extent. While Stoughton is a short drive away from the BNHC main site, the trip using BAT is almost prohibitively long, at over an hour. In contrast, Randolph is just 23 minutes away via the BAT system. Nearby Bridgewater is not accessible to the main site via BAT despite its proximity. Bridgewater is very accessible via the Massachusetts Bay Transportation Authority (MBTA) commuter rail, but this is trip is prohibitively expensive, at $8.75, or more if the ticket is purchased on board.

However, lack of access via public transportation to BNHC's main site may be less of an issue than would seem at first glance. For the communities that lack good transportation access, car access is quite high, with 80 to 93% of all workers driving to work, and just 2 to 8% of households lacking cars. However, access to health care is likely still not simple for one-car households in which the wage-earner needs regular access to the car. This is a barrier many FQHC patients experience nationwide.

Assessing Demand for Services

Demand for FQHC services is different than demand for most primary care providers because FQHCs serve a much wider population of patients than the typical doctor. FQHCs by definition have to serve anyone that walks in the door, regardless of their ability to pay. While this may sound like a financial drain at first glance, in Massachusetts uninsured patients are covered by the Health Safety Net program. In addition, any loss from a self-pay patient is made up for by the higher reimbursement rates provided by the Medicaid program. FQHCs are able to receive a Prospective Payment System (PPS) rate which is based on cost, while most providers get a much lower reimbursement rate for services. Accounting for this suggests an analysis of demand should look specifically at populations that would not normally be served by typical providers. Simply put, FQHCs seek out areas of unmet need.

As over 90% of FQHC patients have incomes below 200% of the Federal Poverty Level (FPL), this demographic is considered the most likely future user of community health center services. While estimating demand for FQHC services is a complex exercise that involves taking into account available alternatives and competition, a useful assumption to employ as a starting point is that subtracting the number of current FQHC patients in a region from the total number of low-income (i.e. below 200% FPL) residents provides a reasonable estimate of prospective FQHC patients who might require care:

Low Income Residents – Current FQHC Patients = Low Income Residents Not Yet Served

The table below provides a listing of BNHC's current and potential service areas, as well as an estimate of the un-served low income patients. Un-served low-income patients were calculated by subtracting the 2012 UDS patients served from the estimated low-income population (those below 200% FPL).

Table 10: Estimated Demand of Expanded Service Area by Service Area

Service Area	Brockton NHC Patients, 2012	Brockton NHC Market Share	Total Population, 2007-2011	Low-Income Pop, 2007-2011	Total # Health Center Patients, 2012	Un-served (by Health Centers) Low-Income	FQHC Penetration of Low-Income Pop.
Brockton Service Area	16,861	84%	93,916	33,551	20,116	13,435	60%
Stoughton Service Area	862	56%	27,008	5,616	1,539	4,077	27%
Bridgewater Service Area	409	85%	47,108	5,802	481	5,321	8%
Rockland Service Area	377	51%	17,515	3,000	744	2,256	25%
Randolph Service Area	632	13%	32,089	7,110	5,015	2,095	71%
Attleboro Service Area	97	19%	43,459	8,591	519	8,072	6%
Taunton Service Area	866	68%	48,836	14,204	1,269	12,935	9%

This analysis indicates that there are an estimated 13,400 low-income residents who are not currently being seen by BNHC or any other FQHC within the Brockton service area. However, some of this need may be met by other providers in the area accepting Medicaid, discussed in more detail in the next section. The next greatest demand can be found in Taunton and Attleboro, with close to 13,000 and 8,000 un-served low-income residents respectively.

The service areas with the smallest penetration of the low-income population indicate the areas of greatest market potential. These include Attleboro, at just 6% penetration, Bridgewater at 8% and Taunton at 9%. Stoughton also has a notable market potential, with over 4,000 un-served low-income residents, although there is greater penetration of the low-income population in this community (27%).

The service areas with greatest penetration of the low-income population are Randolph (71%) and Brockton (60%). However it should be noted that in the unique Brockton market, despite the high penetration of the low-income population, there is likely additional market potential due to the nature of BNHC's patient base. Few if any other providers in Brockton that accept Medicaid have the cultural competency and diverse language/translation capabilities that BNHC has to serve the sizeable Cape Verdean and Haitian communities that reside in the city.

Within the city of Brockton, 37% of residents speak a language other than English, 22% of residents were not born in the United States, and 18% of all residents speak English "less than very well" according to 2012 US Census data. These statistics suggest the presence of a significant population that could have language barriers that could keep them from accessing primary care services, were it not for the language capabilities at BNHC.

It should further be noted that it is not uncommon in areas of much higher competition, such as the saturated health center market in Boston, to see many zip codes with more than 100% penetration of the low-income population. More than 100% penetration of the low-income population indicates a well-served zip code that serves the general population, not just the low-income population. While BNHC management should keep in mind that they will reach market saturation eventually, the analysis in this report indicates that there is additional market potential before this point is reached, particularly as the adult population continues to grow more quickly than the younger population.

Similar Providers in the Service Area

As mentioned in the previous section, it is important to understand what other services are available to serve the low-income population that is not currently seen by FQHCs. The tables below provide information on the number and proportion of medical, dental and behavioral health providers that accept MassHealth in each service area BNHC is exploring. In addition, more information on the competition from other FQHCs is provided.

Medical Providers

The table below is based upon two data sources for physicians and other medical providers. Through the Area Health Resource File (AHRF) provided by HRSA, data from 2008 on the physicians, nurse practitioners and physician assistants is available at the zip code level. The number of providers in each zip code was divided into the total population for 2008 to estimate the total population to provider ratio for each service area.

The table also includes data on MassHealth providers from the MA EOHHS, which for each service area was divided into the number of MassHealth members to get the MassHealth population to provider ratio for each community.

While benchmarks for provider to population ratios are difficult to come by, comparison of the respective service areas can provide a lot of information. Brockton is clearly the best-served of the service areas for the general population, although it should be noted that many of the physicians located in Brockton are affiliated with three major hospital systems that likely serve the broader region. Brockton is also the second-most poorly served in terms of the MassHealth population to provider ratio.

Table 11: Medical Providers, and Providers Accepting MassHealth by Service Area

Service Area	Total Primary Care Providers according to AHRF (2008)	General Population to Provider Ratio	MassHealth Medical Providers	MassHealth Eligible/ Enrollees	MassHealth Pop to MassHealth Medical Provider
Brockton Service Area	150	627	91*	39,600	437
Stoughton Service Area	15	1,803	28	5,300	252
Bridgewater Service Area	24	1,874	57	5,200	122
Rockland Service Area	4	4,372	3	4,500	2,000
Randolph Service Area	12	2,677	28	6,600	314
Attleboro Service Area	43	1,012	77	8,800	152
Taunton Service Area	46	1,064	102	14,400	188

*This is the only service area for which BNHC staff has called providers to determine actual full-time equivalents. The number of actual providers for all other service areas is likely overstated.

It is important to emphasize that with the exception of the Brockton Service Area, the number of providers that report accepting MassHealth and the number of providers that are actually accepting new MassHealth patients might not be the same. In some communities, when called and asked for an appointment, only a third of providers that claim that they are accepting Medicaid patients actually do

so. This holds true for the Brockton market; while there are over 300 medical providers accepting MassHealth, a phone survey by BNHC and other volunteers determined that only 91 full-time equivalents were actually accepting new patients. Therefore, the provider figures for the other service areas are likely overstated, and these markets are likely poorly served for MassHealth enrollees beyond the cultural competence issues discussed earlier.

Behavioral Health and Dental Providers Accepting MassHealth

The next table takes a similar approach used above for medical providers, and divides the number of dental and mental health providers accepting MassHealth into the number of MassHealth enrollees to arrive at the population to provider ratio for each service area. As above, these lists have not been culled by contacting each provider to determine whether they are actually accepting new patients. Because MassHealth dental is limited in the nature of its coverage for adults, it is likely that many of the dentists in the below table only accept patients under the age of 18.

Table 12: Behavioral Health and Dental Providers Accepting MassHealth by Service Area

Service Area	MassHealth Eligible/ Enrollees	MassHealth Mental Health Providers	MassHealth Pop to Mental Health Provider	MassHealth Dental Providers	MassHealth Pop to Dental Provider
Brockton Service Area	39,600	64	619	118	336
Stoughton Service Area	5,300	9	589	16	331
Bridgewater Service Area	5,200	13	400	12	433
Rockland Service Area	4,500	7	643	4	1,125
Randolph Service Area	6,600	16	413	22	300
Attleboro Service Area	8,800	16	550	10	880
Taunton Service Area	14,400	15	960	19	758

The data above indicate that Rockland is very poorly served for medical and dental services relative to other communities. However the community is quite small and transportation access is high, so it is possible Rockland residents seek treatment from nearby communities, including BNHC, which currently sees over 630 patients from Rockland (500 of which are adults). Attleboro is also very poorly served for dental providers compared to many communities. Within Brockton, BNHC staff has anecdotally observed that mental health resources are inadequate, with long waiting lists for any mental health providers they bring on staff. Taunton stands out as inadequately served for both mental health and dental services.

The next table outlines the competitive landscape within each service area amongst BNHC and its peer FQHCs. The table indicates the number of FQHCs that saw patients in each service area in 2012, but the most telling statistic is the market share by BNHC and any other FQHCs (which have been labeled "secondary" FQHCs in the table below. Not surprisingly, BNHC has the greatest market share and the least competition from other FQHCs in Brockton, as indicated by a market share of 84%, with the next greatest market share of 4% by Codman Square CHC. BNHC has a smaller but still substantial 56% share of the Stoughton service area, with the next greatest share of 6% by Harbor Health Services. Despite their distance, Attleboro and Taunton FQHC patients are most likely to go to BNHC than other FQHCs, although BNHC has a much larger share of Taunton patients (68%) than it does of Attleboro patients (19%).

Table 13: Competition from Other FQHCs in Each Service Area

Service Area	FQHC Patients, 2012	Number of Health Centers Serving Area	BNHC Market Share	"Secondary" FQHC Name	Secondary FQHC Market Share	Potential Interest by other FQHCs
Brockton Service Area	20,116	18	84%	Codman Sq. CHC	4%	No
Stoughton Service Area	1,539	14	56%	Dorchester House	6%	Harbor Health Services
Bridgewater Service Area	481	4	85%	Manet CHC	10%	No
Rockland Service Area	744	7	51%	Manet CHC	30%	No
Randolph Service Area	5,015	18	13%	Codman Sq. CHC	18%	Harbor Health Services
Attleboro Service Area	519	17	19%	Whittier St. CHC	10%	No
Taunton Service Area	1,269	12	68%	HealthFirst	12%	Manet CHC (received NAP award)

While BNHC had a large share of the Taunton service area in 2012, this is likely to shift once Manet Community Health Center opens its new site, recently funded by a New Access Point (NAP) grant awarded in late 2013. However, as demonstrated in the next section and throughout the report, there are several other service areas that present expansion opportunities for BNHC. It is likely that BNHC will still pursue providing dental services to the Taunton service area. Given the nature of the unmet demand for dental in both Taunton and Attleboro, a site in either community would likely draw dental patients from both service areas.

Primary Care Workforce Recruitment and Retention

For health centers in Massachusetts and nationwide, primary care provider recruitment and retention continues to be challenging. A recent survey conducted by the Massachusetts League of Community Health Centers queried PCPs about the factors most important to their starting out and staying at a health center. [12]

Factors most important to recruitment process included the extent to which medical residencies prepared respondents to practice at CHCs, whether the interview process included site visits and meeting the health care team, administrative support for clinical practice goals, and whether the health center's model of care was practiced with an inter-professional team. Nearly 90% of respondents reported wanting to work for an organization whose mission they believed in.

Providers most likely to remain at a health center into the future were found to be predominantly female physicians practicing for 10 or more years, most typically those practicing in the greater Boston area (which in this study was defined to include Plymouth County). The physicians most satisfied with their current CHC cited the following factors that contributed to their satisfaction (in order of importance): mission and goals of the health center, diversity of patients, the CHC model of inter-professional care teams, and the opportunity to teach medical students and residents.

The greater Boston area was found to have the least difficulty with recruitment as compared to other regions in the state, with 18% of health centers reporting difficulty in filling vacancies (as compared to 78% in the western region and 27% in the New Bedford/Barnstable region). However, 32% of greater Boston health centers did state that it was more difficult to retain provider staff and one half said the pool of physicians for hiring was inadequate.

State Recruitment Programs

While not focused solely on community health centers, many state workforce development policies are aimed at increasing primary care providers practicing in underserved areas.

The Massachusetts State Loan Repayment Program is available to primary care practitioners who work full time at a public or nonprofit health center in a federally designated Health Professionals Shortage Area. The program is funded by matching state and federal funds.

[12] "Recruitment and Retention of Primary Care Physicians at Community Health Centers: A Survey of Massachusetts Physicians," *Journal of Health Care for the Poor and Underserved*, August 2011: http://www.massmed.org/News-and-Publications/MMS-News-Releases/Massachusetts-Medical-Society%E2%80%99s-2013-Physician-Workforce-Study-Shows-Physician-Shortages,-Difficulty-in-Recruiting/#.Us17kPsrGVA

Evaluating Service Areas

In order to create a method to compare the seven service areas, twenty-two data points that were collected and reported on throughout this market assessment and scored as objectively as possible. As indicated in the below table, there were five categories for scoring, including demographic trends, health indicators, demand, competition and transportation access. The lower the total score, the more favorable the area is for expansion. Because of the lack of competition, demographic trends and ease of access, the Brockton service area is still the most natural area for additional expansion (although there are limits to this which are discussed in the next section). Attleboro, Taunton and Stoughton are the next largest, least competitive markets that also have expansion potential, but BNHC will not consider Taunton as an option given the recent NAP award made to a competing health center.

Table 14: Service Area Scores by Category

	Brockton	Stoughton	Bridgewater	Rockland	Randolph	Attleboro	Taunton
Demographic Trends	9	14	13	18	11	11	8
Health Indicators	1	5	3	3	5	2	1
Demand	3	8	11	7	10	8	9
Competition	1	2	3	4	6	3	5
Transportation Access	8	7	8	7	10	11	12
Total Score (Lowest most favorable for expansion)	**22**	**36**	**38**	**39**	**42**	**35**	**35**

It should be noted that the total score and the overall ranking for each service area assumes that each category listed above holds equal weight. BNHC may wish to re-score these factors using the detailed data tables included in the appendix based on strategic priorities.

Excluding Brockton and Taunton, the highest overall rank goes to Attleboro, closely followed by the Stoughton service area. The top-ranked service area for the five categories is listed below:

Highest Rank

- Demographic Trends: Attleboro/Randolph
- Health Indicators: Attleboro
- Demand: Stoughton/Attleboro
- Competition: Bridgewater
- Transportation Access: Stoughton

Estimating Future Demand

Demand refers to the extent of need for BNHC's services. In any given location, demand is affected by a number of factors, including the size of the population potentially using BNHC's services and the intensity of their need for the services. The Agency for Healthcare Research and Quality defines demand for safety-net services, such as BNHC's through a number of factors, including: the percent of uninsured, Medicaid coverage, and the size of the low-income population.

The tables below include the estimated potential patient population by insurance coverage in each service area. Using service area assumptions, population estimates and county level insurance information as needed, the overall population can be categorized to better understand payer mix and predict service levels. Please note that the uninsured and Medicare populations for the indicated primary and expanded service areas were estimated based upon the percentages for each service area's respective county (which included Bristol, Norfolk and Plymouth counties). MassHealth and CommonwealthCare enrollment was provided for 2013 at the zip code level and should be considered to be very current and accurate. Enrollment rates were maintained for 2013 and applied to the each service area population projection for 2018. These tables do not necessarily take into account dual eligibility.

Table 15: 2013 Estimated General Population by Insurance Status

2013	Estimated Total Population	Estimated Uninsured (age less than 65)		MassHealth Enrollees		CommCare Enrollees		Medicare Enrollees		Other Insured	
		Estimated Number	% of total	Estimated Number	% of total	Estimated Number	% of total	Estimated Number	% of total	Estimated Number	% of total
Brockton Service Area	94,700	3,800	4.0%	39,600	41.8%	1,900	2.0%	15,400	16.2%	34,000	35.9%
Stoughton Service Area	27,700	800	3.0%	5,300	19.2%	1,100	3.8%	4,300	15.5%	16,200	58.5%
Bridgewater Service Area	47,500	1,900	4.0%	5,200	11.0%	1,300	2.7%	7,700	16.2%	31,400	66.1%
Rockland Service Area	17,700	700	4.0%	4,500	25.4%	1,000	5.5%	2,900	16.2%	8,600	48.6%
Randolph Service Area	32,500	1,000	3.0%	6,600	20.5%	1,200	3.8%	5,000	15.5%	18,700	57.5%
Attleboro Service Area	43,500	2,000	4.6%	8,800	20.2%	1,500	3.5%	7,700	17.7%	23,500	54.0%
Taunton Service Area	49,000	2,300	4.6%	14,400	29.4%	2,000	4.1%	8,700	17.7%	21,600	44.1%

Table 16: 2018 Projected Population by Insurance Status

2018	Estimated Total Population	Estimated Uninsured (age less than 65)		MassHealth Enrollees		CommCare Enrollees		Medicare Enrollees		Other Insured	
		Estimated Number	% of total	Estimated Number	% of total	Estimated Number	% of total	Estimated Number	% of total	Estimated Number	% of total
Brockton Service Area	94,400	3,800	4.0%	39,500	41.8%	1,900	2.0%	15,300	16.2%	33,900	35.9%
Stoughton Service Area	28,200	900	3.0%	5,400	19.2%	1,100	3.8%	4,400	15.5%	16,400	58.2%
Bridgewater Service Area	48,600	1,900	4.0%	5,400	11.0%	1,300	2.7%	7,900	16.2%	32,100	66.0%
Rockland Service Area	17,900	700	4.0%	4,500	25.4%	1,000	5.5%	2,900	16.2%	8,800	49.2%
Randolph Service Area	32,600	1,000	3.0%	6,700	20.5%	1,200	3.8%	5,000	15.5%	18,700	57.4%
Attleboro Service Area	44,800	2,100	4.6%	9,100	20.2%	1,600	3.5%	7,900	17.7%	24,100	53.8%
Taunton Service Area	49,200	2,300	4.6%	14,400	29.4%	2,000	4.1%	8,700	17.7%	21,800	44.3%

Using the data from tables above along with BNHC's payer mix percentages described below, market share for BNHC can be examined for the service areas for 2012. Patients by payer mix for BNHC's patient base is taken from its 2012 UDS report. These percentages were then used to determine estimates for the payer mix market share analysis. The payer mixes for all Massachusetts FQHCs, as well as for the nation, were also included for reference and comparison.

Table 17: Historical Payer Mix

Payer Type	BNHC, 2012	Massachusetts UDS, 2012	National UDS, 2012
Medicaid	39.9%	41.8%	39.6%
Medicare	8.5%	9.5%	8.0%
Other Public	14.1%	9.7%	2.3%
Private Insurance	5.4%	19.2%	14.0%
Self-Pay	32.1%	19.8%	36.0%

Comparing the above data sets it is clear that BNHC typically has a payer mix that is slightly less skewed towards patients with Medicaid and more skewed towards the uninsured than at the state level.

The below chart extrapolates payer mix proportions for the overall health center to estimate the users by payer type within each service area. Breaking down the market share by payer type indicates the potential for the health center in Medicaid and Medicare in each service areas.

Table 18: Market Share Calculation Based upon the 2012 UDS Report

Market Share Calculation	Brockton Service Area *2012 Market Share*	Attleboro Service Area *2012 Market Share*	Stoughton Service Area *2012 Market Share*
Total Population, 2013	94,700	43,500	27,700
Total Patients, 2012	16,861	97	862
Market Share	17.8%	0.2%	3.1%
Uninsured/Self Pay	4,100	2,000	800
Estimated Uninsured Patients	4,100	31	277
Market Share	100%	1.6%	34.6%
MassHealth Enrollees	39,600	8,800	5,300
Estimated MassHealth Patients	6,728	39	344
Market Share	17.0%	0.4%	6.5%
Medicare Enrollees	15,400	7,700	4,300
Estimated Medicare Patients	1,431	8	73
Market Share	9.3%	0.1%	1.7%
Remaining Population	35,900	25,000	17,300
Estimated Remaining Patients	4,564	19	168
Market Share	12.7%	0.1%	1.0%

Within the Brockton service area, BNHC has a 17.8% market share for the general population, and a 17% market share of all MassHealth patients. Most health centers have a greater share of Medicaid patients, indicating possible additional market potential, although the presence of over 100 MassHealth providers in Brockton might be serving some of these other MassHealth enrollees. As suggested earlier in this report, BNHC sees more uninsured patients than those estimated for Brockton using the county uninsured rate as a basis for extrapolation. It is safe to assume that BNHC sees the vast majority of the community's uninsured. Medicare and those with other insurance are somewhat under-represented as compared to BNHC's market share of the total Brockton service area population. BNHC has a much smaller share of all payer mix populations in Attleboro and Stoughton.

Potential Demand of Adult Low-Income Population in Brockton Service Area

One final consideration when evaluating unmet need within Brockton is that while there is still additional unmet need in the service area, if BNHC is planning to target mostly the un-served adult population with its Brockton expansion, this is a smaller population than the over 13,000-plus low-income residents identified earlier in this report. The table below uses aggregated internal data for the low-income patient population by age group and compares it to the total low-income population by

age group as provided by the 2012 US Census. While BNHC has a 50% penetration of the total low-income population in Brockton, penetration rates increase with adult patients, ranging from 58% to 66% for adults aged 18 to 64.

Table 19: Market Share in Brockton Service Area by Age Category

Age Category	Combined Pop under 200% FPL	Low-Income BNHC patient pop by age	% Saturation of LI Pop by Age Cat by BNHC	Estimated remaining LI Pop by age	Other Low-Income FQHC patients	% Saturation of LI Pop by Age Cat by all FQHCs in Brockton Svc Area	Estimated remaining LI Pop by age not seen by FQHCs, 2012 in Brockton	% of total unmet need
Under 6 years	3,807	1,456	38%	2,351	277	45%	2,075	15%
6 to 11 years	3,651	1,130	31%	2,521	215	37%	2,306	17%
12 to 17 years	4,053	1,306	32%	2,747	248	38%	2,499	18%
18 to 24 years	3,562	2,076	58%	1,486	395	69%	***1,091***	8%
25 to 34 years	4,200	2,782	66%	1,418	529	79%	***890***	7%
35 to 44 years	4,005	2,413	60%	1,592	458	72%	***1,134***	8%
45 to 54 years	4,096	2,436	59%	1,660	463	71%	***1,198***	9%
55 to 64 years	2,595	1,666	64%	929	317	76%	***612***	4%
65 to 74 years	1,737	823	47%	914	156	56%	758	6%
75 and older	1,845	625	34%	1,220	119	40%	1,101	8%
TOTAL	**33,551**	**16,712**	**50%**	**16,839**	**3,175**	**59%**	**13,664**	**100%**

When only taking into account the population between 18 and 64, there are slightly less than 5,000 adults that are part of that "u-nmet" need group just within Brockton. This is because of the higher saturation BNHC has observed in the adult population.

The above data set still makes the case for expansion even if the focus is solely on adult health. In addition, this number could be understated because of the fact that beyond the low-income population of 33,500, there are another 6,000 MassHealth enrollees, of whom at least half (approximately 55%) are adults between the ages of 18 and 65. However, once the market is honed to just the likely adult population BNHC plans to target, it suggests that a more modest approach to expansion within Brockton is warranted.

Estimating Potential Encounters in Brockton and Stoughton Service Areas

Examining historical encounter data is useful for analyzing current operations and determining the productivity of a center's current providers, the potential number of visits and the remaining gaps in access. Based upon current utilization rates as reported in BNHC's 2012 UDS report, the average patient for medical services generated approximately 4.2 medical encounters (visits) per year. *(92,988 visits /22,300 medical patients = 4.17 visits per patient)*. This is higher than the 2012 state average of 3.92 visits per medical patient.

Using these primary care encounter estimates and the suggested benchmark of one Full-time Equivalent (FTE) medical provider conducting approximately 2,912 medical visits per year (the Massachusetts state average for visits per physician and midlevel provider), further analysis can be made. The 2012 production of 92,988 medical visits might typically require 32.8 provider FTEs in a combination of physicians, nurse practitioners and physicians' assistants *(92,988 visits /2,912 visits per provider FTE = 31.93 provider FTEs)*. BNHC reported 27.3 provider FTEs for the year as its staff was more productive than the state average, with 3,404 visits per medical provider FTE for 2012.

This analytic approach can also be applied to dental and mental health services as well using CHC and state benchmarks for those providers. Based on the market demand targets for BNHC, these calculations can be applied to determine staffing goals for providers. Other various provider ratios and benchmarks based upon specialty, geographic region or patients' age and gender can be found in the Ambulatory Health Care Survey.[13]

Using this type of approach also allows for the estimation of the number of providers required within a geographical area to adequately serve its general population. The un-served low-income population of Attleboro is approximately 8,600. When applying this number to the average visits per FQHC patient provides an estimation of total medical visits of 36,000 *(8,600 * 4.2 = 36,120 visits)*. Then dividing total visits by the 3,404 visit benchmark for BNHC provider productivity suggests that the low-income population might require 10.6 provider FTEs. A similar analysis for Stoughton suggests that the un-met need of the low-income population would require another 6.9 medical provider FTEs. These provider figures do not consider any MassHealth enrollees who might already be seeing other non-FQHC primary care providers in the service area. However, they serve as a starting point for additional primary data gathering concerning MassHealth providers. BNHC would benefit from calling the MassHealth providers in its selected service area(s) to estimate the number of actual provider FTEs currently serving the MassHealth population.

Once the general demand for providers is estimated for a region, it is important to also estimate the providers that already serve that region. If there appears to be a lack of providers serving uninsured and underserved populations, this will help ensure that BNHC is not overstaffing. In addition, the demand for services in any given community will be affected by many factors. Demand is affected by where people live, economic conditions, where providers are located, payment systems, the availability of different types of services, and the transportation system. Determining the likelihood that a number of people in a given area that will actually utilize BNHC's services might be resolved through directly asking the members of the community about their health care needs.

[13] http://www.cdc.gov/nchs/ahcd.htm

Conclusion

While eventual market saturation is a risk that should be kept in mind for additional expansion in the future, the case for providing additional primary care services in Brockton is still compelling. The primary factors contributing to this conclusion include the lack of competition from other FQHCs, the scale and depth of the need, the accessibility of the main site to the greatest unmet need, large MassHealth enrollment of nearly 40,000 people, and finally, the nature of the unique population that has a greater need for cultural and language competence. Of the seven service areas studied, Brockton also has the poorest health indicators, the largest populations in poverty (16%) and low-income (36%), the highest unemployment (13.8%) and the largest veteran population (5,600).

The analysis compiled in this report indicates that there are an estimated 13,400 low-income residents who are not currently being seen by BNHC or any other FQHC within the Brockton service area, nearly 5,000 of whom are adults between the ages of 18 and 64. This sizeable population makes the case for expansion of the health center's adult medicine programs. While there are significant numbers of MassHealth primary care providers in Brockton already, few if any of them have the cultural competency and diverse language/translation capabilities that BNHC has to serve the sizeable Cape Verdean and Haitian communities that reside in the city.

Regarding market saturation, it should further be noted that it is not uncommon in areas of much higher competition, such as the saturated health center market in Boston, to see many zip codes with more than 100% penetration of the low-income population. More than 100% penetration of the low-income population indicates a well-served zip code that serves the general population, not just the low-income population. The analysis in this report indicates that there is additional market potential before a point of market saturation is reached, particularly as the adult population continues to grow more quickly than the younger population.

The analysis in this report also identified market potential in other service areas. Within Attleboro and Stoughton, there are 8,000 and 4,000 low-income residents respectively who are not currently served by a community health center. Attleboro is particularly poorly served for dental care as well as mental health services, and had the second highest number of health indicators that were poorer than the state average. For both of these markets, additional primary data gathering is recommended to understand the existing primary care providers that are accepting new MassHealth patients.

There are of course some additional considerations to keep in mind as BNHC plans a modest expansion in Brockton. As noted above, Brockton appears to have additional growth potential, but the board should think through how the health center would grow if and when the Brockton market becomes saturated. Beyond market analysis, BNHC should list its core strengths that could be best leveraged in a new community (e.g. language resources, cultural competence, adult health, dental and other strengths). Primary data research on low-income residents' perceived barriers to care (e.g. transportation for Attleboro) would likely provide additional clarity on the feasibility of establishing a satellite in this or other service areas. Referral relationships will also need to be considered; for example Attleboro has many fewer existing referral connections than communities like Stoughton and others closer to the city of Brockton. And finally, before it expands outside of Brockton, the BNHC board will need to revisit its mission, which includes a strong commitment to serving the City of Brockton.

Appendix

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Demographic Trends by Service Area

Demographic Trends, Attleboro Service Area

Indicator	2000	2010	% Change	2013 Estimated	% Change	2018 Projected	% Change
Population	41,736	43,498	4%	43,465	0%	44,793	3%
Median Age in Years	36.1	39.5	9%	40.0	1%	40.4	1%
Per Capita Income	$22,541	$30,516	35%	$30,938	1%	$35,174	14%
Median Household Income	$50,945	$63,004	24%	$64,177	2%	$74,820	17%
Population Under 20	11,474	10,870	-5%	10,664	-2%	10,706	0%
Population 21 to 44	16,125	14,805	-8%	14,602	-1%	14,746	1%
Population 45 and up	14,144	17,822	26%	18,198	2%	19,342	6%

Indicator	2010	% Total Population	2013 Estimated	% Total Population	2018 Projected	% Total Population
White	37,930	87%	37,527	86%	38,503	86%
Black	1,284	3%	1,328	3%	1,380	3%
Asian or Pacific Islander	1,998	5%	2,251	5%	2,463	5%
Some Other Race	1,322	3%	1,345	3%	1,372	3%
Two or More Races	964	2%	1,013	2%	1,076	2%
Hispanic Ethnicity*	2,748	6%	3,052	7%	3,358	7%

*Please note that individuals reporting a Hispanic Ethnicity are also one of the above races

Demographic Trends, Bridgewater Service Area

Indicator	2000	2010	% Change	2013 Estimated	% Change	2018 Projected	% Change
Population	44,482	46,978	6%	47,469	1%	48,579	2%
Median Age in Years	35.2	39.1	11%	40.0	2%	40.48	1%
Per Capita Income	$22,578	$31,769	41%	$33,014	4%	$36,932	12%
Median Household Income	$62,837	$78,516	25%	$83,013	6%	$93,018	12%
Population Under 20	12,473	12,274	-2%	12,032	-2%	11,785	-2%
Population 21 to 44	17,592	15,638	-11%	15,440	-1%	15,594	1%
Population 45 and up	14,379	19,067	33%	19,997	5%	21,201	6%

Indicator	2010	% Total Population	2013 Estimated	% Total Population	2018 Projected	% Total Population
White	43,583	93%	43,882	92%	44,777	92%
Black	1,610	3%	1,672	4%	1,784	4%
Asian or Pacific Islander	518	1%	602	1%	660	1%
Some Other Race	548	1%	554	1%	562	1%
Two or More Races	719	2%	759	2%	796	2%
Hispanic Ethnicity*	1,158	2%	1,311	3%	1,473	3%

*Please note that individuals reporting a Hispanic Ethnicity are also one of the above races

Demographic Trends, Randolph Service Area

Indicator	2000	2010	% Change	2013 Estimated	% Change	2018 Projected	% Change
Population	30,968	32,126	4%	32,489	1%	32,607	0%
Median Age in Years	38.3	39.9	4%	40.5	1%	40.61	0%
Per Capita Income	$23,262	$30,858	33%	$31,950	4%	$36,252	13%
Median Household Income	$56,329	$70,159	25%	$73,053	4%	$82,382	13%
Population Under 20	7,868	7,827	-1%	7,635	-2%	7,482	-2%
Population 21 to 44	11,153	10,535	-6%	10,693	2%	10,745	0%
Population 45 and up	11,957	13,764	15%	14,161	3%	14,380	2%

Indicator	2010	% Total Population	2013 Estimated	% Total Population	2018 Projected	% Total Population
White	13,385	42%	12,342	38%	11,395	35%
Black	12,302	38%	13,500	42%	14,452	44%
Asian or Pacific Islander	3,999	12%	4,050	12%	4,057	12%
Some Other Race	1,311	4%	1,324	4%	1,330	4%
Two or More Races	1,130	4%	1,273	4%	1,374	4%
Hispanic Ethnicity*	2,057	6%	2,348	7%	2,632	8%

*Please note that individuals reporting a Hispanic Ethnicity are also one of the above races

Demographic Trends, Rockland Service Area

Indicator	2000	2010	% Change	2013 Estimated	% Change	2018 Projected	% Change
Population	17,671	17,489	-1%	17,688	1%	17,944	1%
Median Age in Years	36.3	40.2	11%	40.5	1%	40.77	1%
Per Capita Income	$22,895	$28,614	25%	$29,625	4%	$33,356	13%
Median Household Income	$50,690	$62,904	24%	$64,550	3%	$71,722	11%
Population Under 20	5,040	4,346	-14%	4,322	-1%	4,301	0%
Population 21 to 44	6,501	5,690	-12%	5,716	0%	5,702	0%
Population 45 and up	6,134	7,453	22%	7,650	3%	7,941	4%

Indicator	2010	% Total Population	2013 Estimated	% Total Population	2018 Projected	% Total Population
White	16,095	92%	16,208	92%	16,431	92%
Black	452	3%	470	3%	463	3%
Asian or Pacific Islander	197	1%	225	1%	254	1%
Some Other Race	405	2%	417	2%	415	2%
Two or More Races	340	2%	368	2%	381	2%
Hispanic Ethnicity*	348	2%	406	2%	440	2%

Demographic Trends, Stoughton Service Area

Indicator	2000	2010	% Change	2013 Estimated	% Change	2018 Projected	% Change
Population	26,947	27,050	0%	27,666	2%	28,161	2%
Median Age in Years	39.2	42.9	10%	43.6	2%	44.34	2%
Per Capita Income	$25,508	$33,714	32%	$35,177	4%	$39,964	14%
Median Household Income	$58,341	$67,295	15%	$70,297	4%	$80,441	14%
Population Under 20	6,612	6,343	-4%	6,210	-2%	6,099	-2%
Population 21 to 44	9,480	8,084	-15%	8,212	2%	8,246	0%
Population 45 and up	10,851	12,623	16%	13,244	5%	13,817	4%

Indicator	2010	% Total Population	2013 Estimated	% Total Population	2018 Projected	% Total Population
White	21,693	80%	22,003	80%	22,240	79%
Black	2,997	11%	3,193	12%	3,382	12%
Asian or Pacific Islander	985	4%	1,000	4%	1,010	4%
Some Other Race	678	3%	709	3%	721	3%
Two or More Races	697	3%	762	3%	809	3%
Hispanic Ethnicity*	880	3%	1,006	4%	1,101	4%

*Please note that individuals reporting a Hispanic Ethnicity are also one of the above races

Demographic Trends, Taunton Service Area

Indicator	2000	2010	% Change	2013 Estimated	% Change	2018 Projected	% Change
Population	49,449	48,964	-1%	48,985	0%	49,212	0%
Median Age in Years	36.0	39.5	10%	39.8	1%	40.07	1%
Per Capita Income	$22,266	$26,410	19%	$26,675	1%	$30,585	15%
Median Household Income	$43,158	$51,494	19%	$52,009	1%	$61,061	17%
Population Under 20	13,039	12,021	-8%	11,824	-2%	11,611	-2%
Population 21 to 44	19,202	16,445	-14%	16,330	-1%	16,310	0%
Population 45 and up	17,211	20,497	19%	20,831	2%	21,292	2%

Indicator	2010	% Total Population	2013 Estimated	% Total Population	2018 Projected	% Total Population
White	42,395	87%	42,106	86%	42,046	85%
Black	2,533	5%	2,635	5%	2,738	6%
Asian or Pacific Islander	502	1%	549	1%	579	1%
Some Other Race	1,790	4%	1,798	4%	1,795	4%
Two or More Races	1,744	4%	1,897	4%	2,053	4%
Hispanic Ethnicity*	2,843	6%	3,148	6%	3,423	7%

*Please note that individuals reporting a Hispanic Ethnicity are also one of the above races

Health Indicators by Service Area

Health Indicator	Attleboro	Brockton	Bridgewater	Randolph	Rockland	Stoughton	Taunton	MA
Cancer Death Rate per 100,000 population	175.3	192.5	192.3	175.5	186.7	172.7	207.6	170.3
Prostate Cancer Death Rate per 100,000 male population	13.6	29.9	14.4	15.6	-	13.1	22.1	21.1
% of adult women who have had a pap test in the past 3 years (CHNA)	86.1%	85.0%	85.0%	83.9%	83.8%	85.0%	86.1%	84.1%
Diabetes Prevalence (CHNA)	7.7%	9.4%	9.4%	6.8%	5.9%	9.4%	7.7%	7.5%
Heart Disease Death Rate per 100,000 population	106.1	112.6	108.1	81.4	112.3	91.7	137.3	95.7
% of Adults who have had their blood cholesterol checked in the past 5 years (CHNA)	82.5%	87.8%	87.8%	88.3%	81.9%	87.8%	82.5%	82.6%
Obesity Rate (CHNA)	24.3%	23.9%	23.9%	21.6%	20.1%	23.9%	24.3%	22.3%
Asthma Hospitalizations per 100,000 population (age 5 through 64)	99.4	290.1	94.7	197.0	258.2	102.8	146.8	127.8
Chronic Obstructive Pulmonary Death Rate per 100,000 population 45+	129.1	96.6	89.7	80.0	161.1	55.6	86.5	86.9
Cigarette Smoking among Adults (CHNA)	18.6%	18.7%	18.7%	11.2%	14.7%	18.7%	18.6%	15.0%
15+ Days of Poor Physical Health in Past 30 Days (Adults) (CHNA)	9.1%	9.0%	9.0%	7.4%	9.7%	9.0%	9.1%	8.6%
15+ Days of Poor Physical Mental in Past 30 Days (Adults) (CHNA)	11.1%	10.8%	10.8%	8.1%	9.5%	10.8%	11.1%	9.1%
15+ Days of Sad, Blue or Depressed in Past 30 Days (Adults) (CHNA)	8.9%	7.7%	7.7%	6.2%	5.4%	7.7%	8.9%	7.2%
Number of Indicators Poorer than State Average (out of 13)	**10**	**11**	**10**	**4**	**6**	**7**	**11**	

*CHNA stands for Community Health Network Area; the CHNA represents a region that is typically smaller than a county but larger than an individual municipality, and is often used for collecting health indicators and behavioral health data. Attleboro and Taunton are represented by the Greater Attleboro-Taunton CHNA (CHNA 24), Bridgewater, Brockton and Stoughton are part of the Greater Brockton CHNA 22, Randolph is part of the Blue Hills Community Health Alliance (CHNA 20), and Rockland is part of the South Shore Community Health Network (CHNA 23).

Service Area Scoring: Patient Trends, Demographic Trends and Health Indicators

	Brockton	Stoughton	Bridgewater	Rockland	Randolph	Attleboro	Taunton
BNHC Patients, 2013	16,861	862	409	377	632	97	866
BNHC Adult Patients, Dec 2012	12,967	736	378	349	504	89	484
BNHC Adult Patient Growth (19+, 2008 to 2012)	36%	45%	29%	70%	44%	68%	15%
Total Population	94,063	27,050	44,978	17,489	32,126	43,498	48,964
Low-Income Population, 2011	33,551	5,616	5,802	3,000	7,110	8,591	14,204
BNHC Share of all Low-Income population	50%	15%	7%	13%	9%	1%	6%
Growth of Svc Area Population 20+, 2000 to 2010	2.8%	1.9%	8.6%	4.0%	5.1%	7.8%	1.5%
Poverty Rate	15.6%	8.3%	6.3%	5.5%	8.3%	6.4%	13.9%
Unemployment Rate	13.8%	9.5%	7.6%	11.0%	10.0%	8.4%	9.2%
# Health indicators poorer than MA state average	8	4	6	6	3	7	8
Current Adult patient volume	1	2	5	6	3	7	4
Saturation of low-income population	7	6	3	5	4	1	2
Volume of Low-income population	1	6	5	7	4	3	2
Demographic Trend Score (lower more favorable)	***9***	***14***	***13***	***18***	***11***	***11***	***8***
Health Indicators (lower score suggests higher need)	***1***	***5***	***3***	***3***	***5***	***2***	***1***

Service Area Scoring: Demand and Competition

	Brockton	Stoughton	Bridgewater	Rockland	Randolph	Attleboro	Taunton
Low-Income Population "Un-served" by FQHCs	13,435	4,077	5,321	2,256	2,095	8,072	12,935
Ratio of Total Population to Primary Care Providers	836	2,404	2,499	5,830	3,570	1,349	1,419
Estimated Ratio of MassHealth Eligible to MassHealth Providers	437	252	122	2,000	314	152	188
BNHC Market Share of FQHC patients	84%	56%	85%	51%	13%	19%	68%
"Secondary" FQHC Name	Codman Sq. Health Center	Dorchester House	Manet CHC	Manet CHC	Codman Sq. Health Center	Whittier St.	HealthFirst
Secondary FQHC Market Share of FQHC Patients	4%	6%	10%	30%	18%	10%	12%
Potential Interest by other FQHCs	No	Harbor Health	No	No	Harbor Health	Manet CHC	Manet CHC
Volume of "Un-Met" Need by FQHCs	1	4	5	6	7	3	2
MassHealth Provider Need	2	4	6	1	3	5	7
Demand Score (lower is more favorable for expansion)	***3***	***8***	***11***	***7***	***10***	***8***	***9***
Competition Score (lower more favorable)	***1***	***2***	***3***	***4***	***6***	***3***	***5***

Service Area Scoring: Transportation Access

	Brockton	Stoughton	Bridgewater	Rockland	Randolph	Attleboro	Taunton
Main site accessible via BAT?	Yes	Yes	No	Yes	Yes	No	No
Estimated Trip Length via Public Transportation (Google Maps)	1 to 20 min	64 min bus/17 min drive	12 min (car only)	30 min	43 min	N/A - 40 min drive	N/A - 30 min drive
% employed that drive to work	87%	89%	90%	85%	91%	86%	93%
% All Households with no car access	14%	8%	2%	7%	10%	5%	8%
Main site accessible via BAT? (with notes)	Yes	Yes - #14 bus to Stoughton Square	East Bridgewater only - #8 bus goes to Plain St in Brockton, 2.5 miles from E Bridgewater	Yes - Rockland route. Drops off at Plaza, Rockland Community Center	Yes - #12 Bus to Main St. and Union St.	No - no clear public transportation option	No - no clear public transportation option
BAT Accessible?	1	1	2	1	1	2	2
Trip length (any mode)	1	2	5	3	4	7	6
Greatest car access?	6	4	1	3	5	2	4
Transportation Access (lower more favorable for expansion)	***8***	***7***	***8***	***7***	***10***	***11***	***12***

Service Area Scoring Summary

	Brockton	Stoughton	Bridgewater	Rockland	Randolph	Attleboro	Taunton
Demographic Trend Score (lower more favorable for expansion)	9	14	13	18	11	11	8
Health Indicators (lower score suggests higher need)	1	5	3	3	5	2	1
Demand Score (lower is more favorable for expansion)	3	8	11	7	10	8	9
Competition Score (lower more favorable)	1	2	3	4	6	3	5
Transportation Access (lower more favorable for expansion)	8	7	8	7	10	11	12
Total Score (Lowest most favorable for expansion)	**22**	**36**	**38**	**39**	**42**	**35**	**35**