

2016

 Southcoast<sup>®</sup> Health

**COMMUNITY  
NEEDS  
ASSESSMENT**



**Public Policy Center**  
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# Public Policy Center

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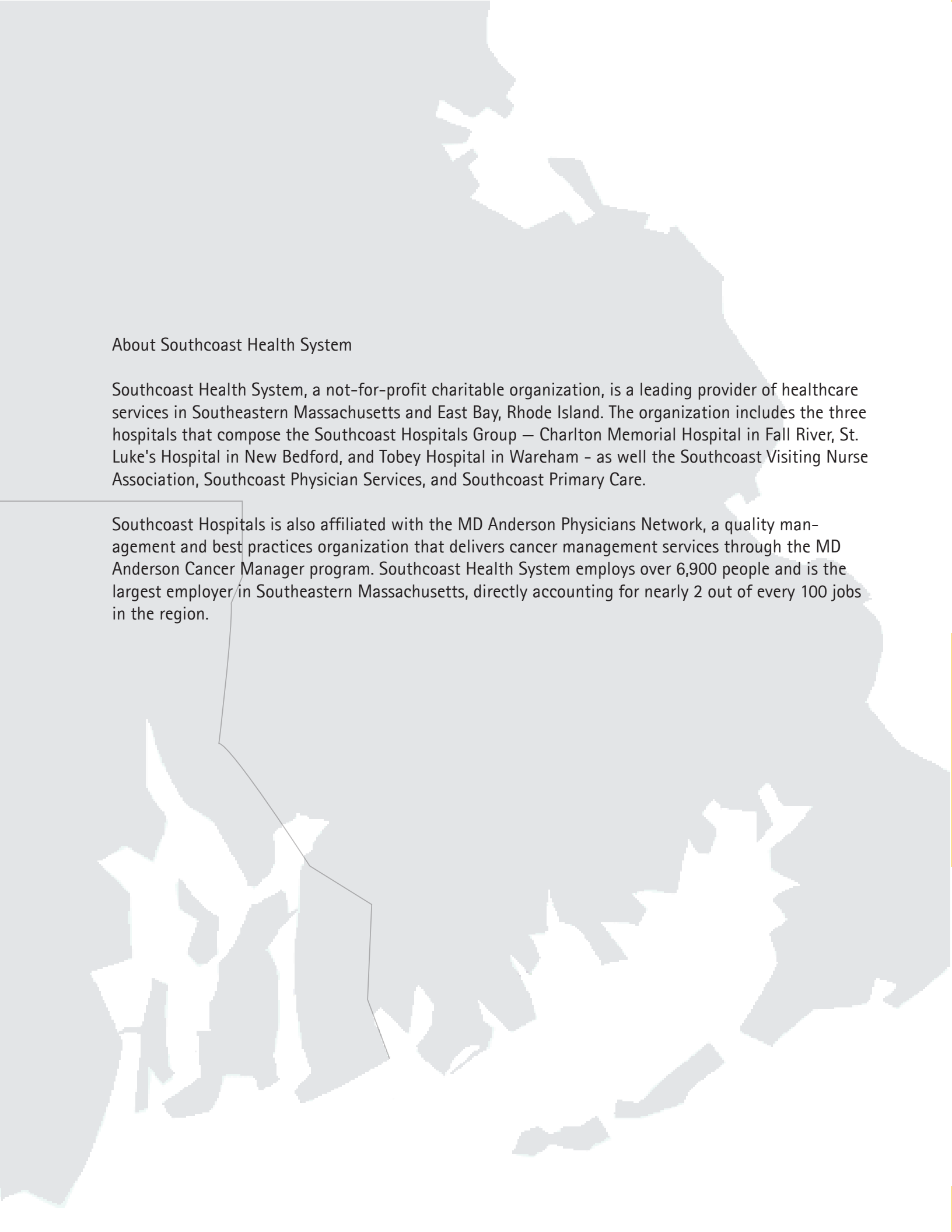
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## About Southcoast Health System

Southcoast Health System, a not-for-profit charitable organization, is a leading provider of healthcare services in Southeastern Massachusetts and East Bay, Rhode Island. The organization includes the three hospitals that compose the Southcoast Hospitals Group – Charlton Memorial Hospital in Fall River, St. Luke's Hospital in New Bedford, and Tobey Hospital in Wareham – as well the Southcoast Visiting Nurse Association, Southcoast Physician Services, and Southcoast Primary Care.

Southcoast Hospitals is also affiliated with the MD Anderson Physicians Network, a quality management and best practices organization that delivers cancer management services through the MD Anderson Cancer Manager program. Southcoast Health System employs over 6,900 people and is the largest employer in Southeastern Massachusetts, directly accounting for nearly 2 out of every 100 jobs in the region.



Executive Summary.....	i
1 Overview.....	1
1.1 Methods .....	1
1.2 Study Area Definition .....	2
1.3 Approach .....	2
2 Social Determinants of Health.....	4
2.1 Definition and Rationale.....	4
2.2 Geographic Analysis of Need .....	6
3 Demographic and Socioeconomic Analysis.....	7
3.1 Demographic Analysis .....	7
3.2 Socioeconomic Analysis .....	14
3.3 Poverty .....	18
3.4 Economic Profile of the Southcoast.....	22
4 Health Assessment .....	25
4.1 Clinical Care.....	26
4.2 Physical Environment.....	30
4.3 Health Behavior.....	35
4.4 Health Outcomes .....	44
4.5 Children’s Health .....	53
4.6 Health Disparities .....	60
5 Key Informant Interviews and Focus Groups.....	73
5.1 Overall Impressions .....	73
5.2 Impact of Social Determinants of Health .....	74
5.3 Determinants that Most Impact Health .....	76
5.4 Biggest Barriers to Accessing Care and Maintaining Health.....	77
5.5 Most Vulnerable in the Community.....	78
5.6 System and Environment Effects on Health.....	78
5.7 How can Southcoast Health Improve Health Outcomes? .....	78
Appendix .....	79
Data Sources .....	87
References .....	88



## EXECUTIVE SUMMARY

Southcoast Health System, a not-for-profit charitable organization, is a leading provider of healthcare services in Southeastern Massachusetts and East Bay, Rhode Island. The organization includes three hospitals comprising the Southcoast Hospitals Group – Charlton Memorial Hospital in Fall River, St. Luke’s Hospital in New Bedford, and Tobey Hospital in Wareham – as well as the Southcoast Visiting Nurse Association, Southcoast Physicians Services, and Southcoast Primary Care. Southcoast Health System through its Community Benefits Programs works to improve health by addressing and establishing new health priorities based on identified community needs with programs such as the Southcoast Wellness Van and the RAPP program (Responsible Attitudes toward Pregnancy, Parenting and Prevention).

As a community-based health delivery system, Southcoast Health System continually strives to identify the priority health needs of the community and to ensure that its services are aligned with these needs. The Community Needs Assessment assists with this goal by documenting the major demographic, socioeconomic, and health trends among Southcoast residents and by engaging the community to develop information-driven priorities and strategies that can be implemented to improve the overall health of Southcoast residents. Specifically, the Community Needs Assessment includes three primary activities:

1. **Demographic and Socioeconomic Analysis:** Understanding the community by examining the region’s people in terms of population, race, education, income, poverty, wages, and employment.
2. **Health Assessment:** Identifying major health issues and needs by analyzing a variety of health indicators, with a focus on health outcomes and disparities.
3. **Key Informant Interviews and Focus Groups:** Engaging stakeholders to provide qualitative analysis that enriches the primary data.

The geographic definition of the Southcoast region for this report includes the 13 towns and cities served by the Southcoast Health System.<sup>1</sup> Data are reported and compared by city (Fall River and New Bedford), by town when available or relevant (e.g., Wareham), by Community Health Network Area or CHNA (CHNA 25 is reported as Greater Fall River and CHNA 26 is reported as Greater New Bedford in this report<sup>2</sup>), and by region overall (all 13 towns/cities). Data are compared to Massachusetts averages and/or with past years to examine trends.

Overall, Fall River and New Bedford continue to lag the region and state in most socioeconomic metrics, including demonstrating lower levels of educational attainment, higher poverty levels, and higher unemployment, although many of the region’s towns also struggle with these issues, particularly in comparison to state averages. Residents also trail their counterparts statewide on many health metrics, particularly in terms of health outcomes.

## DEMOGRAPHIC AND SOCIOECONOMIC ANALYSIS

The Southcoast’s population increased by 1.8 percent between 2010 and 2014. This rate is less than the growth rate for Massachusetts over that period (4.9 percent) and is mostly attributable to population increases in the suburban communities of Dartmouth, Rochester, Wareham, and Westport. The region’s cities have experienced little change in total population, with New Bedford increasing by 1.2 percent since 2000 and Fall River decreasing by 3.5 percent.

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<sup>1</sup> Acushnet, Dartmouth, Fairhaven, Fall River, Freetown, Marion, Mattapoisett, New Bedford, Rochester, Somerset, Swansea, Wareham, Westport.

<sup>2</sup> CHNA 25 includes Fall River, Somerset, Swansea, and Westport. CHNA 26 includes Acushnet, Dartmouth, Fairhaven, Freetown, Marion, Mattapoisett, New Bedford, Rochester, and Wareham.

Since 2009, communities throughout the Southcoast have grown more diverse. From 2009 to 2014, the region's minority population increased by 22.4 percent (10,797 people). As a region, however, the Southcoast has a less diverse population than the Commonwealth; 82.7 percent of Southcoast residents are White alone, compared to 75.0 percent statewide. A notable exception in the region is New Bedford, where non-White residents account for one-third (33.0%) of the total population.

The foreign-born share of the Southcoast's population has remained stable since the 2013 Needs Assessment; 14.2 percent in 2014, compared with 14.3 percent in 2011. These foreign-born residents are concentrated in the region's cities; as of 2014, nearly 1 in 5 people in both Fall River (19.1%) and New Bedford (19.7%) were born outside of the country. In both cities, Portuguese immigrants make up the majority of the foreign-born, comprising 51.3 percent of the foreign-born in New Bedford and 64.0 percent in Fall River. However, as emigration from Portugal to the U.S. has slowed, Latin American and Asian immigrants make up increasing shares of the foreign-born populations in both cities.

With the exception of Fall River and New Bedford, the median age in Southcoast communities is above that of the state or the nation. Additionally, the region has a slightly higher share of residents 65 years of age or older, which is more pronounced in the region's towns. Fall River and New Bedford have larger shares of the population under the age of 35 when compared to their metro areas and the Southcoast overall. There are healthcare implications inherent in an aging population, such as increasing rates of chronic diseases.

Despite Massachusetts having the second most educated population in the country, educational attainment in the Southcoast continues to lag. For instance, 22.2 percent of adults in the Southcoast, 29.7 percent in Fall River, and 28.9 percent in New Bedford have not completed high school, compared with 10.5 percent statewide. In Fall River and New Bedford, less than half of the population 25 years of age or older has ever attended college (almost 39 percent in both Fall River and New Bedford), compared with 64.0 percent of adults in Massachusetts. However, degree attainment in the Southcoast and its cities has increased over the previous five years, and since 2009, more than half the adult population across the region and in Fall River and New Bedford has at least completed high school or taken some college courses. Yet, these gains in high school completion and college attendance have not led to major increases in residents who have completed a Bachelor's or advanced degree.

Many Southcoast communities have seen median household incomes either stagnate or decline from 2009 to 2014. In Fall River and New Bedford, where median household incomes are almost half that of the state, nearly a quarter of the population lives in poverty. These 42,660 individuals account for 80.7 percent of all people in poverty living in the Southcoast, while the two cities account for 54.4 percent of the region's total population. The cities also have higher shares of students and single female-led households living in poverty when compared to the region and the state.

## HEALTH ASSESSMENT: MAJOR FINDINGS

The following results represent the most significant findings based on the categories included in the health assessment analysis: Clinical Care, Physical Environment, Health Behavior, Health Outcomes, Children's Health, and Health Disparities.



## Clinical Care

Clinical care data covers access to care, participation in health screenings, vaccination rates, and access to dental care.

### Access

Generally speaking, Southcoast residents have access to care that is more favorable or comparable to residents of Massachusetts as a whole:

- 89.1 percent of Greater Fall River adults and 85.9 percent of Greater New Bedford adults reported having a check-up in the past year, which compares favorably to Massachusetts residents as a whole at 77.7 percent. This also holds true for both Fall River (82.2%) and New Bedford (86.7%).
- 90.6 percent of Southcoast residents reported that they had always had insurance coverage over the past 12 months, compared with the statewide average of 90.0 percent.
- The percentage of adults who could not see a doctor due to cost began to increase slightly in Greater Fall River and Greater New Bedford in relation to Massachusetts over the previous two years. Currently, among adults in the region, 12.3 percent in Greater Fall River and 12.2 percent in Greater New Bedford are unable to see a doctor due to the cost (8.5% in Massachusetts).

### Health Screening

Southcoast residents generally compare favorably to Massachusetts with respect to most cancer screenings, cholesterol screenings, and vaccination rates. The Southcoast continues to be underserved in dental care in relation to statewide averages:

- Slightly more than two-thirds (67.4%) of Greater Fall River and nearly two-thirds (66.2%) of Greater New Bedford residents have had a dental visit in the past year, which is almost 10 percentage points lower than the Massachusetts average. Approximately 21.6 percent of Greater Fall River and 23.1 percent of Greater New Bedford residents report having lost five or more teeth due to decay or disease, which exceeds the Massachusetts rate of 14.9 percent.

### Clinical Care Health Disparities

Racial and Income Disparities: Clinical care indicators that reflect health disparities based on race or income exist in fetal and infant health, health behaviors, and/or heart-related conditions.

- Black and Hispanic residents of the Southcoast continue to be underserved in relation to White residents with regard to the percentage of mothers who began prenatal care during the first trimester:

Began Prenatal Care During First Trimester: 2009 versus 2013						
	White		Black		Hispanic	
	2009	2013	2009	2013	2009	2013
Greater Fall River	83.0%	75.7%	66.7%	57.5%	76.3%	59.5%
Greater New Bedford	81.5%	82.7%	66.5%	78.3%	63.5%	74.3%
Massachusetts	85.9%	82.3%	72.3%	65.8%	75.3%	71.5%

Source: MassCHIP, Perinatal Report.

While the percentage of Hispanic and Black residents exceeds White residents in teen births, the trend appears to be declining slightly:

Teen Births (<20): 2009 versus 2013						
	White		Black		Hispanic	
	2009	2013	2009	2013	2009	2013
Greater Fall River	8.2%	5.9%	9.3%	9.6%	19.0%	13.3%
Greater New Bedford	8.5%	5.0%	13.7%	12.1%	16.9%	14.9%
Massachusetts	4.0%	2.2%	8.7%	5.2%	15.5%	10.4%

Source: MassCHIP, Perinatal Report.

- The Southcoast’s Hispanic population is particularly underserved in terms of clinical care. More residents cannot see a doctor due to cost and fewer have participated in cancer screenings when compared to non-minorities and even the statewide Hispanic population:<sup>3</sup>

Clinical Care												
	Cannot See a Doctor Due to Cost			Colorectal Cancer Screening			Mammogram Within Last Two Years			Pap Smear Within Last Three Years		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Greater Fall River	7.4%	NA	21.3%	65.5%	NA	60.7%	87.1%	NA	79.9%	81.8%	NA	70.2%
Greater New Bedford	8.0%	NA	19.4%	66.4%	68.5%	57.8%	87.8%	84.7%	69.9%	80.9%	84.9%	79.0%
Massachusetts	5.4%	10.9%	16.7%	74.6%	71.2%	63.5%	84.3%	87.1%	84.4%	84.1%	87.0%	83.9%

Source: BRFSS 2013, MassCHIP.

- Similarly, the region’s minority groups are disproportionately affected in the areas of smoking, maintaining a healthy weight, and being diagnosed with high blood pressure or high cholesterol, even when compared to the same population groups statewide.
- Heart-related conditions affect racial and ethnic subgroups a bit differently. Hypertension diagnoses were lower among Hispanics compared to Whites in the region, and for Hispanics in Greater Fall River, the diagnosis rate is on par with that of the Hispanic population of Massachusetts. However, the region’s Hispanic population in particular is disproportionately affected by high cholesterol: 49.8 percent in Greater Fall River and 47.1 percent in Greater New Bedford, compared to 37.0 percent statewide and approximately 39.0 percent of Whites in the Southcoast.

## Physical Environment

Not only is the health status of Southcoast residents influenced by the availability of and access to clinical care, but it is also affected by the physical conditions of the region: air quality, proximity to sources of environmental contamination, and access to amenities that facilitate healthy eating and active living.

- The Southcoast region continues to experience areas classified as food deserts, where most residents live more than 0.5 miles away from a grocery store or supermarket. Additionally, several neighborhoods of Acushnet, Fairhaven, and Wareham have no access within a mile.

<sup>3</sup> Some of these results are within the BRFSS survey’s margin of error, thus conclusions should be made with caution.

- Bristol County ranks as the second least healthy county in the state in terms of the food environment index, ahead of only Suffolk County.
- Many more brownfields are scattered throughout the region, with heavy concentrations in Fall River and New Bedford. However, the extent of contamination on these sites is not significant enough to qualify them for federal aid (Superfund status); these brownfields affect residents' health through the possibility of exposure as well as the potential blight on neighborhoods. Fall River is home to 481 reportable contaminated sites, 39 of which present sufficient hazards that limit activity on these parcels, whereas in New Bedford, 43 out of 662 reportable sites are limited.
- The number of crimes reported in the Southcoast has declined since 2005. However, the reduction in crime is fueled primarily by a reduction in non-violent crimes, while violent crimes have essentially remained constant from 2005 through 2014.

## Health Behavior

Health behavior is defined as the actions taken by individuals or groups to change or maintain their health status or to prevent illness or injury. This category includes behaviors related to healthy eating, active living, smoking, injury prevention, and drug and alcohol use.

- More than 80.0 percent of residents in Fall River, New Bedford, Greater Fall River, Greater New Bedford, and Massachusetts as a whole do not consume the recommended daily five servings of fruits and vegetables.
- During 2013, areas in the Southcoast reported lower percentages of adults being active in comparison to Massachusetts (76.5%), with physical activity within a 30-day period ranging from 60.8 percent in Greater Fall River to 73.1 percent in Greater New Bedford.
- Smoking prevalence in 2013 (latest available data), measured by current smokers, remained higher for Southcoast adults (24.7% in Greater Fall River and 18.4% in Greater New Bedford) than for Massachusetts residents (16.6%).
- The proportion of adults who report binge drinking in 2013 (defined as consuming five or more drinks on an occasion for men, and four or more drinks for women) within the past 30 days is 22.4 percent for Greater Fall River and 18.5 percent for Greater New Bedford (19.4% is the statewide rate). In the region, men are more than twice as likely to binge drink as women.

### Healthy Behavior Disparities<sup>4</sup>

- Approximately 25.0 percent of Southcoast Hispanics currently smoke, compared to about 15.0 percent of Hispanics statewide. Particularly striking, 42.3 percent of Blacks in Greater New Bedford currently smoke—a rate almost double that of Whites in this sub-region and more than double among Blacks in Massachusetts (17.5 percent).
- While all racial and ethnic groups in the Southcoast struggle with the ability to maintain a healthy weight, the region's Black and Hispanic populations struggle the most. Obesity affects 42.5 percent of Blacks and 33.5 percent of Hispanics in Greater New Bedford, rates that exceed those of Greater Fall River (30.9% and 32.3%, respectively) and Massachusetts (30.6% and 29.1%, respectively).

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<sup>4</sup> Some of these results are within the BRFSS survey's margin of error, thus conclusions should be made with caution.

Health Behavior									
	Current Smoker			Overweight			Obese		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
<b>Greater Fall River</b>	20.3%	20.0%	25.8%	60.3%	72.8%	70.4%	23.5%	30.9%	32.3%
<b>Greater New Bedford</b>	21.8%	42.3%	25.5%	62.0%	73.1%	67.8%	27.7%	42.5%	33.5%
<b>Massachusetts</b>	15.1%	17.5%	14.8%	57.9%	67.1%	65.0%	21.7%	30.6%	29.1%

Source: BRFSS, 2010–2013, MassCHIP.

### Massachusetts Opioid Epidemic

- Hospitalization rates for opioid related injuries are greater in the Southcoast than they are for the state as a whole. In particular, Wareham has the highest rate, with 524 hospitalizations in 2012. As of 2014, New Bedford and Fall River rank fourth and fifth in Massachusetts, respectively, for the largest number of opioid-related hospital discharges, behind Boston, Worcester and Brockton.
- Admissions for substance abuse treatment had been declining since 2011 for New Bedford, but have begun to increase since 2013. Admissions for substance abuse in Fall River have consistently fluctuated from 2011 to 2013, and began increasing in 2013.
- An important change occurring in Southcoast and Massachusetts is a greater prevalence of heroin as the leading substance abused for patients admitted for care. Trend data show a marked decrease in the percentage of alcohol for primary use and a marked increase in the percentages of heroin for primary use since 2011.
- The Southcoast is disproportionately impacted by neonatal abstinence syndrome (NAS). Charlton Memorial Hospital in Fall River and St. Luke’s Hospital in New Bedford have two of the largest populations of patients with NAS in the state, registering 131 discharges at Charlton and 76 at St. Luke’s.

### Health Outcomes

Health status and health outcomes are assessed partly by comparing hospitalization rates and incidence rates over time and in relation to state averages, including incidence rates by disease. Self-assessments of health also prove to be valuable measures.

#### Self-Assessments

In general, Southcoast residents report poorer health status than seen in statewide results.

- Approximately 30 percent of Fall River residents and 21.0 percent of New Bedford residents report poor or fair health as compared to 13.8 percent of Massachusetts residents.

## Cardiovascular Health<sup>5</sup>

Heart disease management continues to be an area of high need in the Southcoast.

- Hypertension was diagnosed among fewer Hispanics than Whites and Blacks in the state and in both CHNAs during 2010-2013. On the other hand, the region's Hispanic population in particular is disproportionately affected by high cholesterol.
- High blood cholesterol diagnoses have increased significantly from 2011 to 2013 in Fall River (by 7.0%) and New Bedford (by 16.3%) as compared to Massachusetts (by 5.8%).

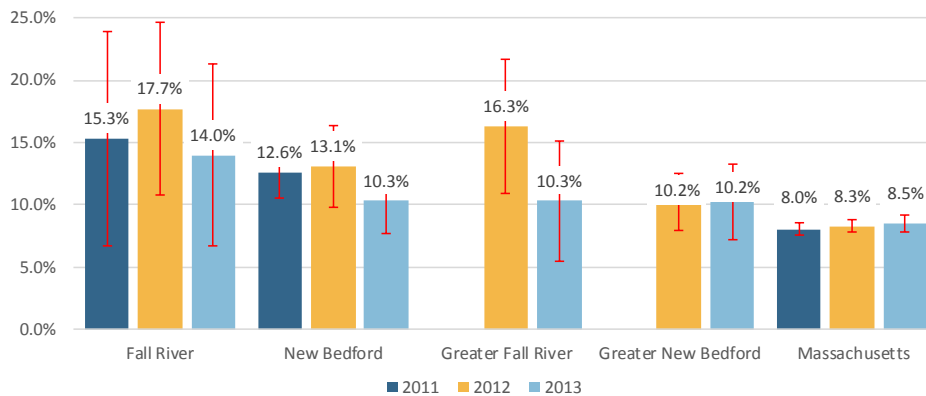
Heart-Related Conditions						
	Hypertension			High Cholesterol		
	White	Black	Hispanic	White	Black	Hispanic
<b>Greater Fall River</b>	29.9%	33.0%	22.0%	39.0%	34.2%	49.8%
<b>Greater New Bedford</b>	30.7%	NA	24.8%	39.3%	NA	47.1%
<b>Massachusetts</b>	26.6%	30.2%	22.1%	36.3%	31.0%	37.0%

Source: BRFSS, 2010–2013, MassCHIP.

- Age-adjusted hospitalization rates per 100,000 for heart attacks increased from 2009 to 2012 for Greater Fall River (by 13.0%) and Greater New Bedford (by 2.7%), and show a significant increase of 59.9 percent in Wareham. Statewide, the opposite trend occurred, with a declining rate of 11.6 percent.

## Diabetes

The percentage of adults who have had or currently have diabetes in the Southcoast region is declining in almost all study areas (it remained level in Greater New Bedford), whereas the trend is slightly increasing statewide. However, these changes are within the BRFSS survey's margin of error and conclusions should be made with caution.



<sup>5</sup> Some of these results are with the BRFSS survey's margin of error, thus conclusions should be made with caution.

## Respiratory Health

- Hospitalization rates for asthma declined from 2009 to 2012. The incidence of asthma in the Southcoast is 17.8 percent, which is greater than the statewide rate of 15.9 percent. When broken down by CHNA, 21.6 percent of Greater Fall River residents have been diagnosed with asthma in a lifetime, while 15.3 percent of Greater New Bedford residents have been so diagnosed (consistent with the statewide average).

## Cancer

- The Southcoast generally has higher rates of cancer than state averages in almost all categories of cancer, with the top three highest incidences being in breast cancer, prostate cancer and lung cancer.

## Mortality

- From 1999 to 2012, mortality rates declined in the Southcoast for all causes of death, and for deaths due to cancer, respiratory disease, and coronary heart disease. One exception is Wareham, where elevated mortality rates per 100,000 in 2012 are almost double the state average for respiratory disease (121.6 for Wareham; 63.2 for Massachusetts).

## Children's Health

Children's health encompasses the care, environment, behavior, and outcomes of children ranging from prenatal to age 18. Children's health predicts and affects both adult health and educational performance.

## Fetal and Infant Health

Fetal and infant health indicators relate to care, maternal behavior, and outcomes. In both Greater Fall River and Greater New Bedford, levels of care and outcomes are often suboptimal compared to Massachusetts, with some exceptions.

- Neonatal health outcomes are reflected by premature births and low birthweight. The percentage of premature births increased in all locales from 2009 to 2013. Low birthweights have increased in Greater Fall River, decreased in Greater New Bedford and Wareham, and remained the same in Massachusetts.

Neonatal Outcomes				
	Premature Births		Low Birthweight	
	2009	2013	2009	2013
<b>Greater Fall River</b>	7.6%	8.2%	8.2%	8.5%
<b>Greater New Bedford</b>	9.7%	10.4%	9.0%	8.4%
<b>Wareham</b>	7.4%	8.3%	9.3%	7.4%
<b>Massachusetts</b>	8.7%	8.8%	7.7%	7.7%

Source: MassCHIP, Perinatal Report.

- For the region, the rate of receiving prenatal care, both for the first trimester and throughout pregnancy, is similar to statewide averages. However, levels have dropped for both indicators in Greater Fall River (by 9.6% prenatal care during first trimester and 1.7% adequate prenatal care) and in Wareham (by 2.9% and 7.2%, respectively).
- Only Greater New Bedford has shown improvement in both prenatal indicators: percentage beginning care in the first trimester increased by 5.7 percent and the percentage of mothers with adequate prenatal care improved by 1.1 percent.
- The percentage of mothers smoking during pregnancy continues to be a significant issue in the Southcoast, showing increases in both the Greater Fall River and Greater New Bedford areas. While Wareham's percentage is still the highest, it declined from 2009 to 2013.

Fetal and Infant Health								
	Began Prenatal Care During 1st Trimester		Adequate Prenatal Care		Gestational Diabetes		Mother Smoked During Pregnancy	
	2009	2013	2009	2013	2009	2013	2009	2013
	<b>Greater Fall River</b>	79.9%	72.2%	86.4%	84.9%	7.7%	6.6%	17.0%
<b>Greater New Bedford</b>	76.0%	80.4%	86.8%	87.8%	4.9%	6.7%	13.4%	13.5%
<b>Wareham</b>	79.2%	76.9%	89.4%	82.9%	7.9%	2.8%	22.2%	19.0%
<b>Massachusetts</b>	81.1%	78.1%	88.6%	72.5%	4.6%	5.3%	6.8%	6.6%

Source: MassCHIP, Perinatal Report.

### Lead Exposure

- Among the two CHNAs, Greater New Bedford has the highest reported cases of elevated blood lead levels (10 cases), risk cases (7 cases) and poisoning cases (3 cases) in 2013.
- Lead exposure trends in Greater Fall River have declined from 2010 to 2013 with only one case of elevated blood lead level reported and one poisoning case reported.

### Teen Substance Abuse

- Across the Southcoast and within the CHNAs, the rate of teens admitted for substance abuse treatment declined from 2010. The region's admission rate has also been below the Massachusetts rate since 2011.

### Youth Risk Behavior

- While teen birth rates are declining, New Bedford and Fall River remain in the top 10 communities in Massachusetts for highest teen birth rates. Among the 25 Massachusetts communities with the greatest number of teen births in 2013, New Bedford ranked fifth highest and Fall River ranked eighth highest in teen birth rate per 1,000 females aged 15 to 19 years.
- Being overweight and obesity have a greater prevalence in the Southcoast region, with Fall River and New Bedford having the highest combined rates.

## Children's Health Disparities

- Rates of prenatal care have typically declined in all race categories, except with the Hispanic population in Greater New Bedford. Of note is that Blacks and Hispanics have significantly lower rates of beginning prenatal care during the first trimester than Whites.

Began Prenatal Care During First Trimester: 2009 versus 2013						
	White		Black		Hispanic	
	2009	2013	2009	2013	2009	2013
Greater Fall River	83.0%	75.7%	66.7%	57.5%	76.3%	59.5%
Greater New Bedford	81.5%	82.7%	66.5%	78.3%	63.5%	74.3%
Massachusetts	85.9%	82.3%	72.3%	65.8%	75.3%	71.5%

Source: MassCHIP, Perinatal Report.

- Teen births in the Southcoast, as a share of all births, decreased from 2009 to 2013 (the only exception being the percent of Black teen births in Greater Fall River, which increased slightly from 9.3% to 9.6%). Moreover, for the Hispanic population, the gap between Massachusetts and Greater Fall River slightly narrowed (3.5% difference in 2009 versus 2.9% difference in 2013) while the gap between Massachusetts and Greater New Bedford expanded slightly (1.4% difference in 2009 versus 4.5% difference in 2013).

Teen Births (<20): 2009 versus 2013						
	White		Black		Hispanic	
	2009	2013	2009	2013	2009	2013
<b>Greater Fall River</b>	8.2%	5.9%	9.3%	9.6%	19.0%	13.3%
<b>Greater New Bedford</b>	8.5%	5.0%	13.7%	12.1%	16.9%	14.9%
<b>Massachusetts</b>	4.0%	2.2%	8.7%	5.2%	15.5%	10.4%

Source: MassCHIP, Perinatal Report.

- In 2013, the number and rate of teen births were significantly higher in the Black and Hispanic populations than in the White populations of both New Bedford and Fall River.

City	Teen Births			White non-Hispanic			Black non-Hispanic			Hispanic		
	N	Rate	Percent	N	Rate	Percent	N	Rate	Percent	N	Rate	Percent
<b>New Bedford</b>	126	41.5	100.0%	47	23.1	37.3%	17	70.0	13.5%	57	79.2	45.2%
<b>Fall River</b>	89	32.0	100.0%	60	27.3	67.4%	7	45.2	7.9%	20	65.1	22.5%

Source: Southcoast Health System, via Massachusetts Department of Public Health.



## I OVERVIEW

Southcoast Health System conducts a Community Needs Assessment every three years to identify the most important health related issues in the Southcoast region. The Community Needs Assessment documents the major demographic, socioeconomic, and health trends among Southcoast residents, with a focus on clinical care, physical environment, health behavior, health outcomes, children's health, and health disparities. The analysis is enhanced by qualitative data gathered through key informant interviews. The goal of the assessment is to inform data-driven objectives and strategies that can be used to improve the overall health of Southcoast residents.

### I.1 METHODS

This report targets obstacles to healthy living and healthcare access among the region's most vulnerable populations by examining health outcomes in a socioeconomic context, specifically race, income, and education, since these are the most commonly used markers of socioeconomic status and are frequently used predictors of health status (Alder 1994, Braveman 2005, Egerter 2008). Specifically, this report highlights vulnerable populations at the Census tract level, town, and Community Health Network Area (CHNA); areas with high levels of poverty (greater than 30% below the federal poverty level) and low levels of educational attainment (greater than 25% of residents without a high school diploma).<sup>6</sup>

The Community Needs Assessment includes three primary activities:

1. **Demographic and Socioeconomic Analysis:** Understanding the community by examining the region's people in terms of population, race, education, income, poverty, wages, and employment.
2. **Health Assessment:** Identifying major health issues and needs by analyzing a variety of health indicators, with a focus on health outcomes and disparities.
3. **Key Informant Interviews and Focus Groups:** Engaging stakeholders to provide qualitative analysis that enriches the primary data.

These three tasks will establish a foundation for further analysis and activity that will aid the Southcoast Health System in its future community health oriented goals.

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<sup>6</sup>A similar methodology is employed by CommunityCommons.org, a project of Advancing the Movement. See <http://www.advancingthemovement.org> and [www.communitycommons.org](http://www.communitycommons.org).

## I.2 STUDY AREA DEFINITION

The geographic definition of the Southcoast region for this report is defined as Community Health Network Areas 25 and 26 (see Figure I). A Community Health Network Area (CHNA) is a local coalition of public, non-profit, and private sector groups that work together to build healthier communities in Massachusetts through community-based prevention planning and health promotion. To enhance readability of this report, CHNA 25 is typically referred to as “Greater Fall River,” while CHNA 26 is referred to as “Greater New Bedford.”

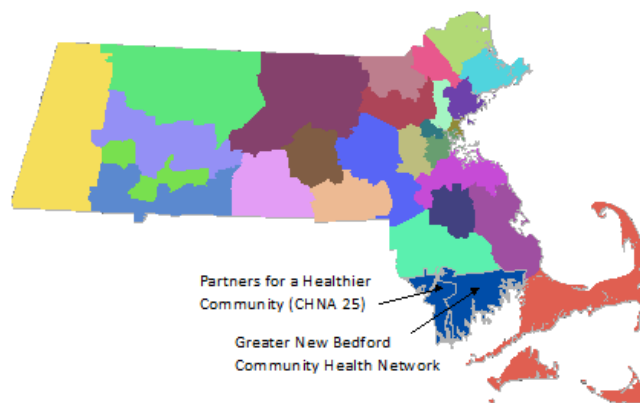
### CHNA 25: Partners for a Healthier Community

Communities: Fall River, Somerset, Swansea, Westport

### CHNA 26: Greater New Bedford Community Health Network

Communities: Acushnet, Dartmouth, Fairhaven, Freetown, Marion, Mattapoisett, New Bedford, Rochester, Wareham

Figure I  
Study Area  
CHNA 25 & CHNA 26



## I.3 APPROACH

The Community Needs Assessment presents data on a variety of health indicators. However, the analysis goes a step further by presenting this data in the context of social determinants of health by highlighting disparities in terms of income, education, and race, all of which are factors that affect health outcomes. The combination of highlighting disparities and identifying census tracts with vulnerable populations allows the Southcoast Health System to direct policies and programs to the areas in which they are most needed. The assessment also provides context and validation to the health data through key informant interviews and focus groups.

## I.4 DATA LIMITATIONS

Data for the Community Needs Assessment are derived from several sources, which include:

- Massachusetts Department of Public Health’s MassCHIP database, including the Behavioral Risk Factor Surveillance System (BRFSS), Cancer Incidence, Childhood Lead Screening, and Vital Statistics
- Massachusetts Department of Public Health, Bureau of Environmental Health (BEH)
- Massachusetts Environmental Public Health Tracking (EPHT) data and maps
- Massachusetts Center for Health Information and Analysis (CHIA) database

- Massachusetts Health Insurance Survey (MHIS)
- CommunityCommons.org.

Note that Behavioral Risk Factor Surveillance System (BRFSS) data at the sub-state level should be interpreted with caution due to low sample sizes. According to the U.S. Centers for Disease Control and Prevention, “As with all self-reported sample surveys, BRFSS data might be subject to systematic error resulting from noncoverage, nonresponse, or measurement bias.” Generally, the most recent BRFSS data is reported in the analysis and occasionally years are combined by the Massachusetts Department of Public Health to decrease the data’s margin of error or to enable a sufficient amount of data to avoid data suppression rules. BRFSS data prior to 2011 is not included because changes in the survey methodology do not permit comparisons to pre-2011 data.<sup>7</sup>

Even with these caveats, the BRFSS continues to provide important health information that can help decision makers interpret whether a health indicator is improving over time when triangulated with other quantitative and qualitative data. In other words, BRFSS data at the sub-state level should not be interpreted in a vacuum. Where available, confidence intervals are included to address the levels of sampling error.

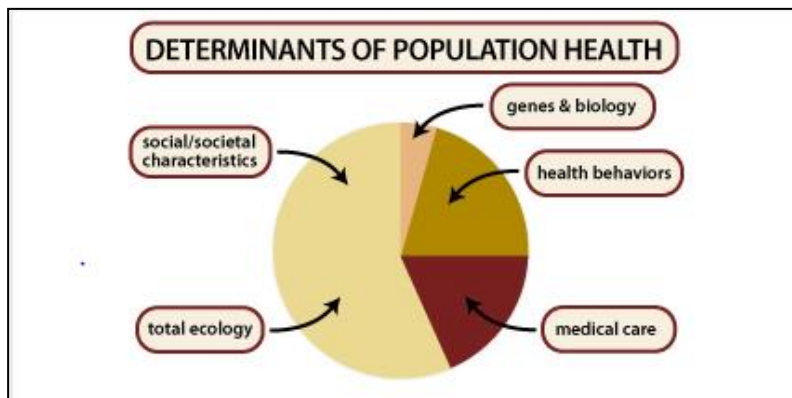
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<sup>7</sup> In an effort to address noncoverage issues related to phone use, BRFSS began including cell phone interviews in the 2011 data collection. Accordingly, 2011 is a new baseline for BRFSS, and comparisons should not be made with prior year data. More about BRFSS can be found at <https://www.cdc.gov/brfss/index.html>.

## 2 SOCIAL DETERMINANTS OF HEALTH

Scientifically, there are five determinants of population health: Genes and Biology (e.g., age and sex), Health Behavior (e.g., alcohol and drug use, smoking), Social Environment or Social Characteristics (e.g., income, gender, education), Physical Environment (e.g., housing, adjacency to toxic sites), and Health Services or Medical Care (e.g., access to quality care or health insurance) (Tarlov 1999) (see Figure 2).

Figure 2



Source: Centers for Disease Control and Prevention, 2014.

The interrelationship between these factors and policymaking influence individual and population health.<sup>8</sup> Genes, biology, and health behaviors account for 25 percent of the impact on health status, while the remaining 75 percent of factors are influenced by social/societal characteristics, ecology and medical care (Tarlov 1999). This link between health outcomes and socioeconomic background is well documented. Thus, a person's race, income, educational attainment, and other social determinants are among the best predictors of health status (U.S. Center for Disease Control and Prevention, 2014). On average, individuals who are poor, less educated, and a minority have lower levels of health than those with higher incomes, higher levels of education, or who are White. Individuals on the lower end of the socioeconomic spectrum are also less likely to have health insurance. These factors place unique stresses on health systems, particularly those operating in urban areas (Fox 2004).

As hospitals have learned, the most effective strategy for alleviating these stresses and reducing inpatient demand is to proactively address the social determinants of health. This includes identifying vulnerable populations and understanding their environments, including social and economic factors, the physical environment, and individual behavior. Many health systems have taken the lead in improving the health and well-being of residents by engaging community partners who understand these populations and environments, as well as supporting the community assets that promote the health and well-being of residents (Anderson 2004).

### 2.1 DEFINITION AND RATIONALE

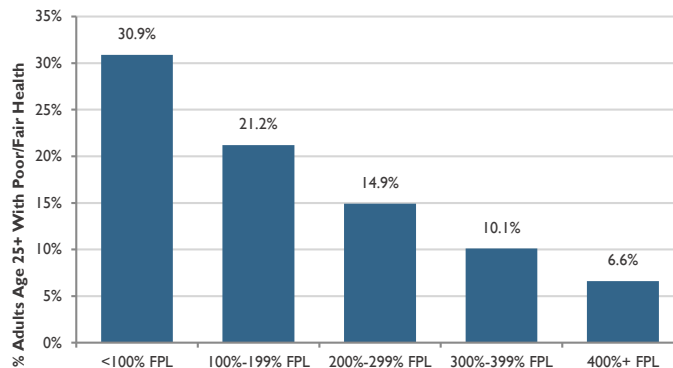
The Centers for Disease Control and Prevention defines social determinants of health as the “complex, integrated, and overlapping social structures and economic systems that are responsible for most health inequities.” These social structures and economic systems include the social environment, physical environment, health services, and structural and societal factors.<sup>9</sup>

<sup>8</sup> <https://www.healthypeople.gov/2020/about/foundation-health-measures/Determinants-of-Health>.

<sup>9</sup> See <http://www.cdc.gov/socialdeterminants/Definition.html>.

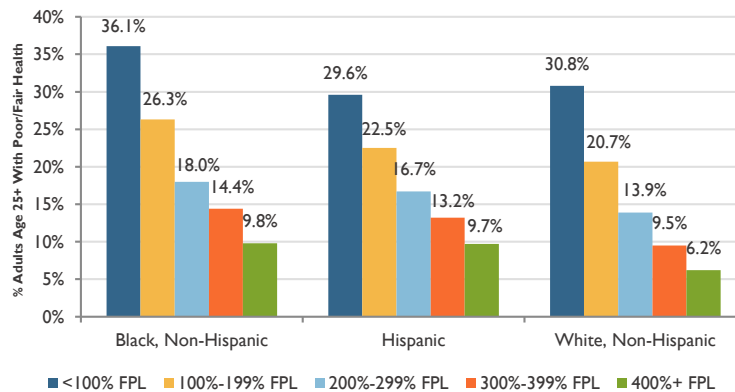
The Robert Wood Johnson (RWJ) Foundation’s Commission to Build a Healthier America notes that health status improves as income rises (see Figure 3). This pattern holds true for African Americans, Hispanics, and Whites (see Figure 4). While adults who are poor are most likely to report being in poor or fair health, the report notes that “even adults with middle class incomes are less healthy than those with higher incomes” (Robert Wood Johnson Foundation 2009). This pattern is known as the socioeconomic gradient in health.

Figure 3  
Income and Health Status



Source: RWJ Foundation Commission to Build a Healthier America, 2009.

Figure 4  
Income, Race, and Health Status



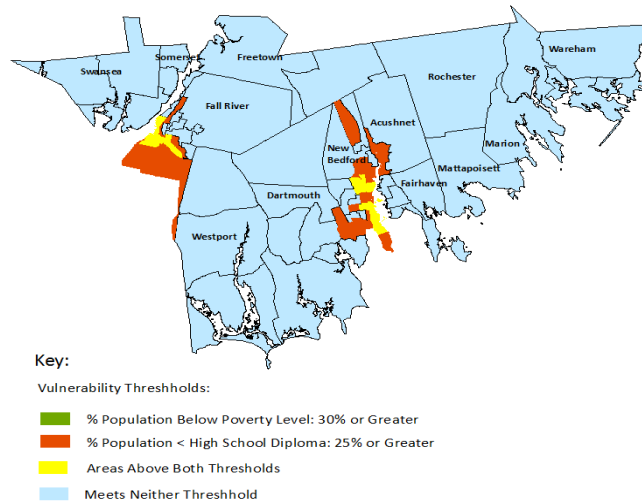
Source: RWJ Foundation Commission to Build a Healthier America, 2009.

Behaviors are often cited as primary factors in explaining the socioeconomic gradient. For example, poor people are more likely to engage in risky behaviors such as binge drinking and smoking, have poorer diets, and exercise less (North Carolina Institute of Medicine 2013). However, others highlight that quality of care and access to care are equally important factors that affect health. Racial and ethnic minorities, the poor, and the less educated often face more barriers to care and receive poorer quality of care when accessible. The National Healthcare Disparities Report from the Agency for Healthcare Research and Methodology (mandated annually by Congress), concludes that while quality of care is improving, issues regarding access to care are increasing. The report states that “these disparities may be due to differences in access to care, provider biases, poor provider-patient communication, or poor health literacy” (Agency for Healthcare Research and Quality 2012). In addition, a growing body of research indicates that living and working conditions, including housing quality, exposure to pollution, worksite safety, access to healthy and affordable foods, and proximity to safe places to exercise, have a significant effect on health, more so than risky behaviors (National Research Council of the National Academies 2012).

## 2.2 GEOGRAPHIC ANALYSIS OF NEED

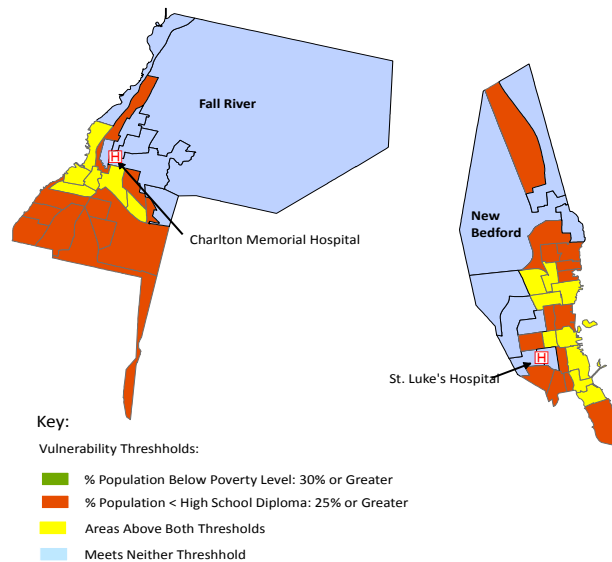
Figure 5 highlights the vulnerable populations' footprint in the Southcoast, that is, census tracts that meet established thresholds for poverty and educational attainment. The region's vulnerable populations reside in the cities of Fall River and New Bedford – there are no vulnerable populations outside these areas as defined for this report. Figure 6 provides a closer look at the vulnerable population footprint in Fall River and New Bedford.

**Figure 5**  
Vulnerable Populations Footprint  
By Census Tract



Source: United States Census American Community Survey, 2007–2011 Estimates.

**Figure 6**  
Vulnerable Populations Footprint  
Fall River & New Bedford



Source: United States Census American Survey, 2007–2011 Estimates.

### 3 DEMOGRAPHIC AND SOCIOECONOMIC ANALYSIS

The demographic and socioeconomic analysis presents a snapshot of the region’s people in terms of population, race, education, income, poverty, wages, and employment. Where applicable, data are presented by community, by CHNA 25 (Partners for a Healthier Community) and CHNA 26 (Greater New Bedford Community Health Network), and the state. The analysis also includes a focus on demographic and socioeconomic trends in Fall River, New Bedford, and Wareham, which are the locations of Southcoast Health System’s three hospitals and the communities facing the most challenging socioeconomic issues in the region.

#### 3.1 DEMOGRAPHIC ANALYSIS

The population of the Southcoast increased slightly since 2000. Most of this growth has been concentrated in the region’s towns. Fall River and New Bedford have seen shifts in their demographics as the share of minority residents increased. Additionally, the cities, as they have been for decades, are centers for immigrants arriving in the region, and are home to a younger population than the Southcoast’s towns. These trends are discussed in more detail in the sections below.

##### Population Trends

Overall, the population of the Southcoast has increased by 1.8 percent since the beginning of the century (see Table I). The long-term rate of population growth in the Southcoast (11.1%) lags behind that of the Commonwealth (17.0%). This gap appears to be mostly driven by long-term population declines in Fall River and New Bedford. Although New Bedford has recently experienced a slight increase in its population, the region’s cities have seen long-term declines in their populations since 1970, with Fall River’s population decreasing 8.4 percent and New Bedford’s 6.8 percent over the past 4½ decades.

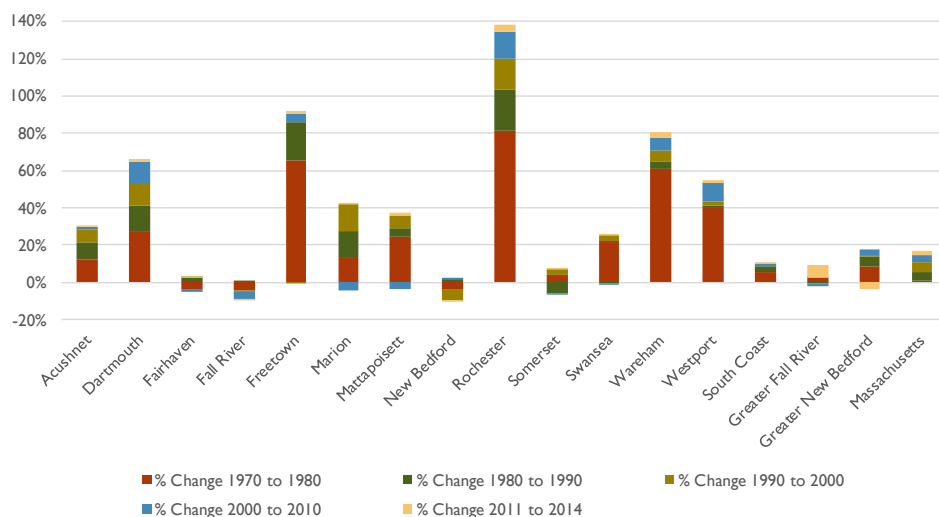
Table I  
Historical Population of the Southcoast

Municipality	Decennial Estimates				ACS 5 year estimates					% Change	% Change
	1970	1980	1990	2000	2010	2011	2012	2013	2014	1970 to 2014	2000 to 2014
Acushnet	7,767	8,704	9,554	10,161	10,303	10,299	10,302	10,314	10,329	33.0%	1.7%
Dartmouth	18,800	23,966	27,244	30,666	34,032	33,759	34,117	34,313	34,384	82.9%	12.1%
Fairhaven	16,332	15,759	16,132	16,159	15,873	15,915	15,893	15,952	15,971	-2.2%	-1.2%
Fall River	96,898	92,574	92,703	91,938	88,857	89,220	89,049	88,811	88,756	-8.4%	-3.5%
Freetown	4,270	7,058	8,522	8,472	8,870	8,828	8,867	8,923	8,957	109.8%	5.7%
Marion	3,466	3,932	4,496	5,123	4,907	4,926	4,913	4,915	4,935	42.4%	-3.7%
Mattapoisett	4,500	5,597	5,850	6,268	6,045	6,073	6,070	6,086	6,138	36.4%	-2.1%
New Bedford	101,777	98,478	99,922	93,768	95,072	95,006	94,952	94,927	94,873	-6.8%	1.2%
Rochester	1,770	3,205	3,921	4,581	5,232	5,159	5,229	5,299	5,348	202.1%	16.7%
Somerset	18,088	18,813	17,655	18,234	18,165	18,172	18,231	18,241	18,262	1.0%	0.2%
Swansea	12,640	15,461	15,411	15,901	15,865	15,886	15,911	15,951	16,005	26.6%	0.7%
Wareham	11,492	18,457	19,232	20,335	21,822	21,673	21,928	22,086	22,247	93.6%	9.4%
Westport	9,791	13,763	13,852	14,183	15,532	15,396	15,499	15,587	15,647	59.8%	10.3%
<b>South Coast</b>	<b>307,591</b>	<b>325,767</b>	<b>334,494</b>	<b>335,789</b>	<b>340,575</b>	<b>340,312</b>	<b>340,961</b>	<b>341,405</b>	<b>341,852</b>	<b>11.1%</b>	<b>1.8%</b>
<b>Greater Fall River</b>	<b>137,417</b>	<b>140,611</b>	<b>139,621</b>	<b>140,256</b>	<b>138,419</b>	<b>138,674</b>	<b>147,557</b>	<b>147,513</b>	<b>147,627</b>	<b>7.4%</b>	<b>5.3%</b>
<b>Greater New Bedford</b>	<b>170,174</b>	<b>185,156</b>	<b>194,873</b>	<b>195,533</b>	<b>202,156</b>	<b>201,638</b>	<b>193,404</b>	<b>193,892</b>	<b>194,225</b>	<b>14.1%</b>	<b>-0.7%</b>
<b>Massachusetts</b>	<b>5,689,170</b>	<b>5,737,093</b>	<b>6,016,425</b>	<b>6,349,097</b>	<b>6,547,629</b>	<b>6,512,227</b>	<b>6,560,595</b>	<b>6,605,058</b>	<b>6,657,291</b>	<b>17.0%</b>	<b>4.9%</b>

Source: 1970 through 2010, U.S. Census STF3 file. 2011–2014, U.S. Census, American Community Survey 5 year estimates (2011–2014), DP05.

Figure 7 below outlines the population change in each community and the region by decade. Rural suburban communities such as Rochester, Freetown, Wareham, and Westport have seen the greatest overall population percentage growth. In part, this growth is driven by the conversion of land from agricultural to residential uses. Although Greater New Bedford's population continues to increase, in more recent years, the growth rate in Greater Fall River has outpaced that of Greater New Bedford, which lost 7,931 residents from 2010 to 2014, compared with Greater Fall River's gain of 9,208 people.

Figure 7  
Percent Population Change by Decade and 2011–2014

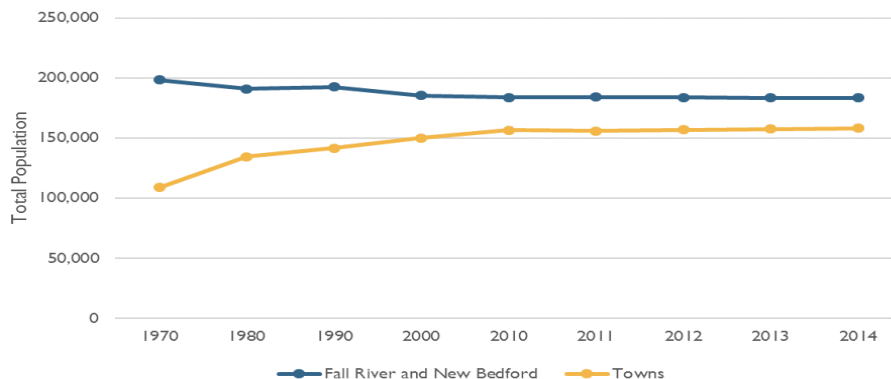


Source: 1970 through 2010, U.S. Decennial Census STF 3 File, 2011–2014, American Community Survey 5-Year Estimates (2007–2011, 2008–2012, 2009–2013, & 2010–2014, Table DP05).

### Population Growth and Development

Population growth and residential development have been uneven within the region. The total population in the cities of Fall River and New Bedford declined by 7.6 percent (-15,046 residents) between 1970 and 2010, while the Southcoast's suburban towns experienced population growth of 45.3 percent during the same period (+49,307 residents). Since 2010, the population's proportions have remained relatively constant (see Figure 8).

Figure 8  
Population Trends: Cities versus Towns



Source: 1970 through 2010, U.S. Decennial Census STF 3 File, 2011–2014, American Community Survey 5-Year Estimates (2007–2011, 2008–2012, 2009–2013, & 2010–2014, Table DP05).

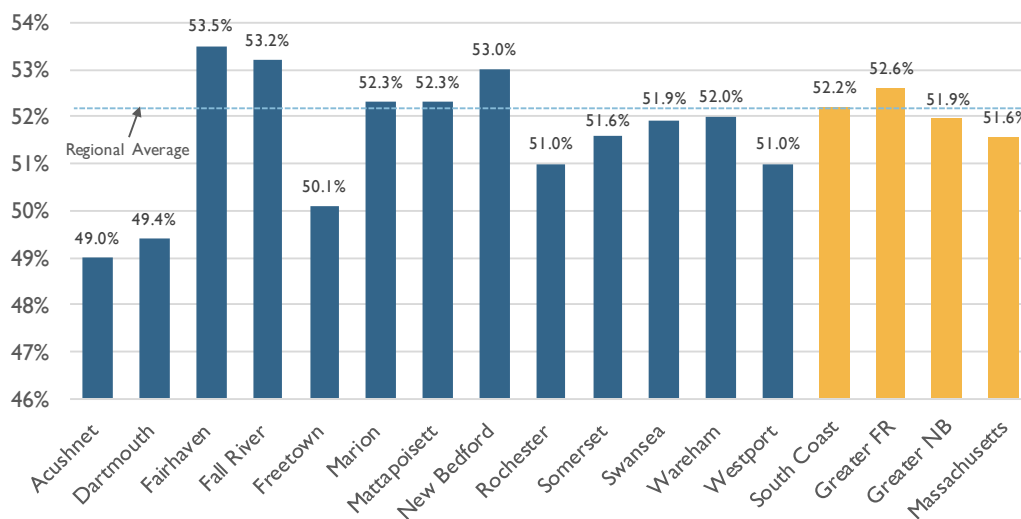


Sex

Monitoring the size of the female population is important to understanding the healthcare needs of a region. This is because women play an essential role in maintaining family health, and are more likely than men to access the healthcare systems for their needs and the needs of their children. In addition to the unique healthcare needs of women related to childbirth and care, their longer life expectancies mean that women are more affected by long-term and elder care issues than are men.<sup>10</sup>

Across the Southcoast, women account for 52.2 percent of the population, compared with 51.6 percent of the population statewide (see Figure 9). The town of Fairhaven and the region’s cities have the highest shares of women. Only in the towns of Acushnet and Dartmouth do women make up less than half of the population.

Figure 9  
Proportion of Women



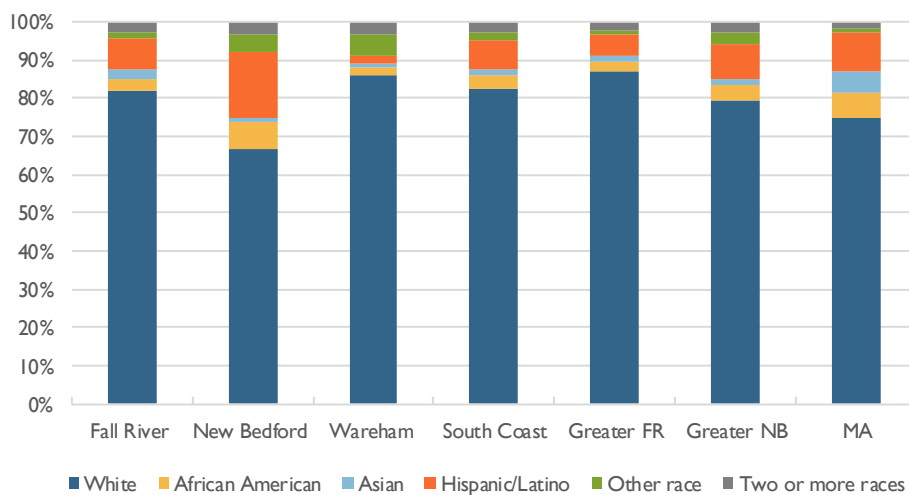
Source: 2010–2014 American Community Survey 5-Year Estimates, Table DP04.

<sup>10</sup> Wheeler, J.B.; Foreman, M.; & Rueschhoff, A. (2013) “Improving Women’s Health: Health Challenges, Access and Prevention” *Improving Women’s Health Series Brief No. 3*. National Conference of State Legislatures, Washington D.C.

## Race and Ethnicity

As the population grows more diverse, healthcare providers in the Southcoast will need to ensure that they are attuned to the needs of new arrivals. As a region, the Southcoast has a less diverse population than the Commonwealth; 82.7 percent of Southcoast residents are White, compared with 75.0 percent of residents in Massachusetts (see Figure 10).

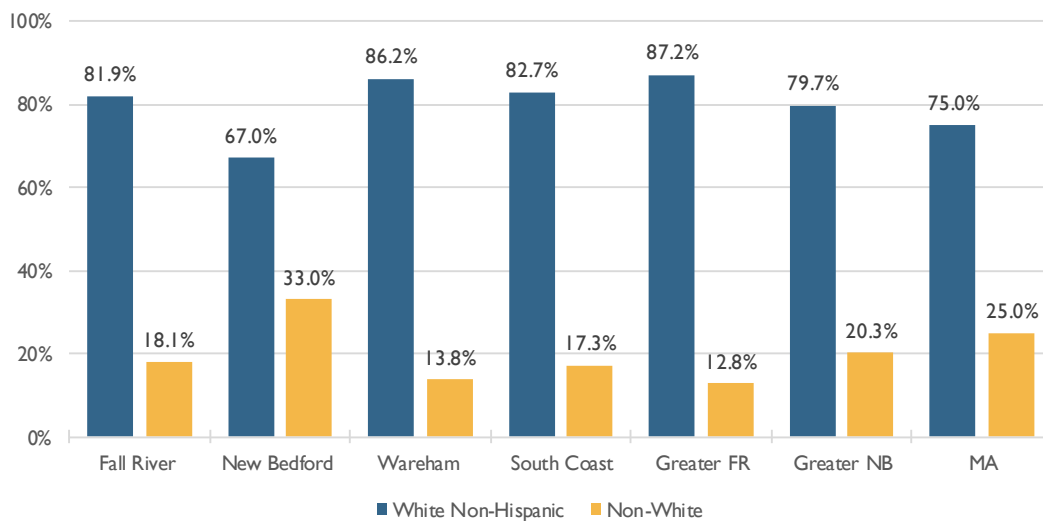
Figure 10  
Race and Ethnicity of the Population in Selected Areas



Source: 2010–2014 American Community Survey 5-Year Estimates, Table DP04.

A notable exception in the region is New Bedford, in which Hispanic or Latino residents account for 17.5 percent of all residents. This share is more than double that of the region (7.8%) and of Fall River (8.6%). Additionally, African-American residents comprise a larger share of New Bedford's population than elsewhere in the Southcoast. Indeed, non-White residents account for one-third (33.0%) of New Bedford's total population (see Figure 11).

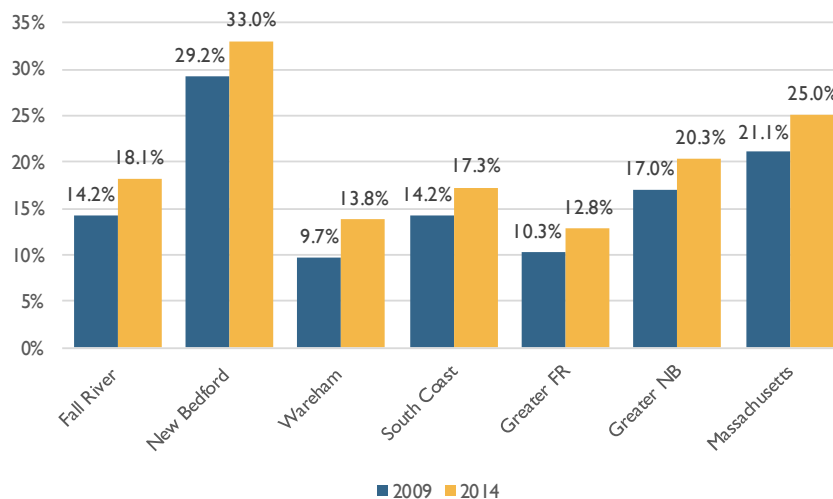
Figure 11  
White Non-Hispanic and Minority Shares of the Population in Selected Areas



Source: 2010–2014 American Community Survey 5-Year Estimates, Table DP04.

Since 2009, communities throughout the Southcoast have become more diverse (see Figure 12). From 2009 to 2014, the minority population in the region increased by 22.4 percent (10,797 people). Wareham saw the largest percentage increase in its minority population (49.3%, or 1,011 people), and New Bedford saw the largest nominal increase (17.5%, or 4,678 people).

Figure 12  
Change in Minority Population, Selected Areas from 2009–2014

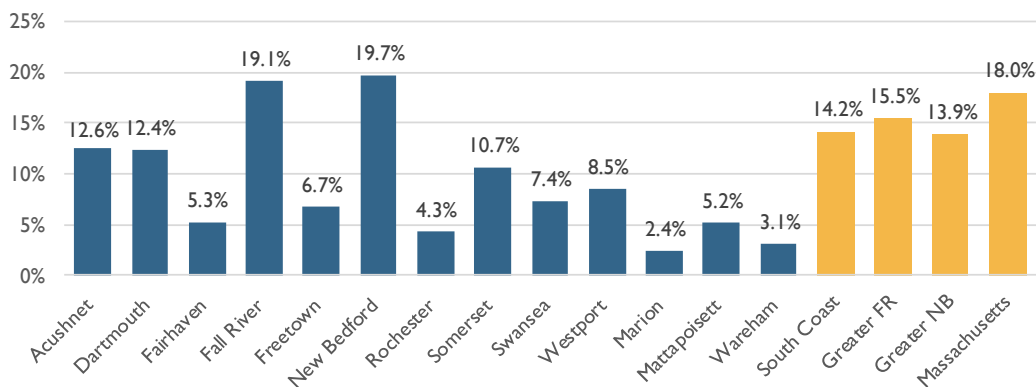


Source: 2005–2009 and 2010–2014 American Community Survey 5-Year Estimates, Table DP04.

### Foreign-Born Population

The Southcoast has long been an attractive place to settle for immigrants, as evidenced in foreign-born residents representing 14.2 percent of the region’s population (see Figure 13). As Gateway Cities, New Bedford and Fall River have been traditional destinations for new arrivals since the late 19th century. As of 2014, nearly 1 in 5 people in Fall River (19.1%) and New Bedford (19.7%) were born outside of the country. In both cities, Portuguese immigrants make up the majority of the foreign-born, comprising 51.3 percent of the foreign-born population in New Bedford and 64.0 percent in Fall River. However, as emigration from Portugal to the U.S. has slowed, Latin American and Asian immigrants make up increasing shares of the populations in New Bedford and Fall River.

Figure 13  
Foreign-Born Share of the Population, 2014

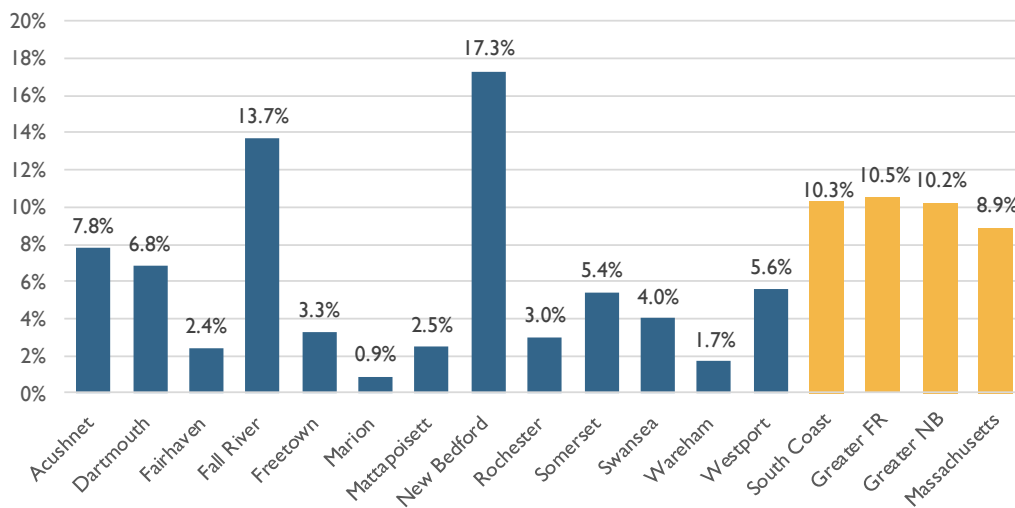


Source: 2010–2014 American Community Survey 5-Year Estimates, Table B05012.

A changing immigrant population can create challenges for service providers. Perhaps the largest obstacle is the language barrier. As the foreign-born population in the region begins to shift away from Lusophone countries of origin, healthcare providers will need to employ staff who can both engage with new arrivals in their native languages and understand cultural barriers to care.

Examining the share of the population who report that they speak English “less than well” can provide insight into the percentage of residents who have limited English proficiency. Figure 14 below demonstrates the share of the population over 5 years of age in each community with limited English proficiency. As major destinations for the region’s newly arrived immigrants, New Bedford and Fall River have the highest shares of residents reporting limited proficiency, 17.3 percent and 13.7 percent, respectively.

Figure 14  
Share of Population 5 Years and Over with Limited English Proficiency

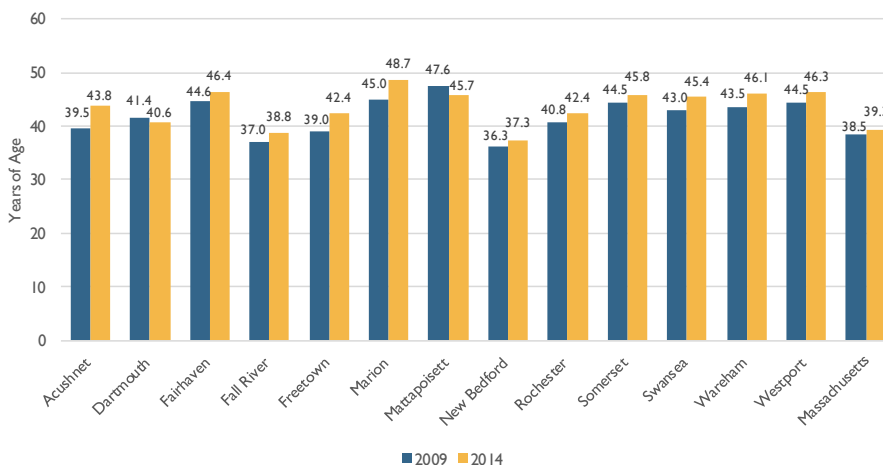


Source: 2010–2014 American Community Survey 5-Year Estimates, Table S1601.

### Age Cohort and Median Age

The population is aging nationally, statewide, and throughout the region, as evidenced by an increase in the median age. Nationally, the median age has increased from 36.5 years in 2009 to 37.4 years in 2014, as it advances toward the projected peak of 42.2 years in 2065.<sup>11</sup> The median age in Massachusetts in 2014 was 39.3 years, compared with 38.5 years in 2009 (see Figure 15). In 2014, the median age in Fall River and New Bedford was 38.8 years and 37.3 years, compared with 37.0 years and 36.3 years in 2009, respectively. There are healthcare implications inherent in this trend, such as increasing rates of chronic diseases, which create challenges for healthcare providers.

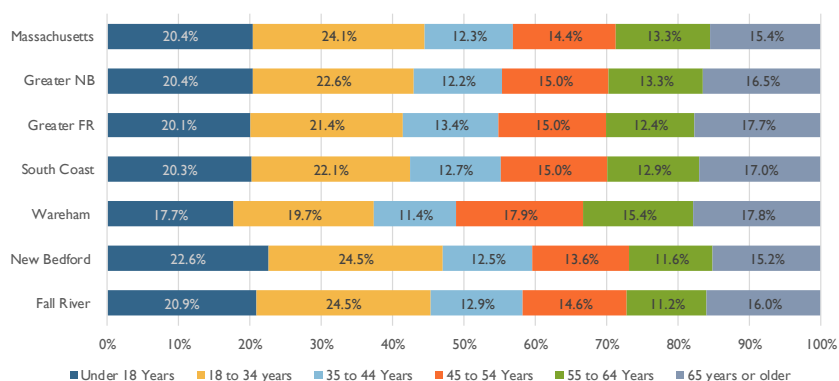
Figure 15  
Median Age by Community, 2009–2014



Source: 2005–2009 and 2010–2014 American Community Survey 5-Year Estimates, Table B01002.

The age cohorts in the Southcoast generally reflect their counterparts at the state level. However, the region has a slightly higher share of residents 65 years of age or older, which is more pronounced in the region’s towns. Fall River and New Bedford have larger shares of the population under the age of 35 when compared to their metro areas and the Southcoast overall (see Figure 16).

Figure 16  
Age Cohorts in Selected Areas



Source: 2010–2014 American Community Survey 5-Year Estimates, Table S010.

<sup>11</sup> Pew Research Center, 2015. “Modern Immigration Wave Brings 59 Million to U.S., Driving Population Growth and Change Through 2065: Views of Immigration’s Impact on U.S. Society Mixed.” Washington, D.C.: September.

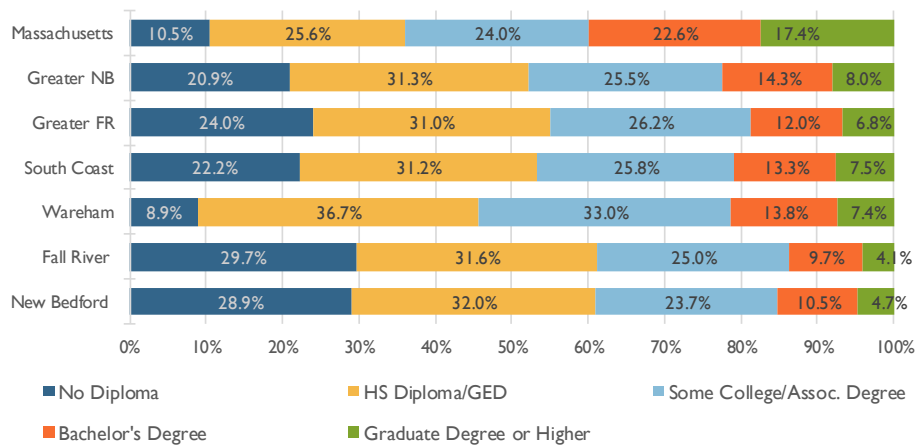
### 3.2 SOCIOECONOMIC ANALYSIS

Fall River and New Bedford continue to lag the region in most socioeconomic metrics, with lower levels of educational attainment, higher poverty levels, and higher unemployment. However, many of the region’s towns also struggle with these issues, particularly in comparison to state averages.

#### Educational Attainment

Massachusetts has the second most educated population in the country, behind Washington D.C., and one of the most educated populations in the world. Still, the Southcoast has long struggled with low levels of educational attainment. Within the region, Fall River and New Bedford have particularly low levels of educational attainment. In both cities, less than half of the population 25 years of age or older has ever attended college (see Figure 17). Additionally, when compared to the adult population statewide, Fall River and New Bedford have more than twice the percentage of adults who have not completed high school, 29.7 percent in Fall River and 28.9 percent in New Bedford, compared to 10.5 percent across the Commonwealth.

Figure 17  
Educational Attainment for the Population 25 Years of Age and Older in Selected Areas<sup>12</sup>



Source: 2010–2014 American Community Survey 5-Year Estimates, Table S1501.

<sup>12</sup> Data not always adding to 100% due to rounding.

Degree attainment in the Southcoast and its cities has increased. Since 2009, more than half the adult population across the region, in Fall River and in New Bedford has at least completed high school or taken some college courses (see Figure 18, Figure 19, Figure 20, and Figure 21).

Figure 18  
Educational Attainment 1990–2014, Fall River

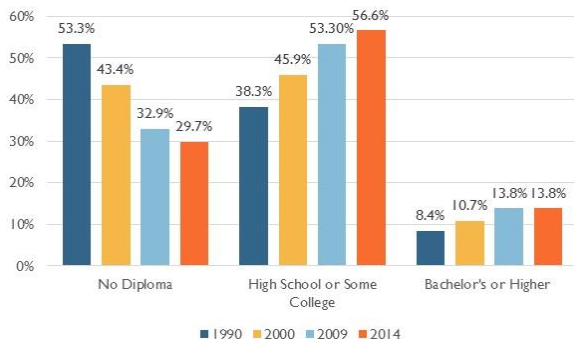


Figure 19  
Educational Attainment 1990–2014, New Bedford

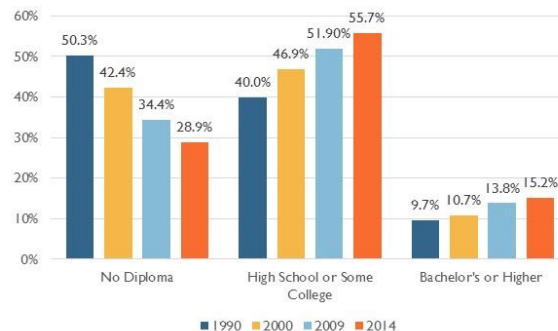


Figure 20  
Educational Attainment 1990–2014, Southcoast

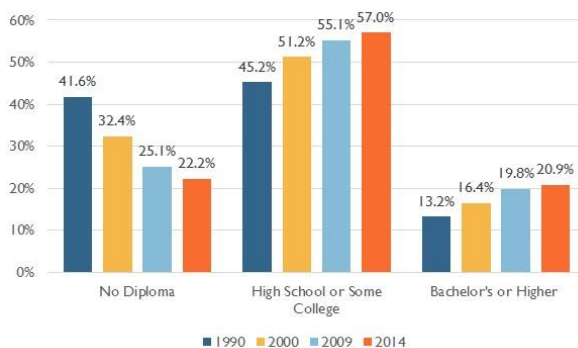
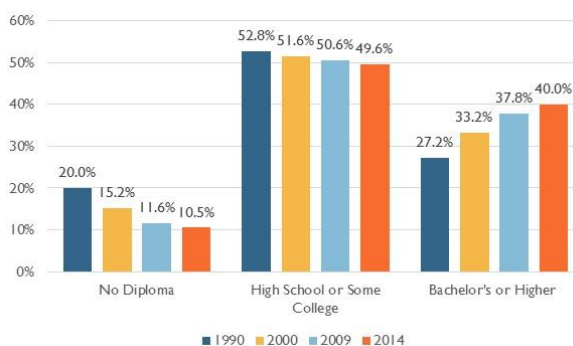


Figure 21  
Educational Attainment 1990–2014, Massachusetts



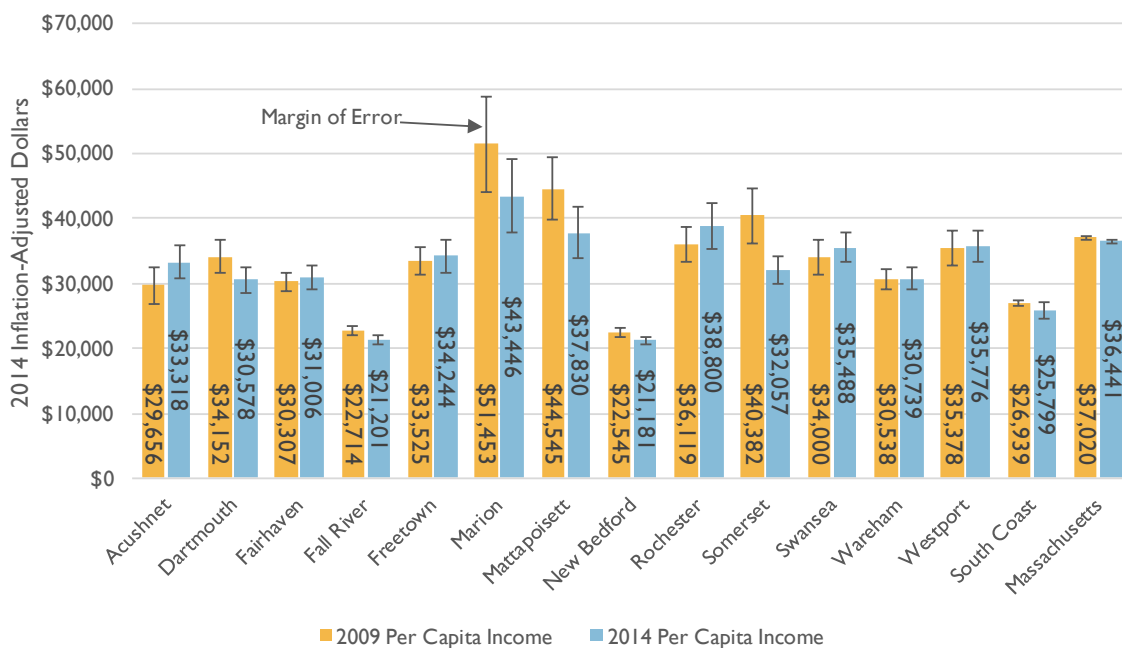
Sources: 1990 & 2000 Decennial Census Table DP-2; 2005–2009 & 2010–2015 American Community Survey 5-Year Estimates, Table S1501.

However, these gains in high school completion and college attendance have not yet led to major increases in the number of residents who have completed a Bachelor's or advanced degree. For instance, Fall River and New Bedford saw 7.4 and a 5.0 percentage point increases respectively in the share of adults who had completed high school and attended college between 2000 and 2009. These gains, however, did not translate into similar increases in the share of adults who completed a Bachelor's degree or higher from 2009 to 2014. In Fall River, the trend was flat, and in New Bedford the share increased by 1.4 percentage points. Moreover, both cities continue to lag behind the region and the state in this indicator; while degree attainment in the Southcoast increased 7.7 percentage points from 1990 to 2014, the regional rate has remained almost half that of the state's.

Per Capita Income

There continues to be a gap between the state’s per capita income and the Southcoast’s (see Figure 22). While the per capita income for suburban communities in the region approaches—or exceeds, in the case of Marion, Mattapoisett, and Rochester—that of the state, the regional figure is weighed down by low incomes in Fall River and New Bedford.

Figure 22  
Per Capita Income Estimates by Community, 2009–2014



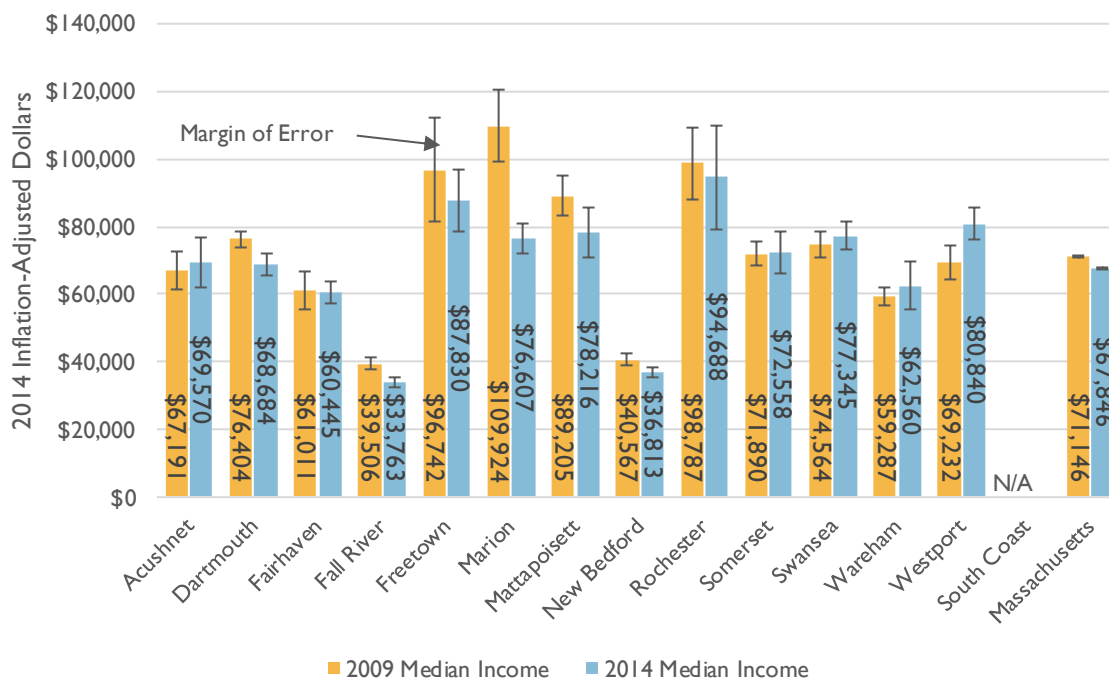
Source: 2005–2009 & 2010–2014 American Community Survey 5-Year Estimates, Table B19301.



### Median Household Income

Many Southcoast communities have seen median household incomes either stagnate or decline from 2009 to 2014 (see Figure 23) (incomes are adjusted for inflation). Examining the 2014 median incomes for Southcoast communities reveals a trend similar to the per capita incomes: the majority of the region’s towns have median household incomes above the state average. Only four communities (Fall River, New Bedford, Fairhaven, and Wareham) have median household incomes below that of the state. Specifically, Fall River’s median household income is less than half that of the Commonwealth as a whole.

Figure 23  
Median Income by Community, 2009–2014<sup>13</sup>



Source: 2005–2009 & 2010–2014 American Community Survey 5-Year Estimates, Table S1903.

<sup>13</sup> Without raw data for every household in the region is not possible to calculate a median household income for the Southcoast.

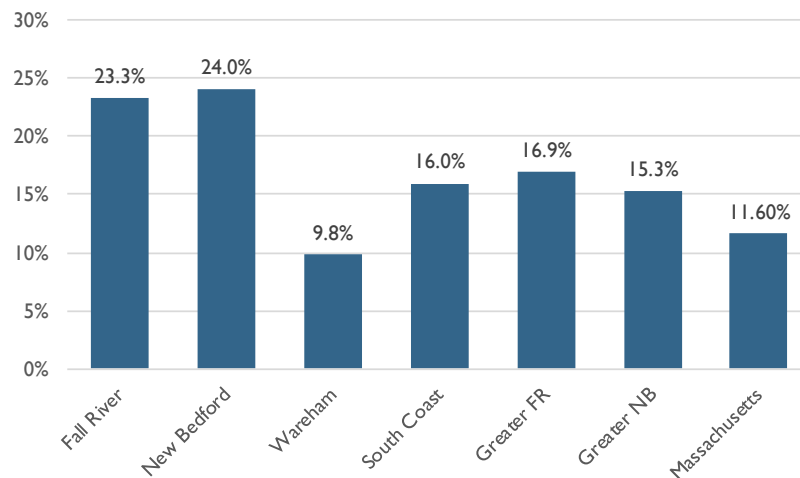
### 3.3 POVERTY

Poverty is a major social determinant of health. Individuals living in poverty are more likely to live in food deserts with limited availability of healthy food, and less likely to live in safe neighborhoods. Poverty status is determined by household size, age of the householder, and income, and it is not possible to disaggregate these factors once a household is determined to be in poverty. However, for reference, the Census poverty threshold for an individual interviewed at the end of 2014 was \$12,303.<sup>14</sup>

#### Individual Poverty

While the Southcoast has a higher share of people living in poverty than the state, the region's cities are home to disproportionate shares of people in poverty (see Figure 24). Nearly one-quarter of all people in Fall River (23.3%) and New Bedford (24.0%) live in households with annual incomes below the poverty level. These 42,660 individuals account for 80.7 percent of all people in poverty living in the Southcoast, while the two cities account for 54.4 percent of the region's total population.

Figure 24  
Share of the Population in Selected Areas Living Below the Poverty Level



Source 2010–2014 American Community Survey 5-Year Estimates, Table S1701.

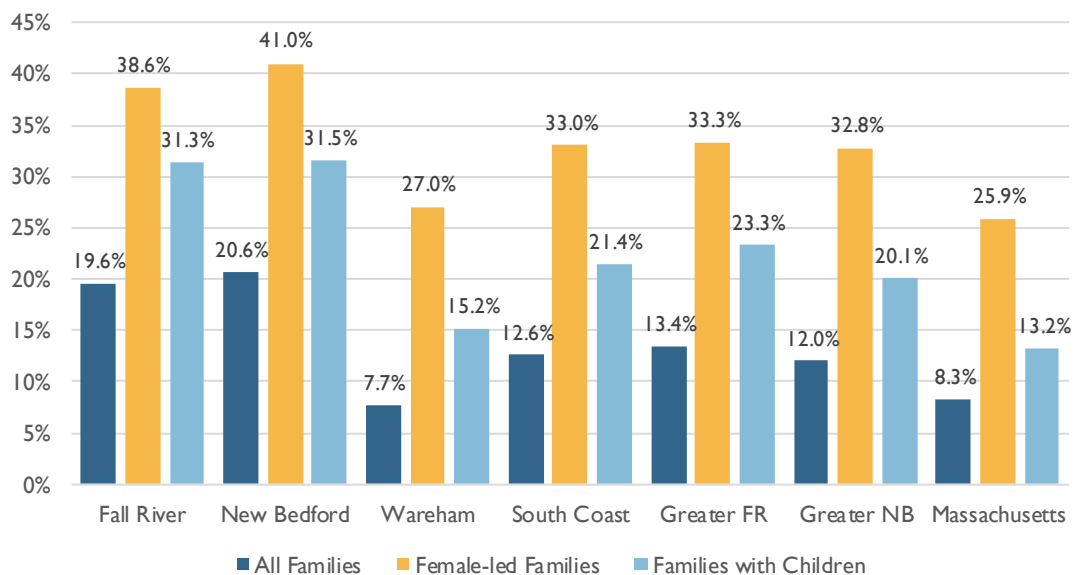
<sup>14</sup> In order to determine the number of people living in poverty, the Census uses a formula based on the 1982 federal poverty thresholds. These thresholds are adjusted for inflation, family size, and changes in living standards using a ratio based on the time of the interview.

## Family Poverty

Figure 25 below outlines the rates of poverty for all families, those led by a female with no spouse, and those with children. Similar to the individual measure of poverty, the Southcoast generally has higher poverty rates for families led by a female with no spouse present, and for families with children. In Fall River and New Bedford, these measures of poverty are higher than for the region. For example, less than 10 percent of all families statewide live in poverty (8.3%), compared with 12.6 percent of all families in the Southcoast and approximately 20 percent of all families in Fall River (19.6%) and New Bedford (20.6%).

In New Bedford, the share of female-led families living in poverty is nearly double the rate statewide, 41.0 percent compared with 25.9 percent. High rates of poverty among female-led families contribute to negative health outcomes of these women and their children, since there is no spouse to share healthcare responsibilities and costs.

Figure 25  
Family Poverty in Selected Areas

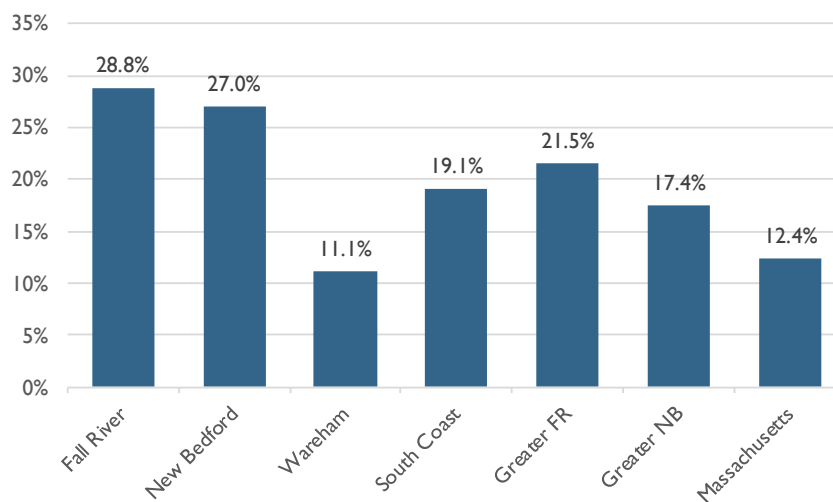


Source: 2010–2014 American Community Survey 5-Year Estimates, Table S1702.

### Supplemental Nutritional Assistance Program (SNAP) Participation

The goal of SNAP is to assist low-income families by increasing their purchasing power to alleviate hunger and malnutrition.<sup>15</sup> Program eligibility is income based, with a family of four needing to earn \$2,025 a month or less in order to qualify. Since SNAP is designed to assist people in poverty, it is not surprising that there are high participation rates in Fall River and New Bedford, where there are higher rates of poverty (see Figure 26).

Figure 26  
Share of Households in Selected Areas Receiving SNAP Benefits<sup>16</sup>



Source: 2010–2014 American Community Survey 5-Year Estimates, Table S2201.

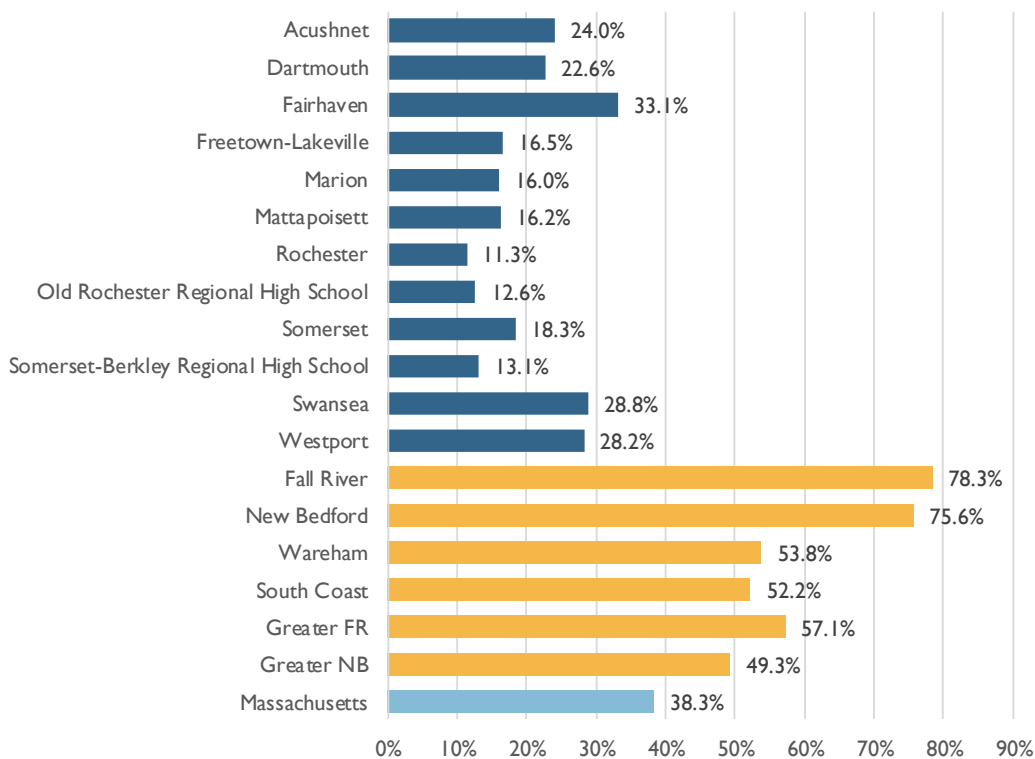
<sup>15</sup> USDA. (2014). *A Short History of SNAP*. Retrieved from: <http://www.fns.usda.gov/snap/short-history-snap>.

<sup>16</sup> It should be noted that, beginning in 2008, the ACS removed questions about the dollar value of SNAP benefits, which according to the Census Bureau, resulted in a “statistically significant increase in the reciprocity rate for food stamps because of a decrease in item nonresponse rate” (*American Community Survey and Puerto Rican Community 2014 Survey Subject Definitions*, pg. 18). Therefore, estimates from the 2005–2009 ACS are made up of responses from before and after the question was altered and cannot be compared to the recent estimates used in this report.

Student Poverty

Just over half (52.2%) of the students in the Southcoast were classified as low-income by the Department of Elementary and Secondary Education (DESE) in the 2013 to 2014 school year (see Figure 27). Much like other poverty measures, the share in the Southcoast exceeds that of the state, where 38.3 percent of all students are low-income. This difference is driven primarily by the larger number of low-income students in Fall River (78.3% or 8,080 students) and New Bedford (75.6%, or 9,634 students). Indeed, all of the Southcoast towns have student poverty rates below the state average, while low-income students in the cities account for 76.1 percent of the regional total.

Figure 27  
Students Classified as Low Income, 2013–2014 School Year<sup>17</sup>



Source: Massachusetts Department of Elementary and Secondary Education.

<sup>17</sup> Although more recent data on students in poverty is available from DESE, the 2013–2014 data are presented here for two reasons. First, it allows for a more holistic picture of the region which is mostly described using 2014 Census Bureau data. Second, beginning in 2015, DESE changed how low-income status was described and determined.

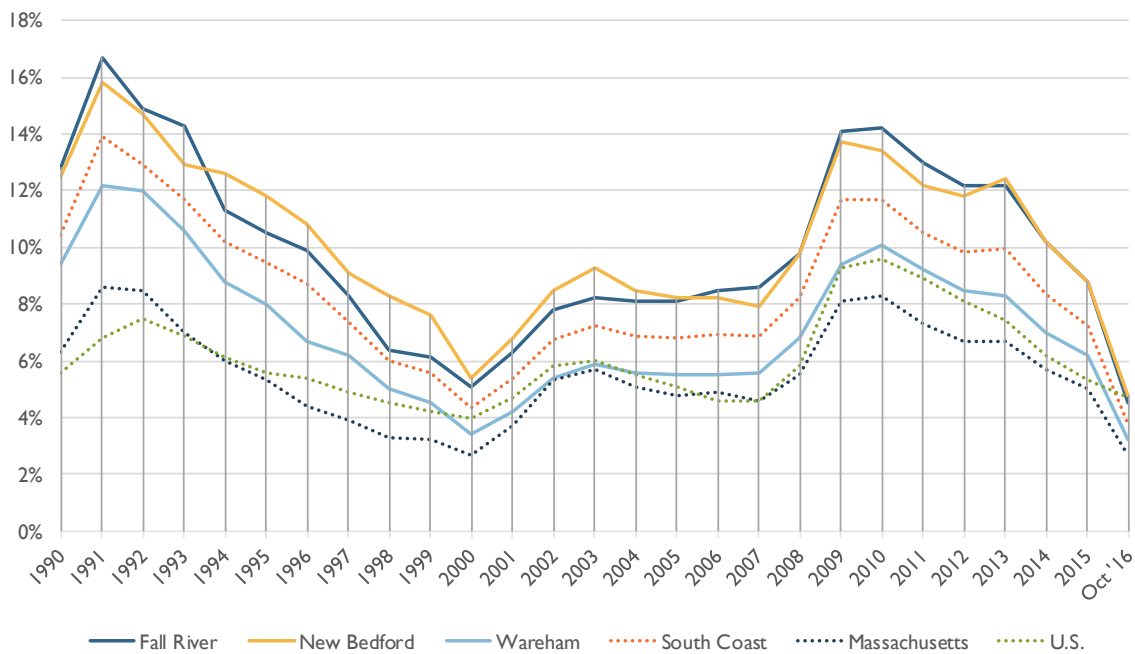
### 3.4 ECONOMIC PROFILE OF THE SOUTHCOAST

The Southcoast’s economic base has been historically dependent on manufacturing jobs located in the cities and, consequently, its economy has been extremely volatile with wide fluctuations in unemployment levels between peaks and troughs of the business cycle. Over the past few decades, the New Bedford and Fall River areas have struggled with the structural shocks of deindustrialization and the transition to a post-industrial economy, as evidenced in the shift from blue-collar manufacturing industries to service-related industries. Currently, health care, educational services, retail trade, and business services are four of the most rapidly expanding employment sectors in the region and they are projected to remain at the forefront of the region’s employment growth, while opportunities for new growth exist around a renewal of high-tech manufacturing.

#### Unemployment

Although unemployment rates across the state and country have declined from their 2009 peak, the Southcoast continues to have an unemployment rate above that of the Commonwealth as a whole (see Figure 28). This historic trend is driven by the higher unemployment rates in Fall River and New Bedford, which both had an annual average unemployment rate of 8.8 percent in 2015, compared with 7.2 percent across the Southcoast and 5.0 percent statewide. As of October 2016, Fall River and New Bedford have the lowest unemployment rates in recent history, 4.5 and 4.8 percent, respectively, but still lag behind the state, which had an unemployment rate of 2.7 percent in October.

Figure 28  
Unemployment Rate 1990–October 2016

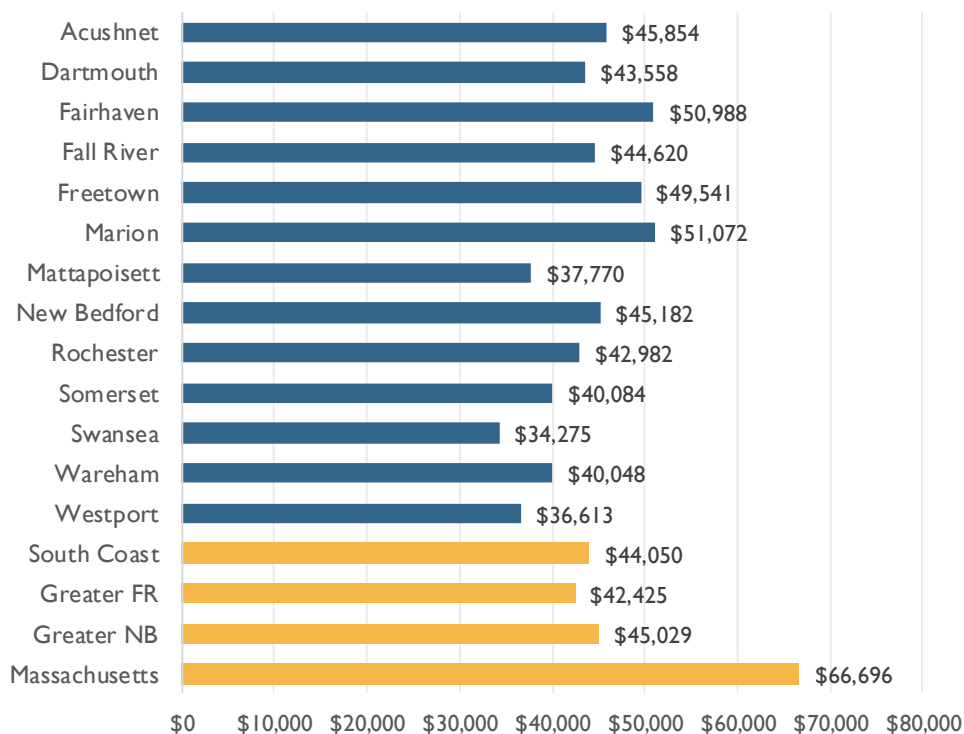


Source: Massachusetts Executive Office of Labor and Workforce Development LAUS Reports (Not Seasonally Adjusted).

Wages

Wages in the Southcoast range from a low of \$34,275 in Swansea to a high of \$51,072 in Marion (see Figure 29). The regional average annual wage is \$44,050, and the averages for Fall River and New Bedford do not vary greatly from the region.

Figure 29  
Average Annual Wage, 2015<sup>18</sup>

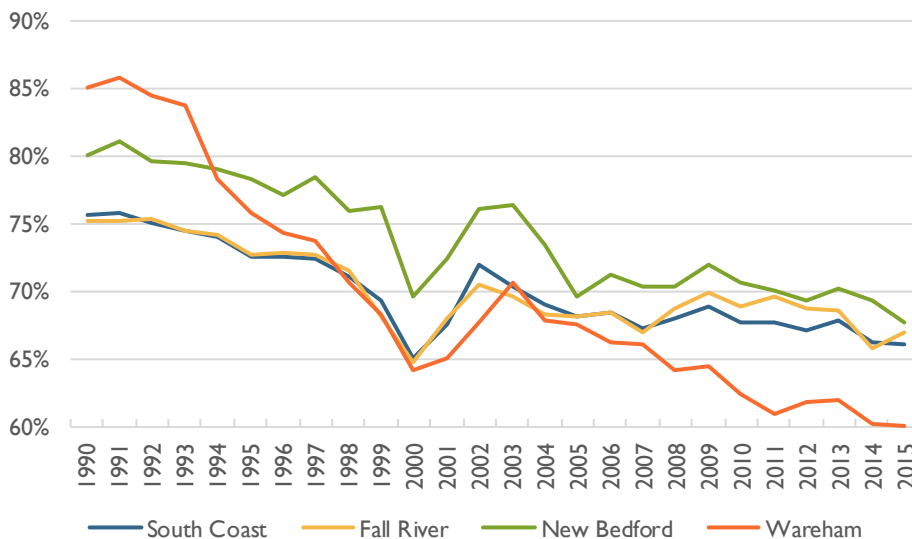


Source: Massachusetts Executive Office of Labor and Workforce Development ES-202 Data.

<sup>18</sup> Although averages provide some insight into the economic conditions in the region and the state, they are subject to the effect of outliers and should be interpreted with caution.

All the communities in the region fall considerably far behind the state average wage of \$66,969. As Figure 30 demonstrates, the gap between the state and regional average wage has been persistent for decades, and has only been reduced by 9.7 percentage points in the past 25 years. Over this time period, New Bedford and Fall River saw similar declines, while the 25.1 percentage point decline in the wage gap between Wareham and the Commonwealth demonstrates the variability in wages among communities in the region over time.

Figure 30  
Annual Average Wage in Selected Areas as a Percentage of State Average, 1990–2015



Source: Authors' Calculations from Massachusetts Executive Office of Labor and Workforce Development ES-202 Data.



## 4 HEALTH ASSESSMENT

The health assessment presents a variety of indicators that measure residents' health and overall well-being. Health indicators are presented across six categories: Clinical Care, Physical Environment, Health Behavior, Health Outcomes, Children's Health, and Health Disparities. Data for this analysis are derived from several sources:

- Massachusetts Department of Public Health's MassCHIP database including the Behavioral Risk Factor Surveillance System (BRFSS), Cancer Incidence, Childhood Lead Screening, and Vital Statistics
- Massachusetts Department of Public Health, Bureau of Environmental Health (BEH)
- Massachusetts Environmental Public Health Tracking (EPHT) data and maps
- Massachusetts Center for Health Information and Analysis (CHIA) database
- Massachusetts Health Insurance Survey (MHIS)
- CommunityCommons.org.<sup>19</sup>

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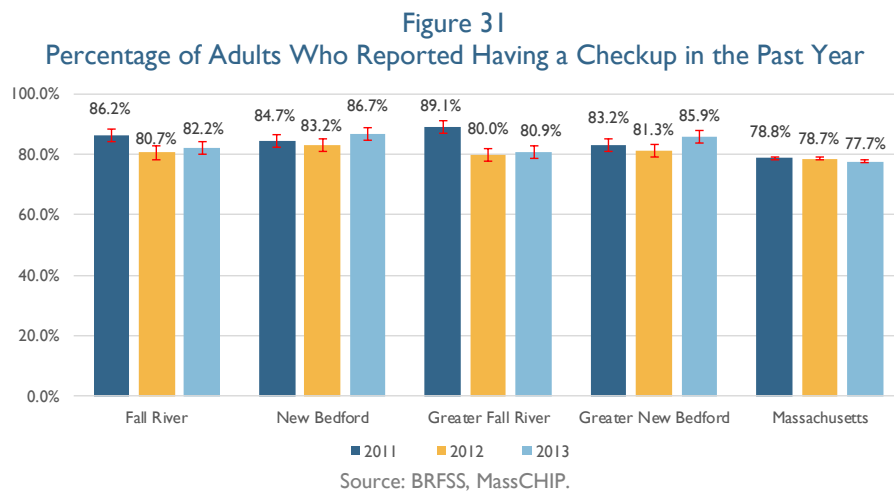
<sup>19</sup> Generally, the most recent BRFSS or other state data available is reported in the analysis. Occasionally years are combined by the Massachusetts Department of Public Health to decrease the data's margin of error or to enable a sufficient amount of data to avoid data suppression rules.

## 4.1 CLINICAL CARE

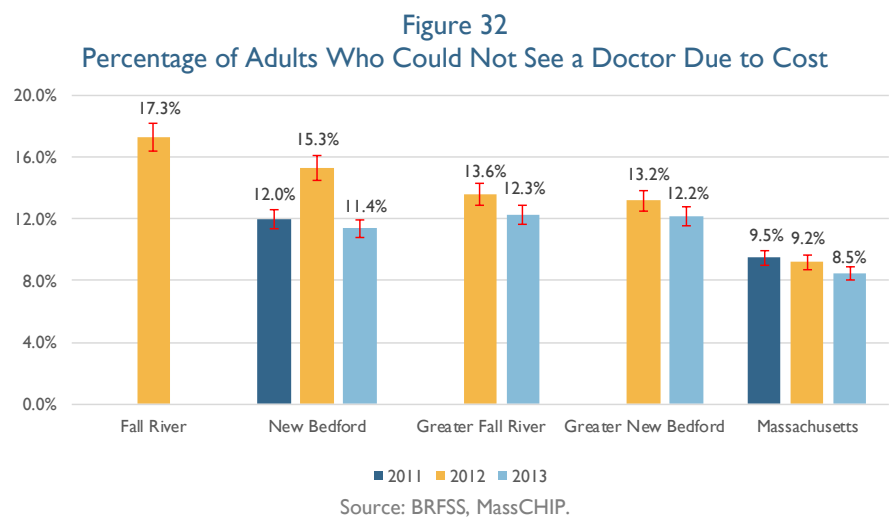
The topic of clinical care covers access to care, prevalence of health insurance, participation in health screenings, vaccination rates, and access to dental care.

### Access to Care

Southcoast residents have access to care that is comparable to residents of Massachusetts as a whole. Access to care is determined by the following indicators: the percentage of adults who had a checkup in the past year, the percentage of adults who could not see a doctor due to cost, and the percentage of adults with health insurance. Healthcare access for Southcoast residents is generally better than Massachusetts as a whole, as measured by the percentage of adults who reported having a checkup in the past year (see Figure 31).



The percentage of adults who could not see a doctor due to cost peaked for all geographies in 2012. However, New Bedford, Greater Fall River, and Greater New Bedford experienced a decline in the percentage of adults who could not see a doctor due to cost since 2012, although these results are generally within the BRFSS survey’s margin of error (see Figure 32).<sup>20</sup>



<sup>20</sup> Data not available for all years for all geographies.

With 90.6 percent of the population reporting coverage over the past 12 months, the Southcoast compares favorably to the Commonwealth (90.0%) with regard to access to health insurance (see Table 2). The Southcoast’s uninsured percentage over the past 12 months (9.4%) is slightly higher than the state’s average (8.0%).

Table 2  
Insurance Coverage Status

	Always Insured Over the Past 12 Months	Ever Uninsured Over the Past 12 Months	Uninsured at Time of Survey
<b>South Coast</b>	90.6%	9.4%	3.6%
<b>Massachusetts</b>	90.0%	8.0%	3.6%

Source: Massachusetts Health Insurance Survey, 2015.

### Health Screening

The extent to which Southcoast residents utilize health screenings reflects issues of access, awareness, provider attention and guidance, as well as incidence of negative health outcomes. Health screening data collected through BRFSS reflect percent utilization of screening for cancers, blood cholesterol, and HIV.

#### Cancer Screening

Four types of cancer screenings are tracked for Fall River, New Bedford, and both Southcoast CHNAs. Generally, the Southcoast region compares favorably to Massachusetts with respect to cancer screenings (see Table 3). The proportion of the region’s adults who undergo a colonoscopy, which tests for colorectal cancer, is 61.0 percent and 59.7 percent for Greater Fall River and Greater New Bedford, respectively, as compared to 61.5 percent for Massachusetts. When comparing the number of mammograms, the Southcoast cities and CHNAs generally exceed the state average. The rates for conducting breast exams and Pap smears, however, are slightly lower than the state averages in all locales in Table 3 except for Greater Fall River, which is slightly above the state average. This suggests an opportunity for primary care/family practitioners and OB-GYN practitioners to focus on increasing physical examination rates in those areas.<sup>21</sup>

Table 3  
Proportion of Adults Participating in Cancer Screening<sup>22</sup>

	Colonoscopy	Mammogram	Breast exam	Pap smear
<b>Fall River</b>	62.2%	83.5%	79.4%	75.3%
<b>New Bedford</b>	58.3%	86.2%	73.4%	71.4%
<b>Greater Fall River</b>	61.0%	86.3%	82.9%	77.6%
<b>Greater New Bedford</b>	59.7%	87.6%	76.0%	74.0%
<b>MA</b>	61.5%	84.6%	82.2%	77.6%

Source: BRFSS, MassCHIP 2012.

<sup>21</sup> Some of these differences are within the BRFSS survey’s margin of error, thus conclusions should be made with caution.

<sup>22</sup> Mammogram and Breast Exam data reflect the share of adult women who participated in a screening.

Cholesterol Screening

Table 4 shows that a slightly higher proportion of Southcoast residents are obtaining blood cholesterol screenings compared to Massachusetts’ residents as a whole, although these differences are within the BRFSS survey’s margin of error.

Table 4  
Had a Cholesterol Screening in the Last Five Years

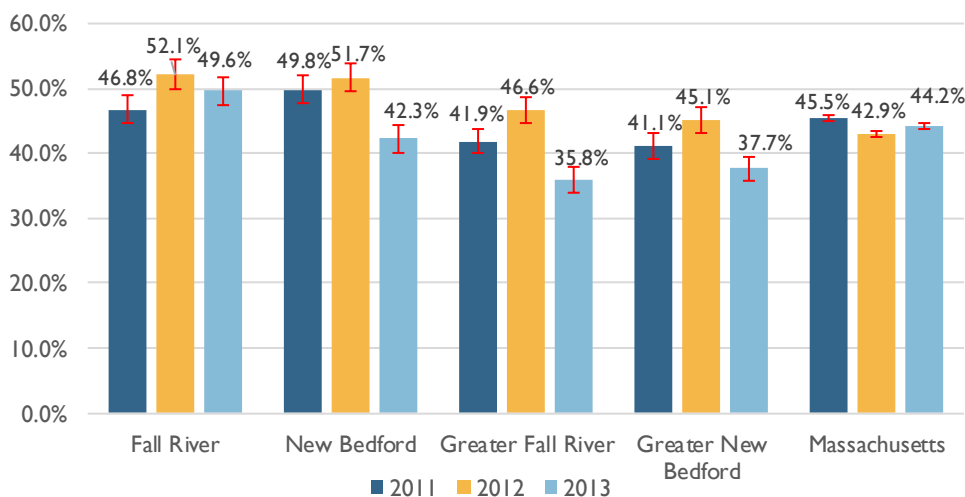
	2011	2013
Fall River	78.6%	79.5%
New Bedford	84.2%	86.0%
Greater Fall River	No data	85.5%
Greater New Bedford	No data	88.4%
Massachusetts	83.7%	84.0%

Source: BRFSS, MassCHIP.

HIV Testing

HIV testing rates in the Southcoast region peaked in 2012, although the drop in testing rates in Greater Fall River (10.8%) and Greater New Bedford (7.4%) are within the BRFSS survey’s margin of error (see Figure 33).

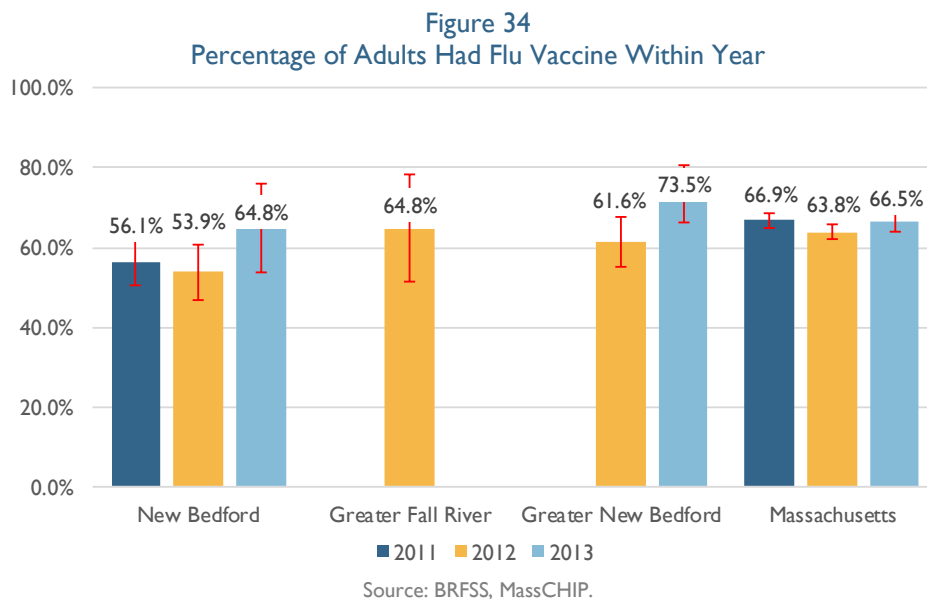
Figure 33  
Percentage of Adults Tested for HIV



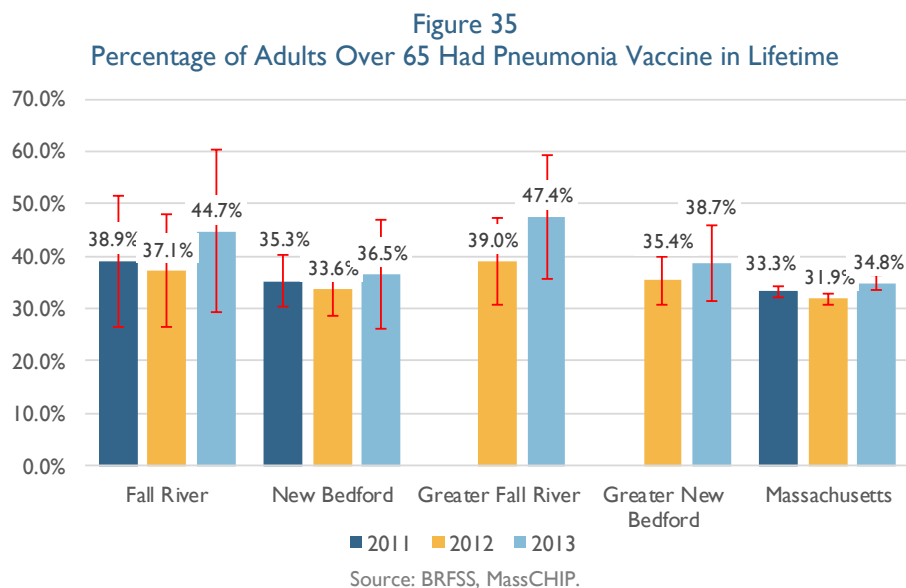
Source: BRFSS, MassCHIP.

Vaccination Rates

Flu vaccine rates increased more significantly in both New Bedford and Greater New Bedford in comparison to the statewide average, although these increases are generally within the BRFSS survey’s margin of error (see Figure 34).<sup>23</sup>



Pneumonia vaccination rates increased in all locations from 2011 to 2013, and exceeded statewide averages. This is particularly true in Fall River and Greater Fall River, although these increases are generally within the BRFSS survey’s margin of error (see Figure 35).<sup>24</sup>



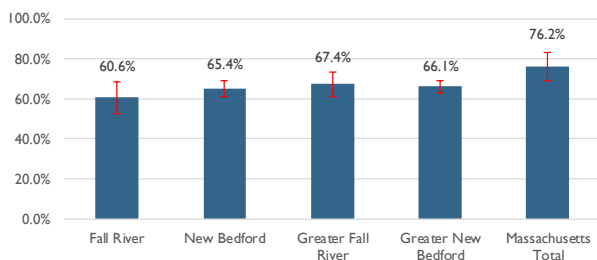
<sup>23</sup> Data not available for all years for all geographies.

<sup>24</sup> Data not available for all years for all geographies.

## Access to Dental Care

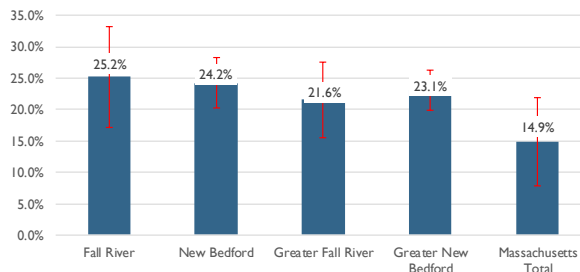
Poor dental health, and gum disease in particular, is linked to negative outcomes such as diabetes, heart disease, and stroke. Additionally, maternal dental health can affect neonatal outcomes.<sup>25</sup> The Southcoast region continues to be underserved in dental health, both in the percentage of residents having dental visits in the past year and the percentage of residents losing five or more teeth due to decay or disease (see Figure 36 and Figure 37).

**Figure 36**  
Percentage of Residents Had Dental Visit in Past Year



Source: BRFSS, MassCHIP 2012.

**Figure 37**  
Percent Residents Losing Five or More Teeth Due to Decay or Disease



Source: BRFSS, MassCHIP 2012.

## 4.2 PHYSICAL ENVIRONMENT

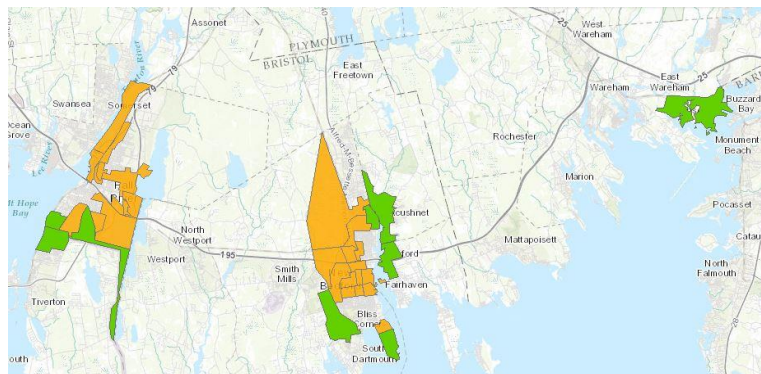
Not only is the health status of Southcoast residents influenced by availability of and access to clinical care, it is also affected by the physical conditions of the region: access to amenities that facilitate healthy eating and active living, air quality, and sources of environmental contamination.

### Healthy Food

Access to healthy food influences the ability of Southcoast residents to exhibit healthy eating behaviors, thus reducing the risk of diet-related health outcomes such as diabetes and heart disease. The Southcoast region continues to experience sections classified as food deserts, where most residents live over 0.5 miles away from a grocery store or supermarket. Additionally, several neighborhoods of Acushnet, Fairhaven, and Wareham have no access within one mile (see Figure 38).

<sup>25</sup> <http://www.healthypeople.gov/2020/LHI/oralHealth.aspx>.

Figure 38  
Southcoast Food Deserts

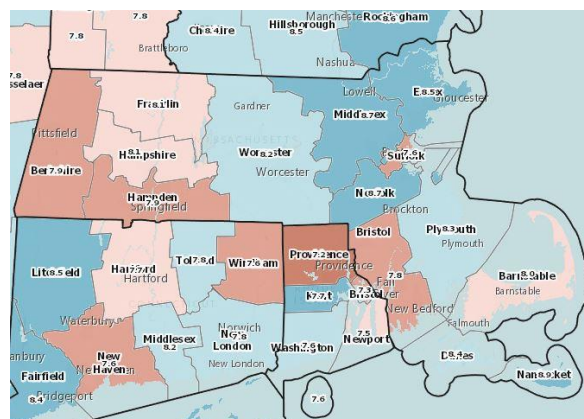


Source: USDA Food Environment Atlas.

Note: Orange = low-income census tracts, green = no access within one mile.

County Health Rankings (CHRs) measure the health of nearly all counties and are computed using county-level measures of the food environment index from a variety of state and national datasets. The healthiest counties have a ranking of eight or above. Bristol county has one of the lowest rankings in Massachusetts with a rank of 7.8, with only one other county (Suffolk, including Boston) having a lower rank (see Figure 39).

Figure 39  
Food Environment Index, CHR, 2016



Source: Community Commons, Food Environment Index, CHR March 2016.

### Walkability of Neighborhoods

An active lifestyle can significantly promote positive health outcomes, but the ability to exercise can be influenced by factors like walkability and access to parks and recreation facilities.

Communities where residents can easily access many nearby amenities on foot are considered Walkable Neighborhoods. This feature can encourage people to accomplish more day-to-day tasks on foot, which in turn promotes exercise and reduces obesity. Research has shown that people who live in walkable places weigh 6 to 10 pounds less than their peers do in less amenity-rich neighborhoods.<sup>26</sup> Walk Boston and Mass in Motion, along with community partners, conducted a walk assessment in the South End neighborhood of New Bedford, which illustrates

<sup>26</sup> <http://unews.utah.edu/old/p/072808-1.html>.

the types of issues often found in lower income neighborhoods in Gateway cities like New Bedford and Fall River. The South End walk assessment demonstrated numerous walking and safety deficiencies to be addressed including:<sup>27</sup>

- Sidewalks that were impassable due to cracks, trees, trash, or other debris.
- Crossings without proper markings or cross cuts for carriages, wheelchairs or without proper lights.
- Traffic signals without proper pedestrian signaling and markings.
- School zones without sufficient beacons and slow speed signage.

## Air Quality

Air quality is linked to respiratory and cardiac health. It can also influence the incidence of asthma, bronchitis, damage to the nervous system, organ damage, cardiovascular problems, and cancer. In particular, high levels of air pollutants can trigger heart attacks or aggravate asthma and other respiratory issues. Air quality is measured by ozone, particulate matter in the air, and sources of air pollution in the region. Limits are established by the Environmental Protection Agency (EPA) and are known as National Ambient Air Quality Standards (NAAQS).<sup>28</sup>

Air Quality Ambient monitoring data provides the most accurate information on the concentration of pollutants in air but is limited by the availability of monitoring equipment. The Environmental Public Health Tracking (EPHT) program within the Massachusetts Bureau of Environmental Health has been working with the EPA to develop predictive models of air pollution concentrations in counties without actual monitors. In the Southcoast, there are two actual monitors to aid in these prediction models: one in Fall River on Globe Street and the other in Fairhaven at Hastings Middle School.

Data from the EPHT program provide five-year trends in air quality with regard to fine particles and ozone levels. In 2015, Plymouth County (including Rochester, Wareham, Marion, and Mattapoisett) had zero days where ozone was above the standard and zero percent of monitoring days of PM<sub>2.5</sub> above the standard.<sup>29</sup> In Bristol County (including most of the Southcoast towns, Fall River and New Bedford) one percent of all monitoring days registered PM<sub>2.5</sub> levels above the NAAQS standard and zero days with ozone levels above the NAAQS standard in 2015.

## Drinking Water Quality

The EPHT also tracks nine contaminants in public community water systems (not private wells). The contaminants tracked include arsenic, atrazine, DEHP, disinfection byproducts, lead, nitrates, PCE (tetrachloroethylene), TCE (trichloroethylene), and uranium. Between 2009 and 2013, there were no violations reported for water systems that service Fall River, New Bedford, and Wareham.<sup>30</sup>

## Environmental Contamination

The Southcoast is home to a number of sites that contain and/or generate contaminants that can negatively affect residents' health. This is influenced in part by the industrial histories of Fall River and New Bedford, which were home to many manufacturing facilities that used toxic chemicals and metals that were often released into the water

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<sup>27</sup> South End Neighborhood Walk Assessment, New Bedford, MA, October 19, 2016.

<sup>28</sup> See Massachusetts Department of Public Health, Bureau of Environmental Health, EPHT website at <https://matracking.ehs.state.ma.us/Environmental-Data/Air-Quality/index.html>.

<sup>29</sup> PM<sub>2.5</sub> are fine particles 2.5 micrometers in diameter or smaller that can only be seen with an electron microscope. Fine particles are produced from all types of combustion, including motor vehicles, power plants, residential wood burning, forest fires, agricultural burning, and some industrial processes. See: <https://www.airnow.gov/index.cfm?action=aqibasics.particle>.

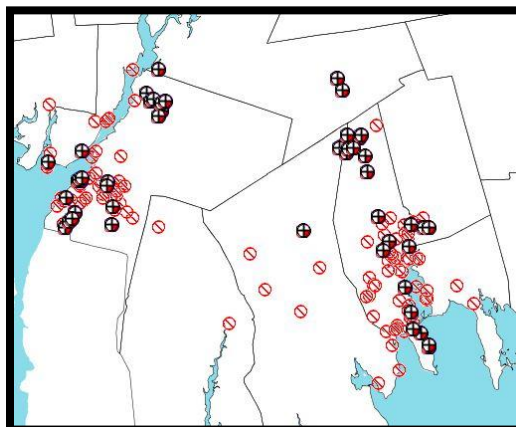
<sup>30</sup> See MassDEP Drinking Water Program, 2009–2013.



and soil. While some facilities continue to emit contaminants, many are now classified as brownfields – sites that are no longer used, and cannot be reused until their contamination is remediated.

Notably, the region is home to seven Superfund sites: brownfields that have been determined to contain enough contamination and risk that they qualify for federal cleanup funds. These include New Bedford Harbor, Sullivan’s Ledge, Dartmouth’s former Re-solve Inc. site, and Fairhaven’s Atlas Tack site.<sup>31</sup> Many more brownfields are scattered throughout the region, with heavy concentrations in Fall River and New Bedford. While the extent of contamination on these sites is not significant enough to qualify them for Superfund status, these brownfields affect residents’ health through the possibility of exposure as well as the potential blight they can inflict on neighborhoods. Fall River is home to 481 reportable contaminated sites, 39 of which present sufficient hazards as to limit activity on and use of these parcels, whereas in New Bedford, 43 out of 662 reportable sites are limited.<sup>32</sup> Figure 40 illustrates two sources of environmental contamination in the Southcoast: sites with activity and use limitations (denoted by a “no” symbol) and facilities that use large quantities of toxic materials in their operations (denoted by a target symbol).

Figure 40  
Toxic and Contaminated Sites



Source: MassGIS (Office of Geographic Information).

According to the U.S. Centers for Disease Control and Prevention, people who are members of minority racial and ethnic groups and are poor may encounter greater environmental burdens in their neighborhoods than others. This principle, known as environmental justice (EJ), was established to acknowledge and address the inequalities that exist in some geographies. In such EJ neighborhoods (which the Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA) defines as census block groups) at least one of the following is true:

- Median annual household income is at or below 65 percent of the statewide median income;
- Twenty-five percent or more of the residents are a minority; or
- Twenty-five percent or more of the residents are not fluent in the English language.

EJ neighborhoods tend to be more vulnerable to environmental and health hazards that can be further exacerbated by these populations having greater difficulty in accessing health resources. EJ neighborhoods are more likely to have populations living near toxic waste sites (which has been established as an issue for the Southcoast region) and in substandard housing. Fall River, New Bedford, and Wareham are all above the statewide percentage of population residing in a block group where one or more of the EJ criteria is met (see Table 5). Note that Fall River and New Bedford are significantly greater than the statewide average (66.7% and 69.6% versus 12.1% respectively).

<sup>31</sup> See <https://www.epa.gov/superfund/search-superfund-sites-where-you-live>.

<sup>32</sup> [http://public.dep.state.ma.us/SearchableSites2/Search\\_Results.aspx](http://public.dep.state.ma.us/SearchableSites2/Search_Results.aspx) as of 12/13/16.

Table 5  
Percent of the Population Meeting Environmental Justice Criteria

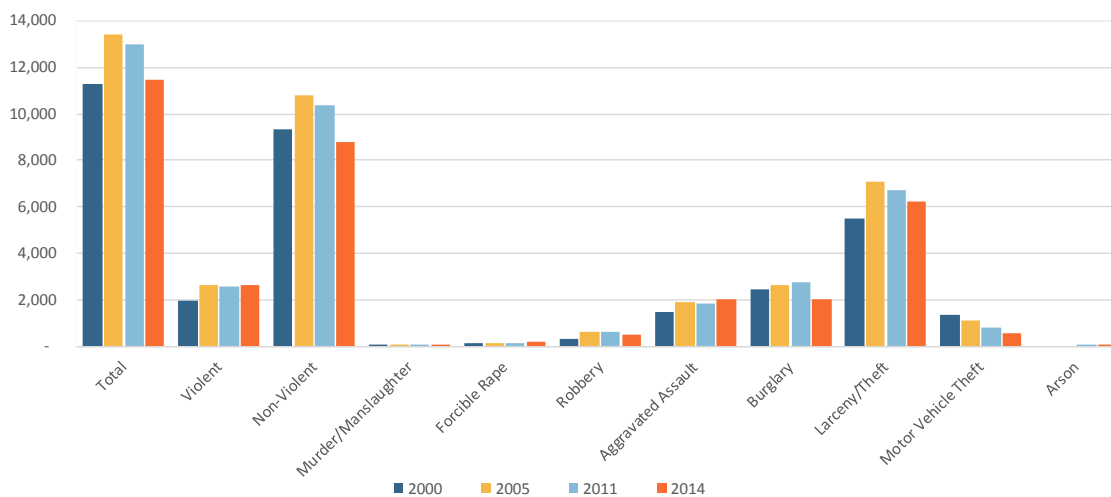
Geography	Percent
Fall River	66.7%
New Bedford	69.6%
Wareham	20.7%
Massachusetts	12.1%

Source: Massachusetts EPHT,  
Calculated Using Data from 2010 U.S. Census and the EOEEA.

## Crime

Crime rates are both a predictor and a consequence of economic and social indicators such as drug use, perceived and actual levels of safety, economic conditions, and changing demographics. The number of crimes reported in the Southcoast declined since 2005. The reduction in crime is fueled primarily by fewer non-violent crimes being committed, while violent crimes have essentially remained constant from 2005 through 2014 (see Figure 41).

Figure 41  
Number of Reported Crimes in the Southcoast



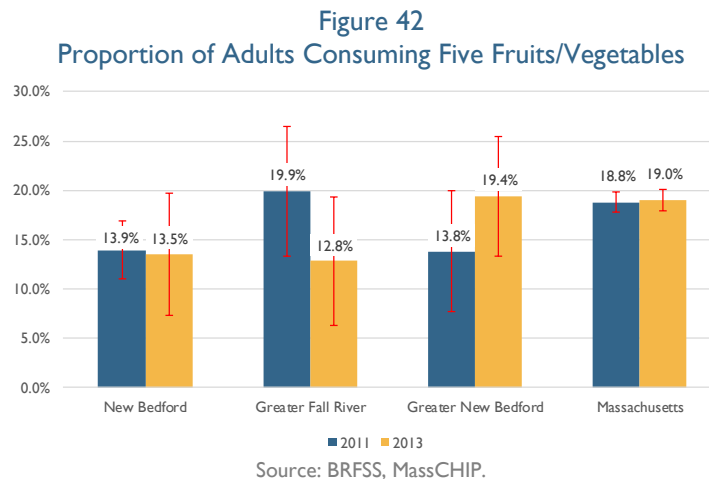
Source: FBI Uniform Crime Reporting Program.

### 4.3 HEALTH BEHAVIOR

Health behavior is defined as the actions taken by individuals or groups to change or maintain their health status or to prevent illness or injury.<sup>33</sup> This category includes behaviors related to healthy eating, active living, smoking, injury prevention, and drug and alcohol use.

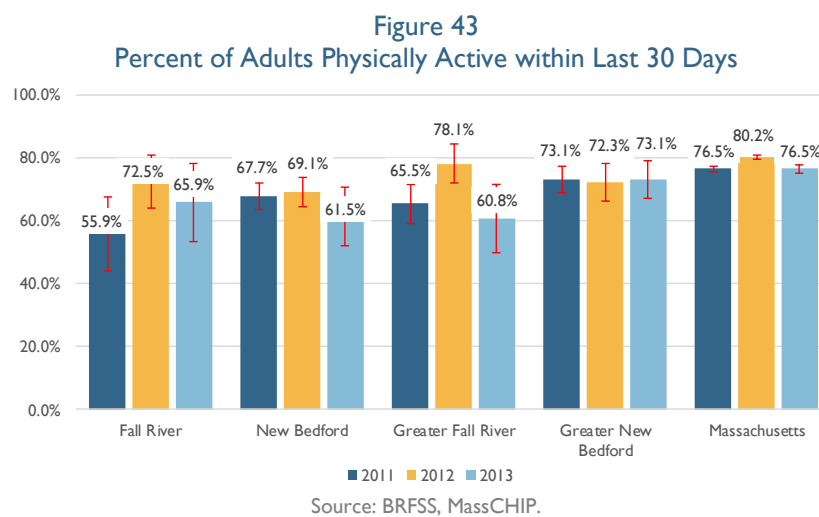
#### Healthy Eating

Greater than 80 percent of residents of New Bedford, Greater Fall River, Greater New Bedford, and Massachusetts do not consume the recommended daily five servings of fruits and vegetables (see Figure 42).



#### Active Living

Residents from all geographies are more likely to report being physically active over a 30-day period than report eating five fruits and vegetables daily. Figure 43 shows three-year trends for Fall River, New Bedford, Greater Fall River, Greater New Bedford and Massachusetts.

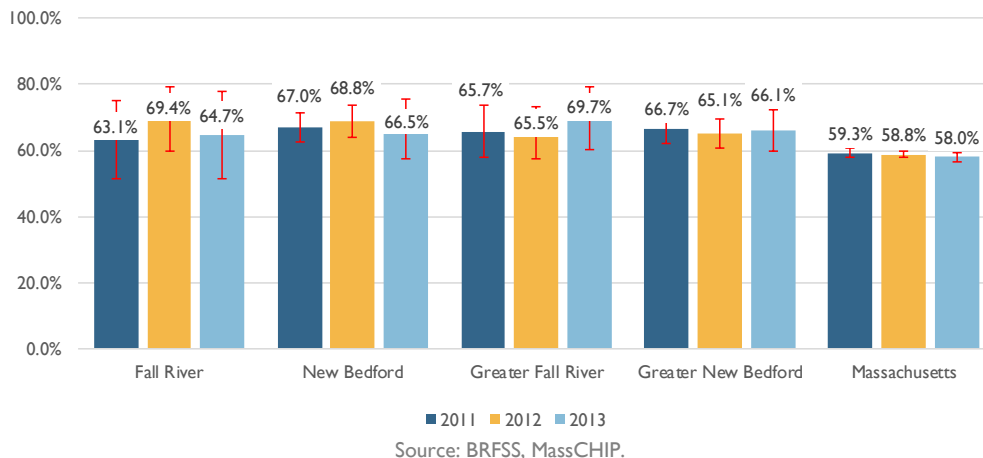


<sup>33</sup> <http://www.cdc.gov/workplacehealthpromotion/glossary/index.htm!#H>.

## Healthy Weight

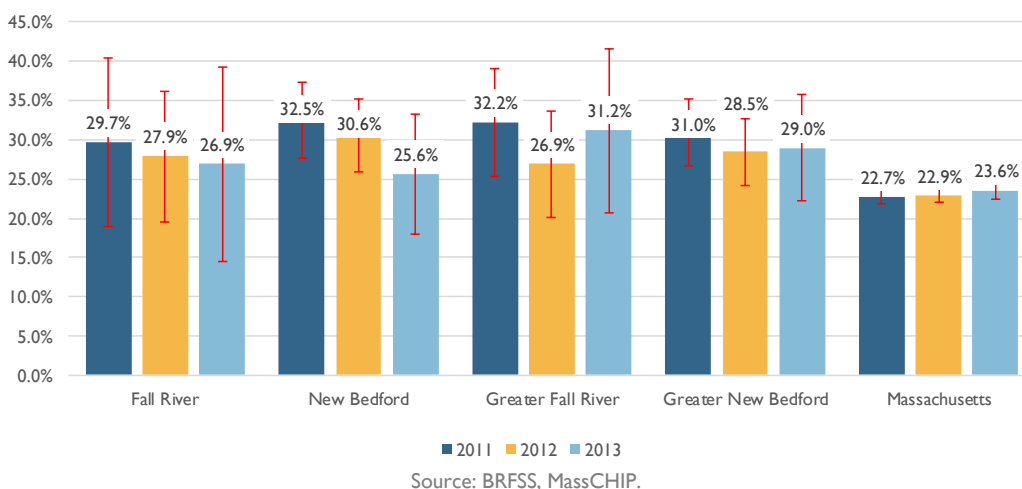
The ability to maintain a healthy weight is both a health behavior and a health outcome associated with nutrition and physical activity. Maintaining a healthy weight is important for prevention of serious health problems such as heart disease, high blood pressure, Type 2 diabetes, gallstones, respiratory problems, and certain cancers.<sup>34</sup> Generally, Southcoast residents have higher percentages of overweight individuals than the statewide averages, although some of these differences are within the BRFSS survey’s margin of error (see Figure 44).

Figure 44  
Percent of Adults That Are Overweight (BMI>25)



Almost half of the overweight groups weighed enough to qualify for the designation of obese (BMI>30) in 2013, although there was a downward trend from 2011 to 2013 in the percentage of obese adults in both Fall River and New Bedford. However, these differences are within the BRFSS survey’s margin of error (see Figure 45).

Figure 45  
Percent of Adults That Are Obese (BMI>30)

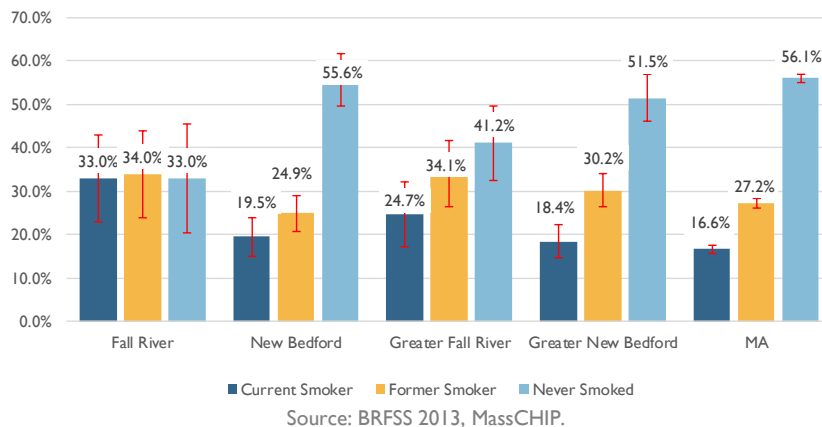


<sup>34</sup> [https://www.nhlbi.nih.gov/health/educational/lose\\_wt/](https://www.nhlbi.nih.gov/health/educational/lose_wt/).

## Smoking

Smoking prevalence, measured by current smokers, remained higher for Southcoast adults (24.7% in Greater Fall River and 18.4% in Greater New Bedford) than for Massachusetts residents (16.6%) in 2013 (see Figure 46). While the gap appears to be closing between the percentage of Southcoast and Massachusetts residents who have tried or plan to quit smoking, these differences are within the BRFSS survey’s margin of error and more years of data is needed.

Figure 46  
Smoking Prevalence



## Injury Prevention

Injuries that occur or exacerbate due to lack of wearing seatbelts and opioid use are tracked by the MassCHIP data system. Figure 47 shows an increasing trend of Southcoast residents who always, or nearly always, wear seatbelts. The gap between Southcoast locales and Massachusetts has narrowed, with Greater Fall River and Greater New Bedford at 85 percent versus Massachusetts at 90 percent in 2013, although some of these differences are within the BRFSS survey’s margin of error.

Figure 47  
Percent Adults That Always or Nearly Always Wear Seatbelts

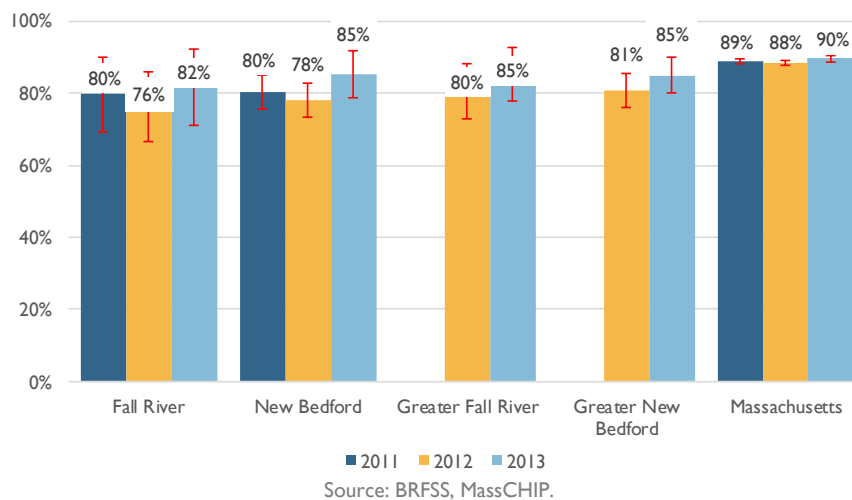
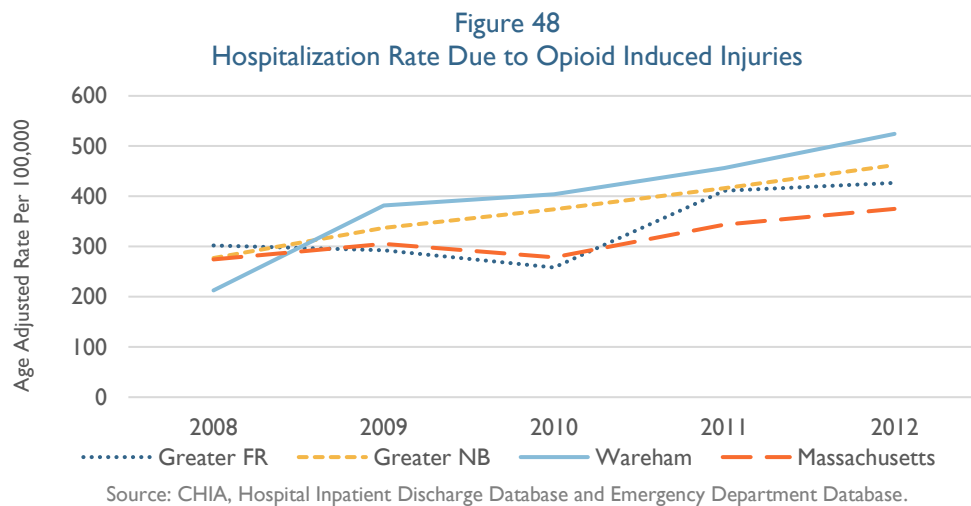


Figure 48 shows an alarming trend: an increasing rate of hospitalizations due to opioid related injuries for all geographies. Southcoast residents have higher rates than the Massachusetts average, with the highest rates exhibited in Wareham.



### Alcohol Use

Southcoast residents exhibit similar patterns of alcohol use in comparison to Massachusetts residents as a whole (see Figure 49). The proportion of adults who report binge drinking (defined as consuming five or more drinks on an occasion for men, and four or more drinks for women) within the past 30 days was 22.4 percent for Greater Fall, 18.5 percent for Greater New Bedford, and 19.4 percent statewide in 2013.

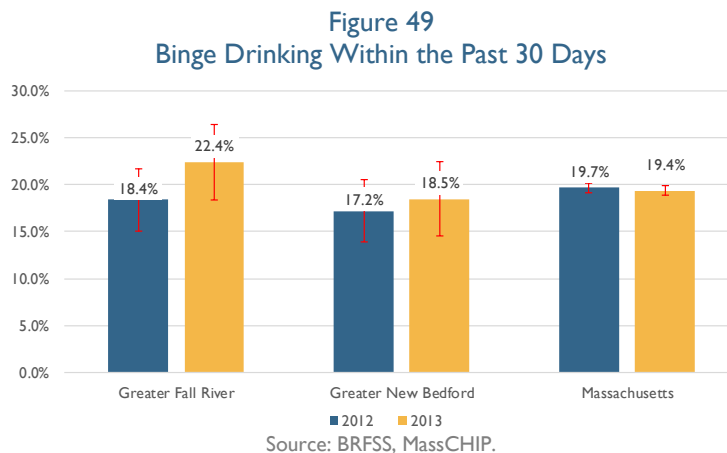


Table 6 shows that 28.8 percent of men in Greater Fall River and 24.5 percent of men in Greater New Bedford reported binge drinking within the past 30 days, while only 10.7 percent of women in Greater New Bedford reported binge drinking (no data available for women in Greater Fall River). Greater New Bedford showed a slightly lower incidence of binge drinking compared to Massachusetts (both for men, 24.5% versus 25.6%; and women, 10.7% versus 14.4%) while Greater Fall River (28.8%, male) was slightly above the Massachusetts average (25.6%, male).<sup>35</sup>

<sup>35</sup> Some of these results are within the BRFSS survey's margin of error, thus conclusions should be made with caution.

Table 6  
Binge Drinking Within Past 30 Days, by Sex

	Greater Fall River	Greater New Bedford	Massachusetts
Male	28.8%	24.5%	25.6%
Female	no data	10.7%	14.4%

Source: BRFSS, 2012 MassCHIP.

### Drug Use – the “Massachusetts Opioid Crisis”

Drug use and the “opioid crisis” have been identified as central issues and focus of health concern in Massachusetts. The effort began with the Governor’s mandate and recommendations from the Governor’s Opioid Addiction Working Group, along with the 2014 Commonwealth of Massachusetts’ Health Policy Commission’s Opioid Use Disorder report (Opioid Use Report).<sup>36</sup> It was more firmly cemented as policy direction and emphasis by the 2016 legislation:

- *Chapter 55 of the Acts of 2016: An act requiring certain reports for opiate overdoses*, which directs the Department of Public Health (DPH) to assess factors contributing to increasing overdose rates using a multitude of datasets; and
- *Chapter 52 of the Acts of 2016: An act relative to substance use, treatment, education and prevention*, which in part, directs the Health Policy Commission (HPC) to take further steps to address the impact of the opioid epidemic on the health care system.

In support of these initiatives, the Massachusetts Department of Public Health has provided data from several offices: MassCHIP, Mass CHIA and the Bureau of Substance Abuse Services, which has been used in the Opioid Use Report. Four key statistics were obtained and analyzed in the Opioid Use Report:

- The rate of opioid-related hospital utilization across the state (including both emergency department (ED) and inpatient discharges);
- The total volume of opioid-related discharges by hospital (including both ED and inpatient discharges);
- The total volume of neonatal abstinence syndrome (NAS) discharges by hospital; and
- The availability of outpatient pharmacologic treatment for opioid use disorder.

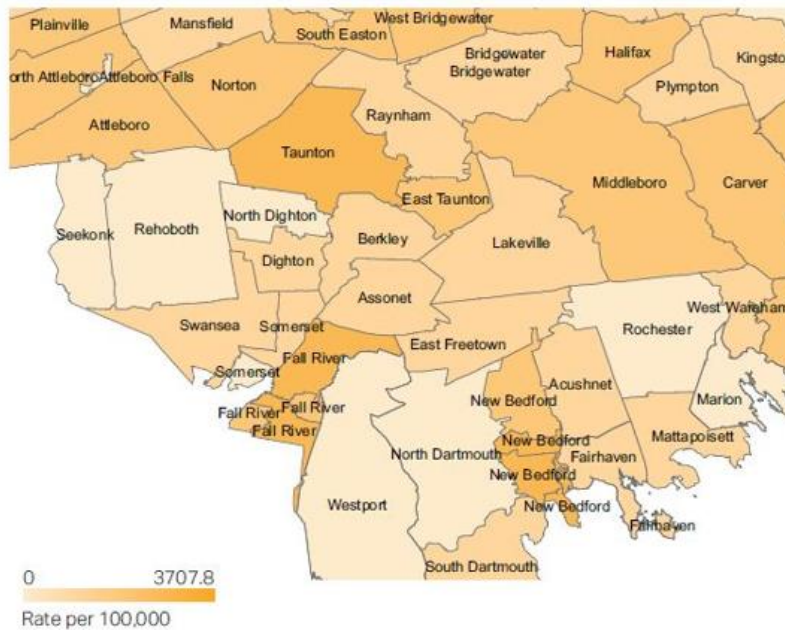
Furthermore, the Opioid Use Report identified that the opioid use disorder has manifested itself with disproportional impacts on certain residents, communities, and hospitals, which directly affects the Southcoast region. The first three statistics will be reported in the sections below.

<sup>36</sup> Full Name of Report: Opioid Use Disorder in Massachusetts: An Analysis of its Impact of the Health Care System, Availability of Pharmacologic Treatment, and Recommendations for Payment and Care Delivery Reform, 2014.

Rate of Opioid-Related Hospital Utilization

When looking at the rate of opioid-related hospital utilizations in regions of Massachusetts containing Gateway Cities, such as Fall River and New Bedford, the Opioid Use Report indicates a disproportionate volume of discharges for Fall River and New Bedford as seen graphically in Figure 50.<sup>37</sup> Moreover, analysis of the Key Informant Interviews yielded substance abuse as one of the highest issues of concern for the Southcoast region, just below housing and homelessness issues and lack of adequate food. It is a particularly significant concern in the Wareham, Fall River and New Bedford areas.

Figure 50  
Total Rate of Opioid-Related Hospital Discharges, Southeastern Massachusetts



Source: HPC Analysis- CHIA Hospital Inpatient Discharge Database and Emergency Department Database, 2014.

<sup>37</sup> Hospital discharges include both ED discharges and inpatient discharges.



Opioid-Related Hospital Utilization including Emergency Department (ED) and Inpatient Discharges

Opioid-related hospital discharges in 2014 indicate the volume of discharges for towns of the Southcoast (see Table 7).<sup>38</sup> New Bedford and Fall River rank fourth and fifth, respectively, in Massachusetts for the largest amount of opioid-related hospital discharges, behind Boston, Worcester and Brockton.

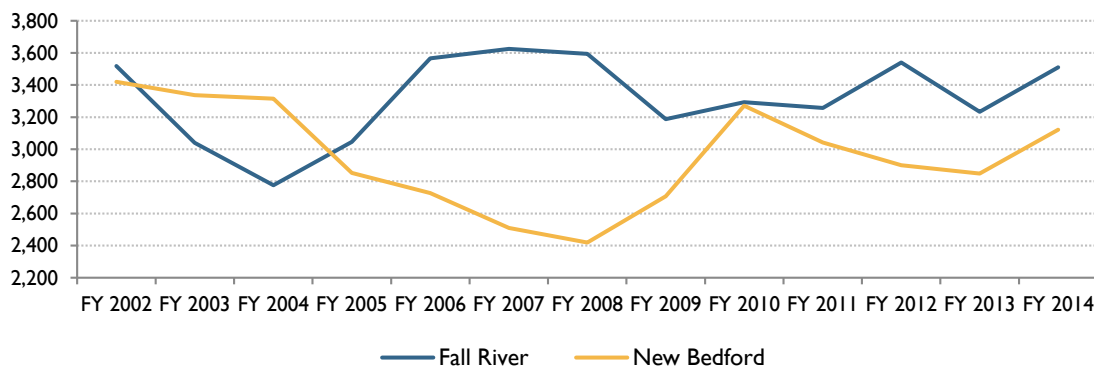
Table 7  
Opioid-related Hospital Discharges

Town	2014
Acushnet	62
Dartmouth	153
Fairhaven	106
Fall River	1,237
Freetown	23
Marion	<11
Mattapoisett	30
New Bedford	1,297
Rochester	14
Somerset	103
Swansea	82
Wareham	98
Westport	64

Source: Opioid Use Report, Mass CHIA, 2014.

Admissions for substance abuse treatment had been declining since 2011 for New Bedford, but started increasing in 2013 (see Figure 51). Admissions for substance abuse in Fall River fluctuated from 2011 to 2013, and began increasing in 2013.

Figure 51  
Number of Admissions for Substance Abuse Treatment, FY 2002–FY 2014

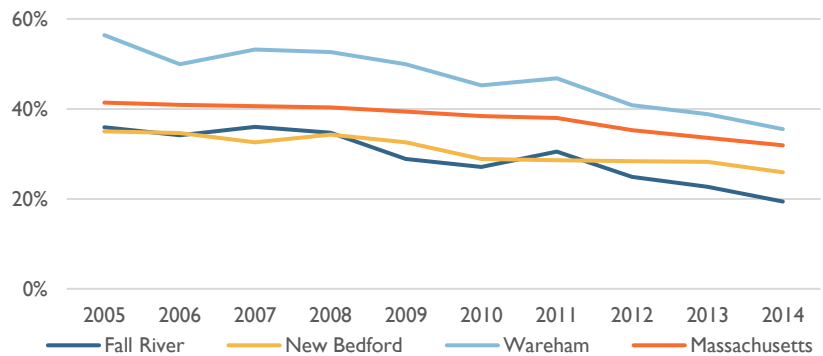


Source: Massachusetts Bureau of Substance Abuse Services.

<sup>38</sup> Note that discharges in this table indicate both discharges from the emergency department and discharges from an inpatient hospital stay.

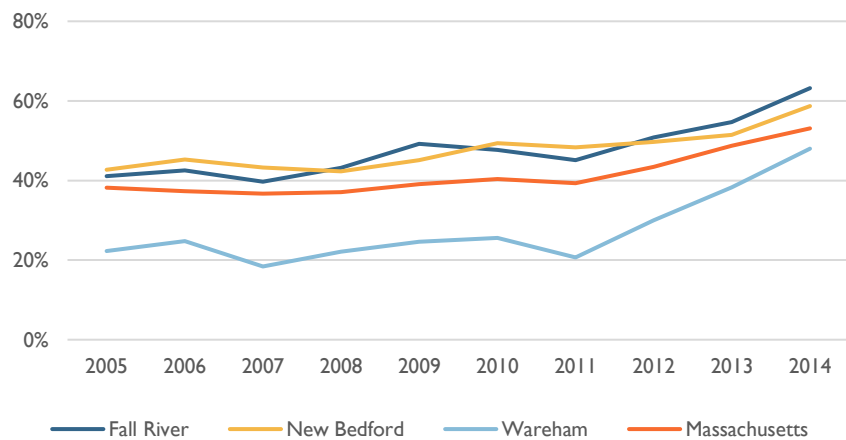
Another important change occurring in the Southcoast, as well as Massachusetts, is a greater prevalence of heroin as the leading substance abused for patients admitted for care. Trend data show a marked decrease in the percentage of primary use for alcohol (see Figure 52) and a marked increase in the percentage of primary use for heroin, since 2011 (see Figure 53).

Figure 52  
Alcohol as Primary Drug upon Admission



Source: Massachusetts Bureau of Substance Abuse Services.

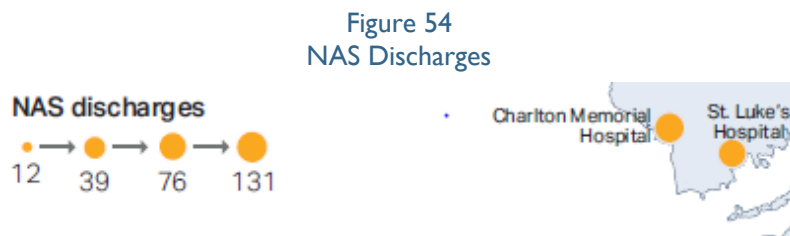
Figure 53  
Heroin as Primary Drug upon Admission



Source: Massachusetts Bureau of Substance Abuse Services.

Neonatal Abstinence Syndrome (NAS)

According to the Opioid Use Report, neonatal abstinence syndrome (NAS) is a clinical syndrome marked by low birth weight, respiratory distress, feeding difficulty, tremors, increased irritability and crying, diarrhea, and occasional seizures.<sup>39</sup> NAS is three times more prevalent in Massachusetts than nationally.<sup>40</sup> The Southcoast is disproportionately impacted by NAS: Charlton Memorial Hospital in Fall River and St. Luke's Hospital in New Bedford have two of the largest populations of patients with NAS in the state, registering in the range of 131 discharges at Charlton and 76 at St. Luke's (see Figure 54).



Southcoast Health co-facilitates an Interagency Task Force regarding neonatal abstinence syndrome that was formed to identify the needs of pregnant women with substance use disorder and to help bridge the gaps in resources and treatment available to these women and their families. To better understand how best to serve the mothers of substance exposed newborns (SEN) with improvements to their care, the task force conducted several focus groups with professionals from the Department of Children and Family Services (DCF) in New Bedford and Fall River, South Bay, People Inc., and SSTAR Lifeline. Questions were asked of mothers and care providers about medication assisted treatments, concerns with the care delivery process (at physician offices, home, support groups, outpatient and inpatient), how to improve the process, training, and other resources required for the patient population, and various methods for recruiting and retaining mothers into treatment programs. Numerous needs were identified for this patient population including:

- Need for Substance Use Disorder (SUD) treatment support groups for mothers, both pre- and post-delivery (care must be taken to construct the support groups in a manner that encourages attendance and retention),
- Attention and care for older children of mothers receiving SUD treatment,
- Increased wraparound services between the components of care delivery (pre-birth, prenatal, inpatient, post-delivery outpatient, at home, treatment clinic, and with organizations such as DCF and visiting nursing organizations), and
- Increased education and training with regard to SEN for providers, mothers, DCF, and other coordinating organizations.

<sup>39</sup> See <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/publications/opioid-use-disorder-report.pdf/>.

<sup>40</sup> See <http://www.mass.gov/anf/budget-taxes-and-procurement/oversight-agencies/health-policy-commission/publications/opioid-use-disorder-report.pdf/>.

#### 4.4 HEALTH OUTCOMES

Methods to assess health status and health outcomes include comparing hospitalization rates and incidence rates over time and to view the hospitalization and incidence rates by disease. Furthermore, examining self-assessments of health are valuable measures to monitor when assessing population health.

Looking at five-year hospitalization trends in the Southcoast versus Massachusetts, Figure 55 reveals that hospitalization rates per 100,000 people began to rise from 2008 through 2010, but declined from 2010 through 2012. Generally, the Southcoast has a much higher hospitalization rate than the statewide average, with Wareham having the highest rate (12,764 in Greater Fall River, 13,003 in Greater New Bedford, 14,555 in Wareham versus 11,058 in Massachusetts).

Figure 55  
Trend in Age-Adjusted Hospitalization Rate per 100,000: All Causes

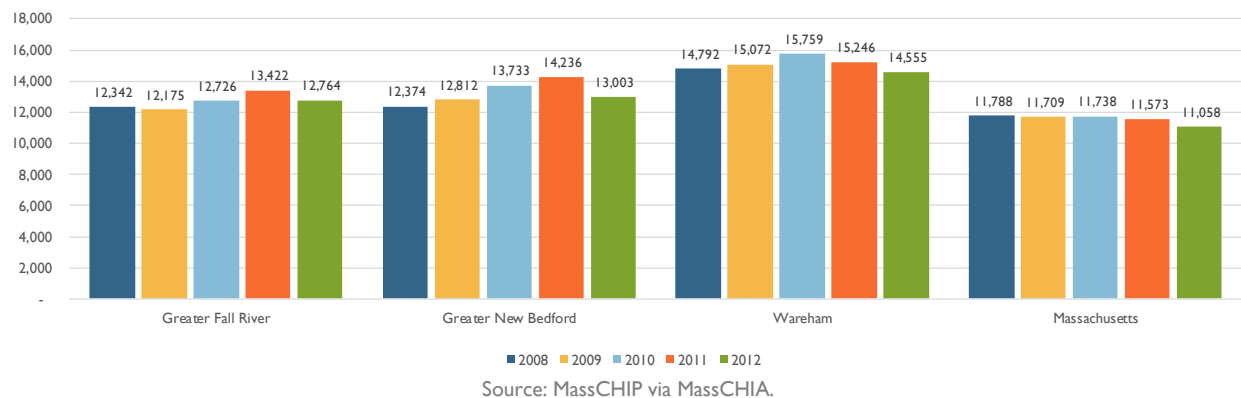


Table 8 shows the five most frequent inpatient discharges (diagnostic related groups or DRGs) at the Southcoast Hospital System as of FY 2014. Births make up the majority of DRG discharges, with infections, COPD and pneumonia being the next most frequent DRGs.

Table 8  
Most Frequent Inpatient Discharges by DRG, 2014

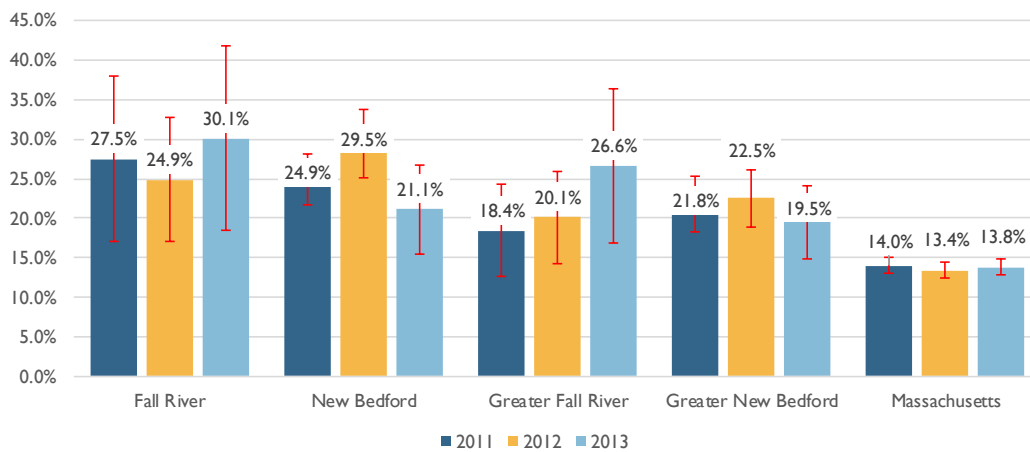
Rank	DRG Name	Discharges
1	Normal Neonate Births	5760
2	Septicemia & infections	2437
3	Vaginal deliveries	2230
4	Chronic obstructive pulmonary disease COPD	1691
5	Other pneumonia	1559

Source: FY 2014 Acute Hospital Databook, MassCHIA.

Self-Assessments

In general, Southcoast residents report poorer health status than residents statewide. Figure 56 indicates that as of 2013, a greater percentage of residents in Greater Fall River (26.6%) and Greater New Bedford (19.5%) generally rate themselves with poor or fair health as compared to Massachusetts overall (13.8%).

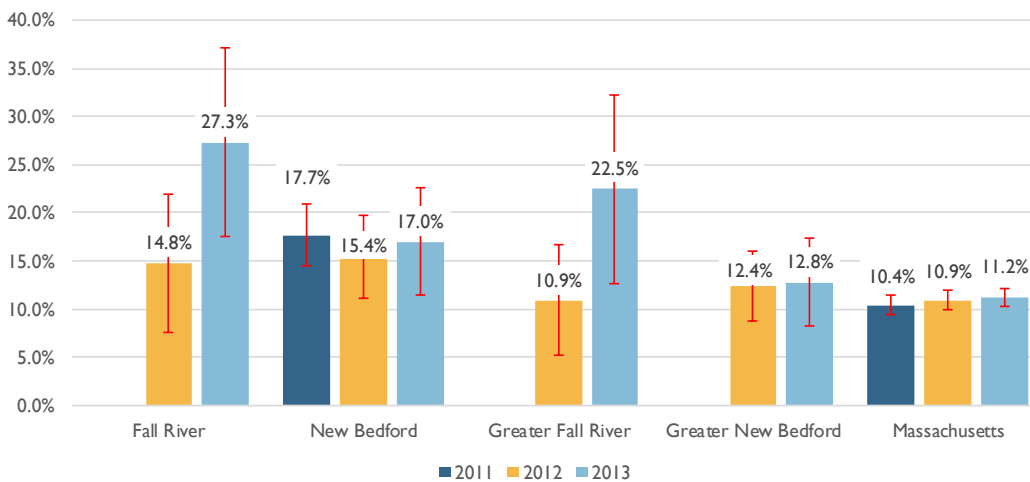
Figure 56  
Proportion of Adults Reporting Poor or Fair Health



Source: BRFSS, MassCHIP.

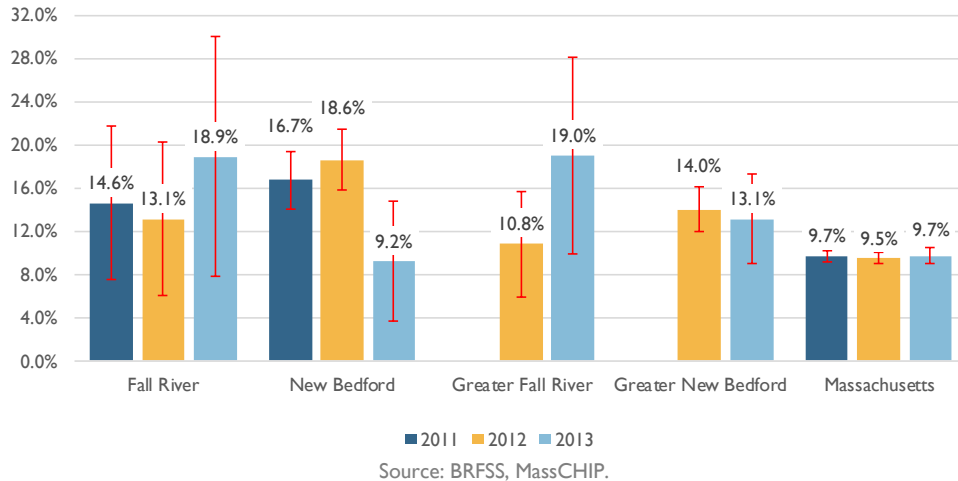
Similarly, a greater percentage of residents of the Southcoast report having greater than 15 days per year with both poor mental (see Figure 57) and physical health (see Figure 58) in comparison to residents statewide, although some of these differences are within the BRFSS survey’s margin of error.

Figure 57  
Proportion of Adults Reporting Days of Poor Mental Health



Source: BRFSS, MassCHIP.

Figure 58  
Proportion of Adults Reporting Poor Physical Health



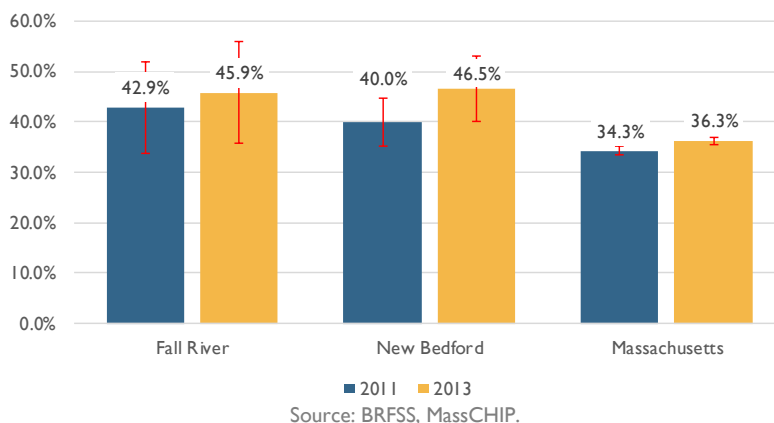
### Cardiovascular Health

Indicators of cardiovascular health in the Southcoast include high blood cholesterol, hypertension, and heart attacks. Behaviors that can mitigate cardiovascular health problems consist of healthy eating, exercise, and weight control. Compliance with medication management and cholesterol screenings can also positively influence care.

#### High Blood cholesterol

Fall River and New Bedford residents have higher rates of lifetime high blood cholesterol diagnoses in comparison to residents statewide, although some of these differences are within the BRFSS survey’s margin of error (see Figure 59).

Figure 59  
Rate of Lifetime High Blood Cholesterol Diagnosis



Hypertension

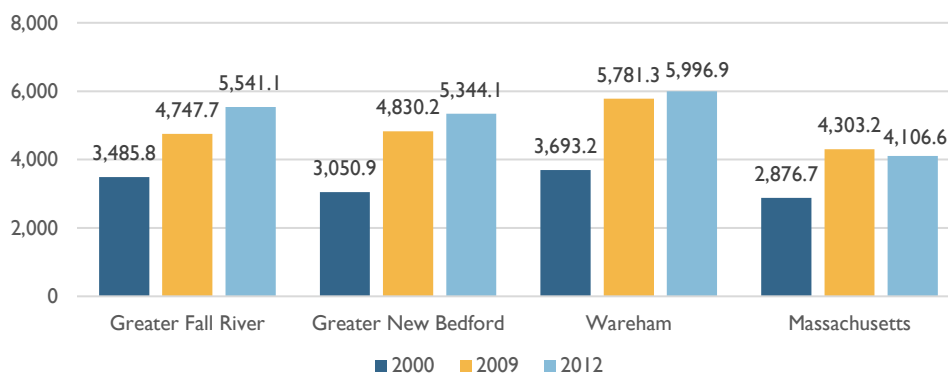
Hypertension, or high blood pressure, is more prevalent in the Southcoast than statewide and it has continued to increase since 2011 (see Table 9).<sup>41</sup> Hospitalization rates have increased in the region from 2000 to 2013 because of increased hypertension diagnoses (see Figure 60).

Table 9  
Share of Population Diagnosed with Hypertension in Lifetime

	2011	2013
<b>Fall River</b>	33.1%	36.4%
<b>New Bedford</b>	37.3%	34.8%
<b>Greater Fall River</b>	33.2%	35.7%
<b>Greater New Bedford</b>	34.9%	36.1%
<b>Massachusetts</b>	29.2%	29.4%

Source: BRFSS, MassCHIP.

Figure 60  
Age-Adjusted Hospitalization Rate (per 100,000)  
Hypertension Related



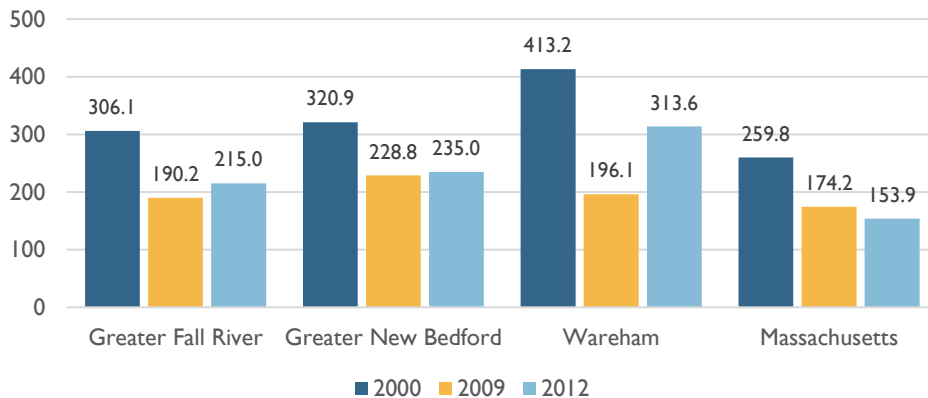
Source: MassCHIP via MassCHIA.

<sup>41</sup> Some of these results are with the BRFSS survey's margin of error, thus conclusions should be made with caution.

Heart Attack

Heart disease management continues to be an area of high need in the Southcoast. Hospitalization rates for heart attacks, or myocardial infarction, declined from 2000 to 2009 but showed an increase from 2009 to 2012 by 13 percent in Greater Fall River and 2.7 percent in Greater New Bedford, along with a significant increase of 59.9 percent in Wareham. Conversely, myocardial infarction hospitalization rates statewide declined by 11.6 percent (see Figure 61).

Figure 61  
Age-Adjusted Hospitalization Rate (per 100,000)  
Myocardial Infarction

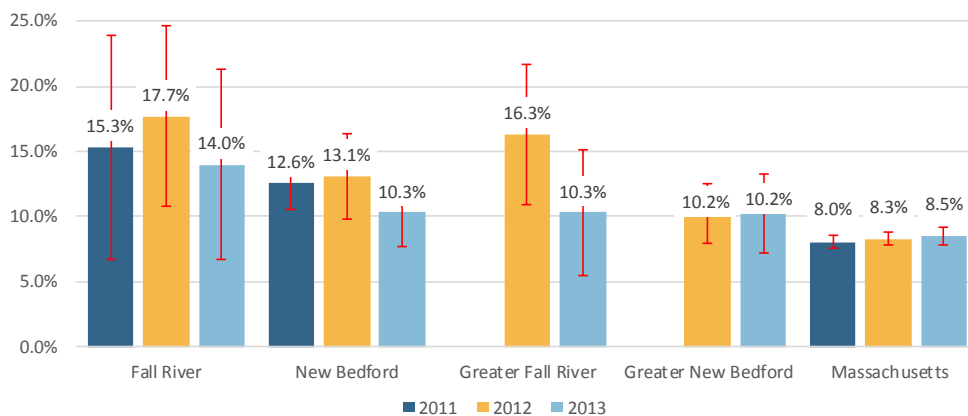


Source: MassCHIP via MassCHIA.

Diabetes

The share of adults that have had or currently have diabetes in the Southcoast is declining in almost all study areas (remaining flat in Greater New Bedford), whereas the trend is slightly increasing statewide (see Figure 62).<sup>42</sup> However, these changes are within the BRFSS survey’s margin of error and conclusions should be made with caution.

Figure 62  
Percent Had or Have Diabetes



Source: BRFSS, MassCHIP.

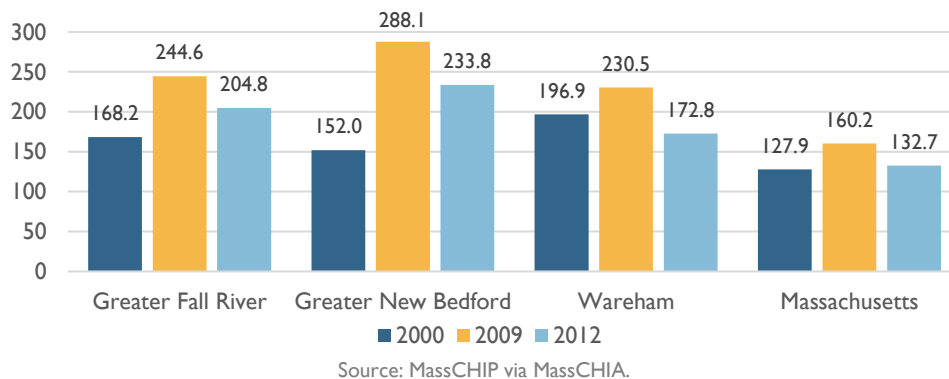
<sup>42</sup> Data not available for all years for all geographies.



## Respiratory Health

Respiratory health is reflected by the incidence of asthma. The incidence of asthma in the Southcoast is 17.8 percent, which is greater than the statewide percentage of 15.9 percent. When broken down by CHNA, 21.6 percent of Greater Fall River residents are diagnosed with asthma in a lifetime, while 15.3 percent of Greater New Bedford residents have been so diagnosed (consistent with the statewide average). Overall, hospitalization rates for asthma have declined from 2009 to 2012 (see Figure 63).

Figure 63  
Age-Adjusted Hospitalization Rate (per 100,000)  
Asthma



## Cancer

Cancer incidence rates for all types of cancer vary by geography. Incidence rates can vary substantially from year to year, especially with data from small sample sizes. Five-year cancer incidence rates have declined since 2008 but have leveled off in 2012 (except in Wareham, where it is slightly increasing). However, Greater Fall River, Greater New Bedford and Wareham all have rates that exceed the statewide average (see Figure 64).

Figure 64  
Five-Year Trend - Cancer Incidence

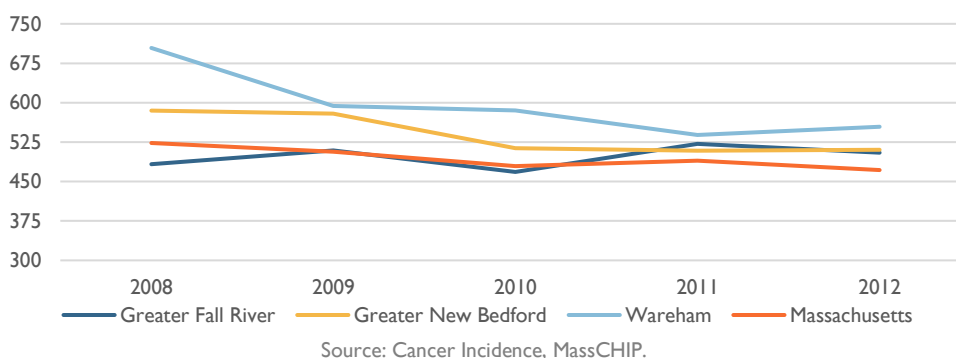


Table 10 shows cancer incidence trends by the six highest incidence cancer types in the region: breast cancer, prostate cancer, lung cancer, colorectal cancer, bladder cancer, and non-invasive breast cancer. The Southcoast generally has higher rates of cancer than state averages in almost all categories of cancer (highlighted in red).

Table 10  
Incidence Rates Above the Massachusetts Average

		Greater Fall River	Greater New Bedford	Wareham	Massachusetts
Breast Cancer - Invasive	2008	87.2	129.6	135.9	49.2
	2009	103.4	134.6	102.6	47.9
	2010	113.8	127.8	149.3	45.0
	2011	124.9	118.4	140.6	41.6
	2012	132.5	130.7	85.5	42.6
Prostate Cancer	2008	139.1	226.6	183.2	161.4
	2009	163.5	207.3	152.4	146.9
	2010	158.9	154.2	103.6	140.6
	2011	140.5	164.8	137.3	138.3
	2012	100.4	108.6	123.9	106.9
Lung Cancer	2008	79.6	76.2	103.2	72.5
	2009	82.4	91.6	128.0	70.6
	2010	60.4	80.2	120.5	66.7
	2011	80.6	77.2	102.3	66.3
	2012	79.9	82.3	117.7	64.8
Colorectal Cancer	2008	47.1	48.2	84.8	44.9
	2009	38.4	40.6	44.6	43.0
	2010	38.6	41.4	61.1	39.8
	2011	45.4	34.1	54.2	38.2
	2012	39.5	44.0	35.9	37.2
Bladder Cancer	2008	24.0	28.0	49.6	26.4
	2009	30.9	31.9	42.4	25.2
	2010	24.4	31.9	26.2	23.2
	2011	29.3	31.4	47.7	24.6
	2012	30.5	25.8	NA	24.8
Breast Cancer - Non-invasive	2008	66.8	47.0	30.6	49.2
	2009	48.1	39.0	48.3	47.9
	2010	32.2	31.3	NA	45.0
	2011	39.2	33.3	38.2	41.6
	2012	58.8	29.2	32.3	42.6

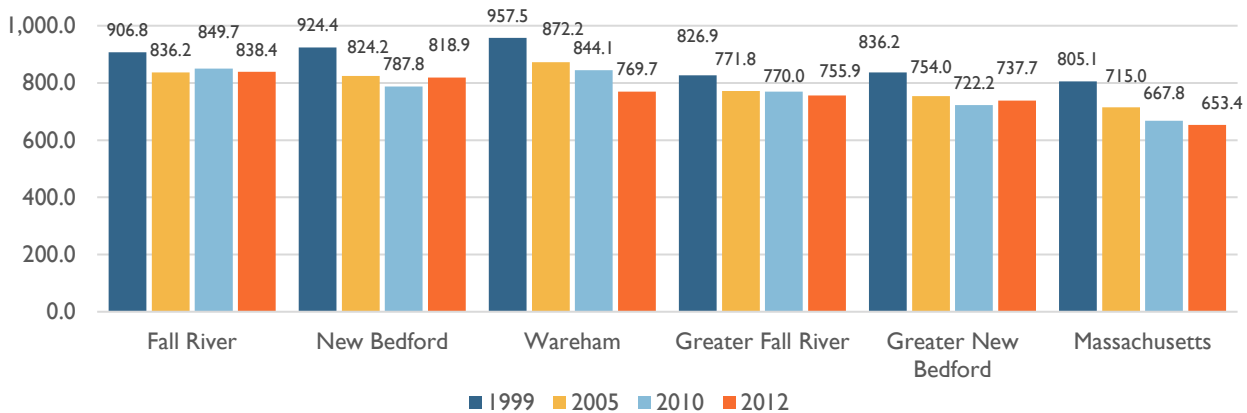
Source: 2008-2012, Cancer Incidence, MassCHIP.

## Mortality

This section displays the mortality rates per 100,000 people for all causes of death. Mortality rates have generally declined in the Southcoast and the state with a little variability year to year.

Figure 65 shows the overall trends in mortality rates in the Southcoast, which are generally declining year-to-year (New Bedford and Greater New Bedford were exceptions in 2012). Note that Southcoast incidence rates are disproportionately higher than the statewide averages.

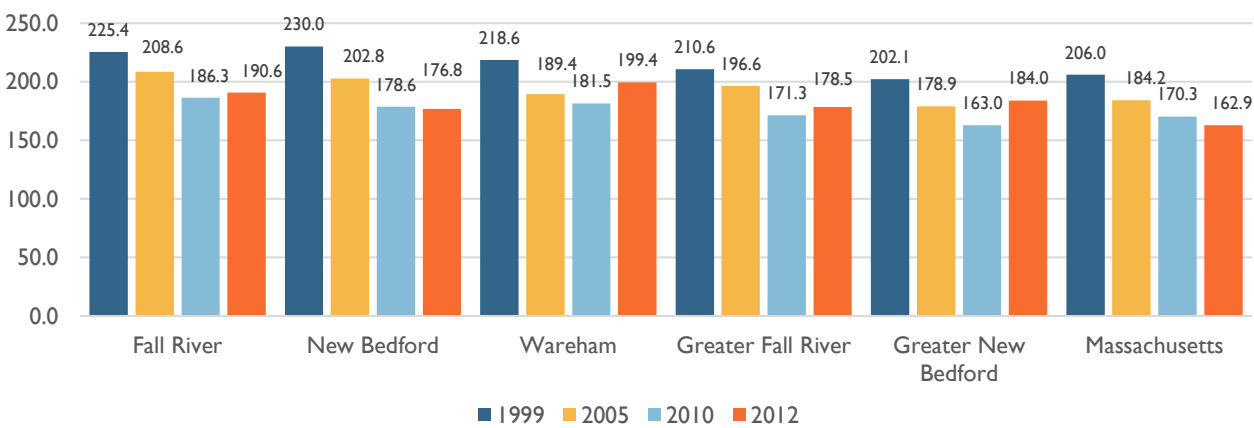
Figure 65  
Trends in Mortality Rates (per 100,000)  
All Causes of Death



Source: Vital Statistics, MassCHIP (age adjusted rates).

Figure 66 shows the number of deaths due to cancer, by geographic location. There are slight increases in Fall River, Greater Fall River, Greater New Bedford, and Wareham from 2010 to 2012. New Bedford and Massachusetts rates continued to decline between 2010 and 2012.

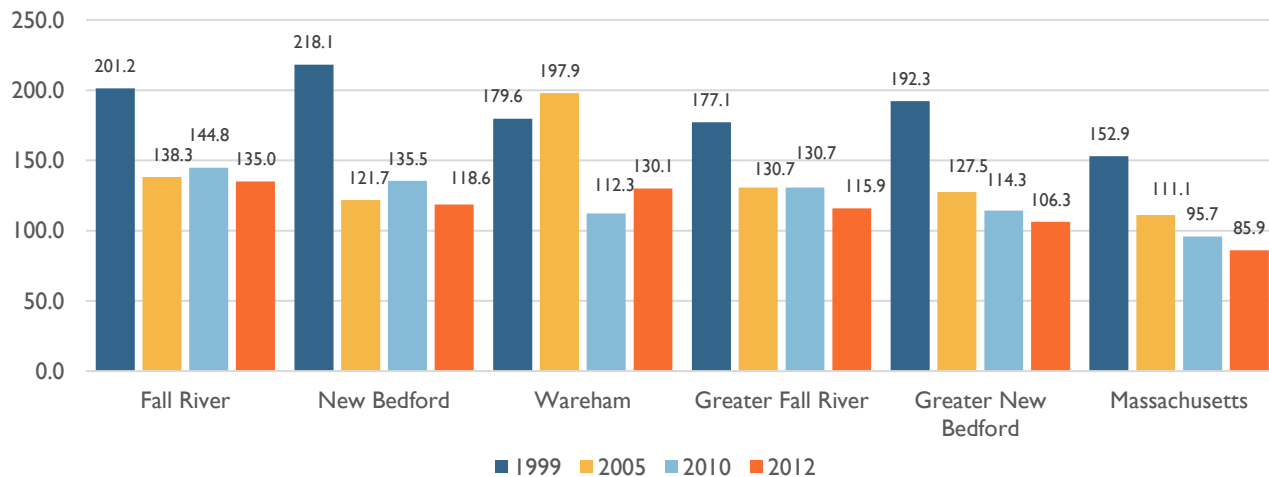
Figure 66  
Trends in Mortality Rates (per 100,000)  
Cancer: All Types



Source: Vital Statistics, MassCHIP (age adjusted rates).

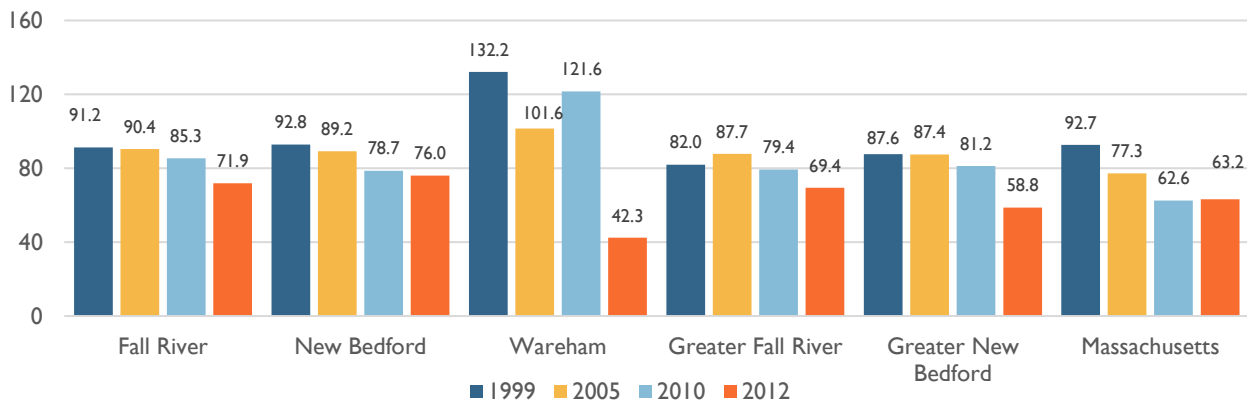
With the exception of Wareham, mortality rates for coronary heart disease have declined in the Southcoast and statewide (see Figure 67). A similar pattern exists for mortality rates for respiratory disease (see Figure 68), excluding Wareham, which had increasing levels of mortality. Recall that Wareham had high rates of lung cancer (see Table 10).

Figure 67  
Trends in Mortality Rates (per 100,000)  
Coronary Heart Disease



Source: Vital Statistics, MassCHIP (age adjusted rates).

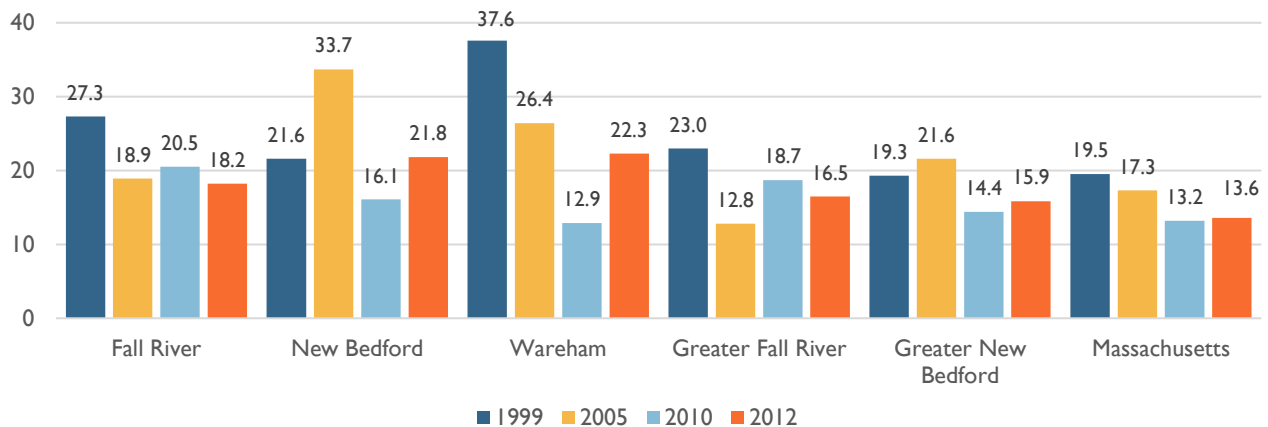
Figure 68  
Trends in Mortality Rates (per 100,000)  
Respiratory Disease



Source: Vital Statistics, MassCHIP (age adjusted rates).

Since 1999, mortality rates due to diabetes have been declining in the Southcoast and Massachusetts, though the trend has leveled off slightly and only some locations appear to be slightly increasing (New Bedford, Greater New Bedford, and Wareham) (see Figure 69).

Figure 69  
Trends in Mortality Rates (per 100,000)  
Diabetes



Source: Vital Statistics, MassCHIP (age adjusted rates).

## 4.5 CHILDREN'S HEALTH

Children's health encompasses the care, environment, behavior, and outcomes of children ranging from prenatal to age 18. Children's health predicts and affects both adult health and educational performance.

### Fetal and Infant Health

Fetal and infant health indicators relate to care, maternal behavior, and outcomes. In both Greater Fall River and Greater New Bedford, levels of care and outcomes are often suboptimal compared to Massachusetts, with some exceptions. Table 11 compares data from 2009 and 2013 in four key indicators: beginning prenatal care during first trimester, adequate prenatal care, gestational diabetes and maternal smoking during pregnancy.

Prenatal care within the Southcoast locales, both beginning within the first trimester and maintaining adequate prenatal care throughout pregnancy, are close to statewide averages, although levels have dropped in Greater Fall River (by 9.6% prenatal care during first trimester and 1.7% adequate prenatal care) and in Wareham (by 2.9% and 7.2% respectively), by both indicators. Only Greater New Bedford has shown improvement in both prenatal indicators: an increase in the share of mothers beginning care in the first trimester by 5.7 percent and improving the share of mothers with adequate prenatal care by 1.1 percent. The Southcoast, in 2013, exceeded the statewide average in adequate prenatal care in all locales. Among infants receiving some level of prenatal care, 64.2 percent of that care was publicly financed for mothers of Greater Fall River, and 46.5 percent of care was financed for mothers in Greater New Bedford, in comparison to 35.8 percent statewide.<sup>43</sup>

<sup>43</sup> Source: Massachusetts Department of Public Health, MassCHIP, Massachusetts Community Health Information Profiles, for CHNA 25 and 26 (6/4/2013).

The prevalence of gestational diabetes has decreased from 2009 to 2013, especially in Wareham, which dropped from 7.9 percent to 2.8 percent. Greater New Bedford’s prevalence of gestational diabetes has increased from 4.9 percent to 6.7 percent

The percentage of mothers smoking during pregnancy continues to be a significant issue in the Southcoast. The rate of mothers smoking during pregnancy increased in the Greater Fall River and Greater New Bedford areas. While Wareham’s percentage is still the highest, it has declined from 2009 to 2013 by 14.4 percent.

Table 11  
Fetal and Infant Health

	Began Prenatal Care During 1st Trimester		Adequate Prenatal Care		Gestational Diabetes		Mother Smoked During Pregnancy	
	2009	2013	2009	2013	2009	2013	2009	2013
	<b>Greater Fall River</b>	79.9%	72.2%	86.4%	84.9%	7.7%	6.6%	17.0%
<b>Greater New Bedford</b>	76.0%	80.4%	86.8%	87.8%	4.9%	6.7%	13.4%	13.5%
<b>Wareham</b>	79.2%	76.9%	89.4%	82.9%	7.9%	2.8%	22.2%	19.0%
<b>Massachusetts</b>	81.1%	78.1%	88.6%	72.5%	4.6%	5.3%	6.8%	6.6%

Source: MassCHIP, Perinatal Report.

Neonatal health outcomes are reflected by premature births and low birthweight. The percentage of premature births has increased in all locales from 2009 to 2013. Low birthweights have increased in Greater Fall River, decreased in Greater New Bedford and Wareham, and remained the same in Massachusetts (see Table 12).

Table 12  
Neonatal Outcomes

	Premature Births		Low Birthweight	
	2009	2013	2009	2013
<b>Greater Fall River</b>	7.6%	8.2%	8.2%	8.5%
<b>Greater New Bedford</b>	9.7%	10.4%	9.0%	8.4%
<b>Wareham</b>	7.4%	8.3%	9.3%	7.4%
<b>Massachusetts</b>	8.7%	8.8%	7.7%	7.7%

Source: MassCHIP, Perinatal Report.

### Lead Exposure

Four-year lead exposure trends show increasing screening practices in Wareham with no cases of elevated blood levels or poisoning. Fewer cases of elevated blood lead levels, moderate risk, immediate risk and poisoning have occurred in Greater Fall River. Greater New Bedford has the highest reported cases of elevated blood levels, risk and poisoning between 2010 and 2013. The lead poisoning cases per 1,000 screened for Greater New Bedford compares unfavorably to Massachusetts as a whole (0.39 for Greater New Bedford and 0.21 for Massachusetts; computed from data in Table 13).

Table 13  
Lead Exposure Trends, 2010–2013

Geography	Wareham				Greater Fall River				Greater New Bedford				Massachusetts			
Year	2010	2011	2012	2013	2010	2011	2012	2013	2010	2011	2012	2013	2010	2011	2012	2013
Cases of Elevated Blood Lead Levels	0	1	2	0	7	8	3	1	19	12	15	10	302	220	232	193
At Moderate Risk Cases	0	0	0	0	1	3	1	0	9	9	5	6	153	112	123	108
At Immediate Risk Cases	0	0	1	0	2	4	0	0	7	1	6	1	72	60	45	42
Poisoned Cases	0	1	1	0	4	1	2	1	3	2	4	3	77	48	64	43
Screened This Year	506	450	544	597	5,631	5,740	5,609	5,372	7,801	7,858	7,916	7,782	223,500	222,080	214,892	212,022

Source: Childhood Lead Screening, MassCHIP.

### Abuse and Neglect

The number of children who were reportedly abused or neglected increased by 2.8 percent from 2009 to 2011 in Greater Fall River, while the number in New Bedford declined by 3.3 percent and the number in Wareham increased by 7.2 percent. This compares to a 1.3 percent increase statewide over this period (see Table 14).

Table 14  
Reports of Abuse and Neglect

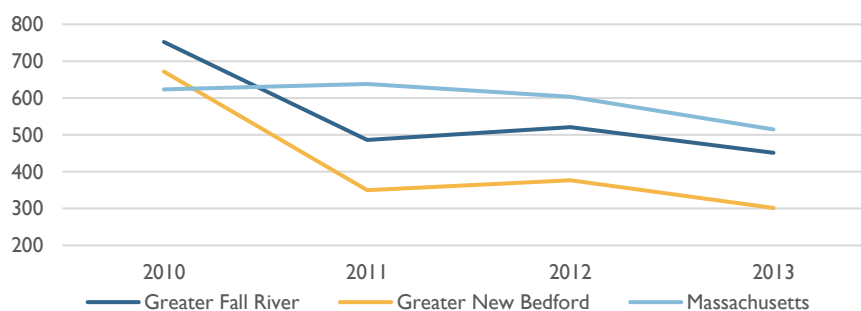
Community	2009	2011	Percent Change
Greater Fall River	2,179	2,239	2.8%
Greater New Bedford	3,777	3,654	-3.3%
Wareham	345	370	7.2%
Massachusetts	77,415	78,394	1.3%

Source: MassCHIP, via Department of Children and Families.

### Substance Abuse

Figure 70 shows the four-year trend of teen substance abuse admissions between 2010 and 2013. Greater Fall River, Greater New Bedford and Massachusetts show overall decline. However, while Massachusetts rates display overall decline, statewide rate of admissions exceeds both Greater Fall River and Greater New Bedford's rates.

Figure 70  
Rate of Substance Abuse Admissions: Teens Age 15–19



Source: MassCHIP, via Massachusetts Bureau of Substance Abuse Services.

## Youth Risk Behavior

The CDC-administered Youth Risk Behavior Surveillance System (YRBSS) monitors priority health risk behaviors that contribute to health issues and social problems among youth in the United States. The YRBSS is designed to<sup>44</sup>:

- Determine the prevalence of health behaviors.
- Assess whether health behaviors increase, decrease, or stay the same over time.
- Examine the co-occurrence of health behaviors.
- Provide comparable national, state, territorial, tribal, and local data.
- Provide comparable data among subpopulations of youth.
- Monitor progress toward achieving the Healthy People objectives and other program indicators.

The CDC makes standardized surveys available to states and local districts, which administer them at the middle and high school levels. Results are intended to assist with the generation of strategies and health education curricular programs to better educate youth, parents, and educators with regard to risky youth behaviors and consequences.

Surveying for youth risk behaviors for urban and suburban school districts in the Southcoast was conducted in 2015.<sup>45</sup> Youth risk behaviors appear to be prevalent in both urban and suburban areas of the Southcoast region. Similar issues of concern resonate for teens regardless of urban or suburban location as highlighted below.

- Mental Health: Survey results found that 30.0 percent of selected urban and suburban high school respondents reported feeling sad or hopeless for at least two weeks in the past 12 months. In addition, 10.3 percent of urban high school respondents indicated that they had seriously considered suicide in the past 12 months while 15.0 percent of suburban high school respondents indicated such.
- Substance Use: Survey results found that 46.0 percent of urban high school responders had had at least one drink of alcohol, whereas, of the suburban high school responders, 65.6 percent reported having at least one drink. Interestingly, the most common age for first-time alcohol consumption in the urban setting was 15 to 16 years old, while it was reported as 13 to 14 years old in the suburban setting. Texting or emailing while driving was reported by 41.0 percent in suburban areas and 17.0 percent in urban areas. Seventy-one percent of urban high school respondents indicated that they did not drive, which might account for some of the difference in rates. One in 10 suburban responders indicated being current smokers while 30.3 percent of urban high school responders reported having tried cigarette smoking.
- High-Risk Sexual Behaviors: In the urban setting, of those reporting being sexually active, 54.2 percent reported using a condom the last time that they had sexual intercourse, while 76.5 percent in the suburban setting reported condom usage.
- Violent Behaviors: 17.0 percent of suburban responders indicated being bullied on school property in the past 12 months, while 24.5 percent of urban responders indicated being bullied.
- Health-Related Behaviors: 45.0 percent of suburban responders reported having at least two fruits per day compared with 30.7 percent of urban responders. Eleven percent of suburban responders reported having at least one soda per day compared to 45.2 percent of urban responders. Approximately 22.0 percent of urban responders reported getting at least eight hours of sleep per night, compared with 21.0 percent of suburban respondents.

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<sup>44</sup> <https://www.cdc.gov/healthyyouth/data/yrbs/overview.htm>.

<sup>45</sup> Results reported are from a sample of Southcoast area high schools' Massachusetts Youth Risk Behavior survey information as provided by Southcoast Health System.



There are a number of programs, coalitions, and initiatives in the Southcoast to aid in addressing youth risk behaviors. These include the Reproductive Health Education and Pregnancy Prevention program (RAPPP), SouthCoast Youth Alliance, Healthy Families New Bedford, Regional Suicide Prevention Coalition, New Bedford Trauma Response Team, the Peace Summit, and the PRIDE project (Personal Responsibility through Intentional Development and Engagement).

**PRIDE Project:** In 2014, the RAPPP program was awarded a federal grant to develop services for minority, young men living in the New Bedford area. The PRIDE Project targets at-risk, minority males to provide pregnancy prevention education, career preparation training and mentoring services, including education and college preparation support. PRIDE is designed to provide evidence-based programming to address unhealthy behaviors, and provide opportunities to develop adult preparation skills and gain experiences that contribute to positive lifestyles and enhance the capacity to make healthier life choices. This project also addresses academic success and post-secondary education.

Selected results from the PRIDE Asset Checklist Survey results show improvements in those enrolled members (see Table 15). Note that results show the share of students who responded to questions in the category of “extremely or almost always.” Results show improvement in participants reporting community service hours, feeling safe, the importance of reducing certain risky behaviors, and being optimistic about the future.

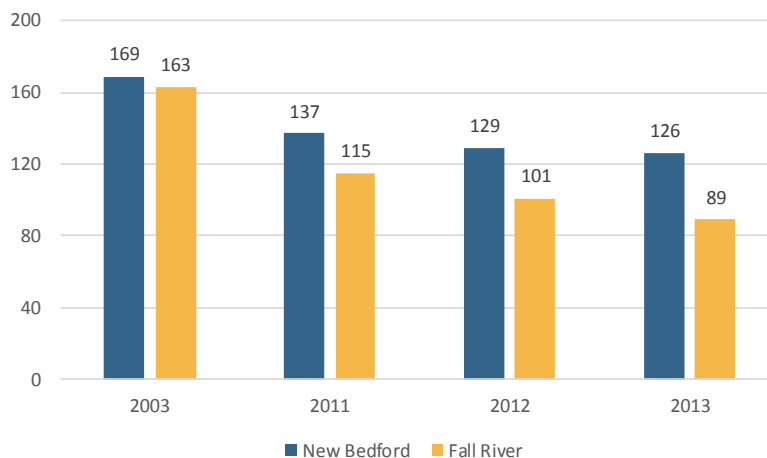
Table 15  
Selected Survey Results from PRIDE Asset Checklist

Asset #	Question	2015	2016	Difference	% Change
9	I serve in the community one hour or more hours each week	14%	37%	23%	164.3%
10	I feel safe at home, school, and in the neighborhood	50%	75%	25%	50.0%
31	I believe it is important not to be sexually active or to use alcohol or other drugs	46%	75%	29%	63.0%
40	I am optimistic about my future	57%	75%	18%	31.6%

Source: Southcoast Health System, PRIDE Project, Asset Checklist Survey 2015–2016.

Overall, teen births in New Bedford and Fall River have dropped since 2003 (see Figure 71).

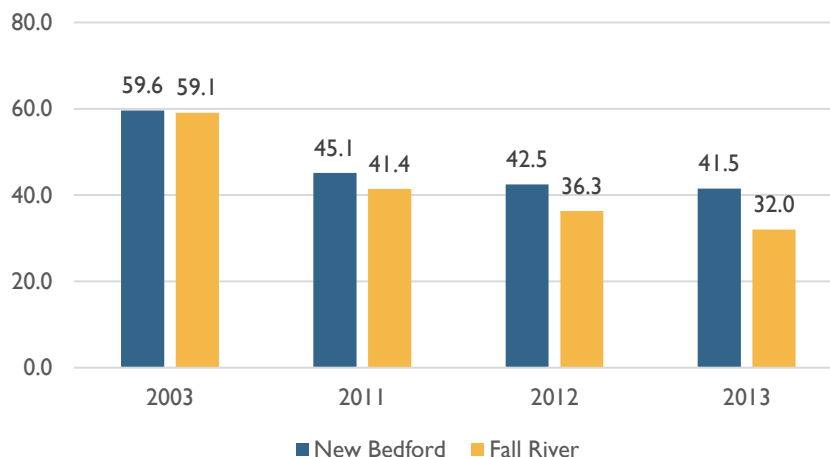
Figure 71  
Number of Teen Births



Source: Southcoast Health System, via Massachusetts Department of Public Health.

Similarly, the trend in teen birth rates for New Bedford and Fall River demonstrates a declining rate (see Figure 72). New Bedford and Fall River had per 1,000 rates of 59.6 and 59.1, respectively in 2003; and 41.5 and 32.0 in 2013, respectively.

Figure 72  
Trend in Teen Birth Rate per 1,000 Females (age 15–19)



Source: Southcoast Health System, via Massachusetts Department of Public Health.

However, while the teen birth rates are declining, New Bedford and Fall River remain among the 10 communities in Massachusetts with the highest teen birth rates. Among the 25 Massachusetts cities or towns with the greatest number of teen births in 2013, New Bedford ranked 5<sup>th</sup> highest and Fall River ranked 8<sup>th</sup> highest in teen birth rate per 1,000 females aged 15 to 19.<sup>46</sup>

<sup>46</sup> Birth rates were calculated using the Massachusetts Department of Public Health Race Allocated Census 2010 Estimates file (MRACE 2010), which is the most up-to-date information available on the number of persons by age, race, and sex at the sub

## Healthy Weight

School districts in Massachusetts track and report the Body Mass Index of their students to determine the degree to which students are normal weight, overweight, or obese. Data from the Southcoast area school districts from the 2013-2014 school year are shown below in Table 16.<sup>47</sup> Both being overweight and obesity have a greater prevalence in the Southcoast region, with Fall River and New Bedford having the highest combined rates (see Table 16). The Massachusetts Department of Public Health’s Mass in Motion (MiM) was initiated in 2009, with its partners, to combat high BMIs and to increase physical activity. This multi-faceted program concentrates on promoting conditions in residents’ communities, workplaces and schools that make healthy choices accessible. Grants are provided to support local innovation, wellness programs and other toolkits and materials.<sup>48</sup>

Table 16  
Selected Results from Public School District BMI Screenings, 2014<sup>49</sup>

District	Students Screened	Males			Females			Combined		
		Overweight	Obese	Overweight or Obese	Overweight	Obese	Overweight or Obese	Overweight	Obese	Overweight or Obese
Acushnet	112	N/A	N/A	27.8	24.1	20.7	44.8	18.8	17.9	36.6
Dartmouth	614	15.6	19.3	34.9	23.0	10.2	33.2	19.4	14.7	34.0
Fairhaven	605	21.4	22.9	44.3	20.1	14.7	34.9	20.8	19.2	40.0
Fall River	3,049	20.8	21.0	41.7	19.8	19.1	38.9	20.3	20.0	40.3
Freetown-Lakeville	858	15.3	9.7	24.9	17.9	11.5	29.4	16.6	10.6	27.3
New Bedford	3,481	20.2	20.2	40.4	21.1	20.3	41.4	20.6	20.2	40.9
Old Rochester	837	6.2	12.8	29.0	12.7	9.6	22.4	14.5	11.2	25.7
Somerset-Berkley	979	15.9	16.9	32.8	14.5	13.8	28.3	15.2	15.4	30.6
Swansea	652	17.7	16.2	33.8	19.5	21.1	40.6	18.6	18.6	37.1
Wareham	744	13.7	21.3	35.0	22.6	22.3	44.9	17.9	21.8	39.7
Westport	469	14.0	21.2	35.2	14.1	12.2	26.3	14.1	17.3	31.3
Massachusetts	233,240	15.9	16.7	32.6	16.1	13.9	30.0	16.0	15.3	31.3

Source: Massachusetts Department of Public Health.

## Mortality

Mortality statistics for people less than 20 years old are shown in Table 17 below. Generally, the trend since 1999 is declining.

Table 17  
Mortality Statistics for Population Under 20 Years of Age

	South Coast	Greater Fall River	Greater New Bedford
1999	51	30	21
2005	44	17	27
2010	24	11	13
2011	31	9	22
2012	30	11	19

Source: Vital Statistics, MassCHIP.

state level. Please note: if the population increased from 2010–2013, the rates may overestimate the actual rate. If the population declined from 2010–2013, the rates may underestimate the actual rate. Source: Southcoast Health System.

<sup>47</sup> “Results from the Body Mass Index Screening in Massachusetts Public School Districts, 2014” August 2015.

<sup>48</sup> “Mass in Motion Communities Show Significant Decreases in Childhood Obesity Rates”, <http://www.mass.gov/eohhs/docs/dph/mass-in-motion/bmi-success-story.pdf>.

<sup>49</sup> Data for Acushnet is suppressed for confidentiality.

## 4.6 HEALTH DISPARITIES

Health disparities refer to differences in health behaviors, access, and outcomes among population subgroups, racial and ethnic minorities, low-income households, and lower levels of educational attainment.

### Racial and Ethnic Health Disparities

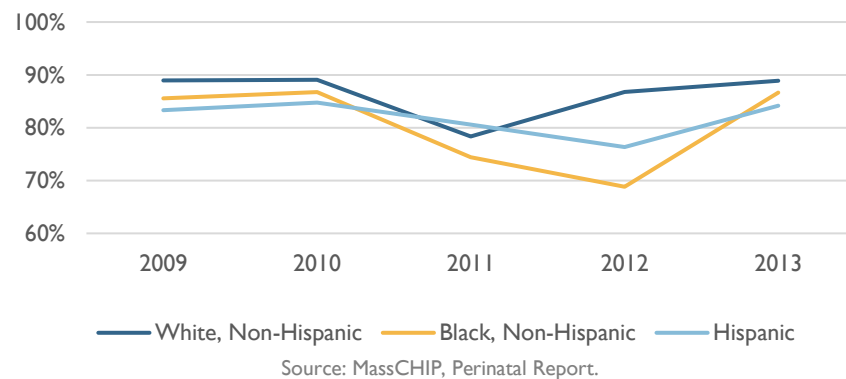
#### *Fetal and Infant Health Disparities*

Fetal and infant health indicators include percentages of women beginning prenatal care during the first trimester, adequacy of prenatal care, low birthweight, and teen births (women under 20 years of age). Examination of these statistics by race indicate some disparity between races.

#### *Prenatal Data*

Five-year trends of the percentage of pregnant women receiving adequate prenatal care varies by race and by sub-region, with more variation and disparity in the Greater New Bedford CHNA than in the Greater Fall River CHNA (shown in Figure 73 and Figure 74).

**Figure 73**  
Greater Fall River – Five-Year Trend of Adequacy of Prenatal Care by Race



**Figure 74**  
Greater New Bedford – Five-Year Trend of Adequacy of Prenatal Care by Race

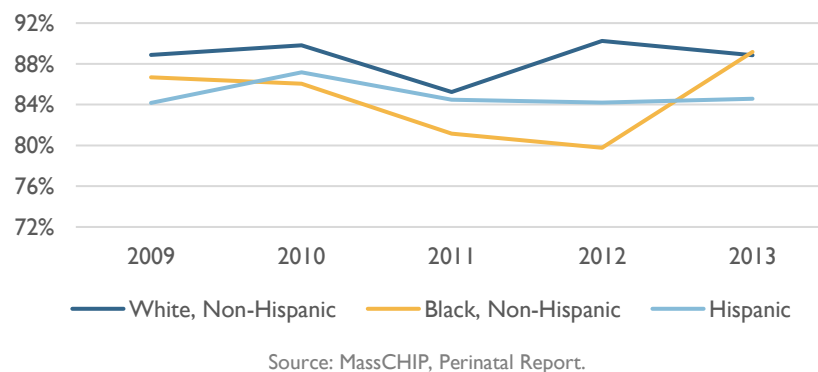
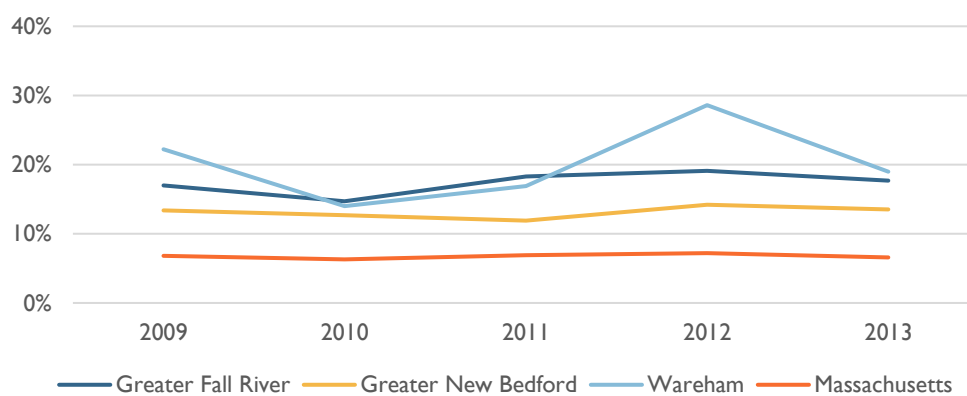


Figure 75 shows the share of women smoking while pregnant in Wareham, Greater Fall River, Greater New Bedford and Massachusetts. All three Southcoast sub-regions have higher rates of prenatal smoking than Massachusetts as a whole.

Figure 75  
Percent of Cigarette Smoking by Mothers during Pregnancy



Source: MassCHIP, Perinatal Report.

Table 18 compares the percentage of women who began prenatal care during the first trimester of pregnancy between 2009 and 2013 by race/ethnicity and locale. Rates have typically declined in all race categories except the Hispanic population in Greater New Bedford. Blacks and Hispanics have significantly lower rates of beginning prenatal care during the first trimester than whites.

Table 18  
Began Prenatal Care during First Trimester, 2009 versus 2013

	White		Black		Hispanic	
	2009	2013	2009	2013	2009	2013
<b>Greater Fall River</b>	83.0%	75.7%	66.7%	57.5%	76.3%	59.5%
<b>Greater New Bedford</b>	81.5%	82.7%	66.5%	78.3%	63.5%	74.3%
<b>Massachusetts</b>	85.9%	82.3%	72.3%	65.8%	75.3%	71.5%

Source: MassCHIP, Perinatal Report.

Birth Data

When comparing 2009 to 2013 data on teen births (percent of teen births to total births) for those individuals less than 20 years old (see Table 19), the share of teen births has experienced an overall decline (the only exception being the share of Black teen births in Greater Fall River increasing slightly from 9.3% to 9.6%). Moreover, for the Hispanic population, the gap between Massachusetts and Greater Fall River has slightly narrowed (3.5% difference in 2009 versus 2.9% difference in 2013) while the gap between Massachusetts and Greater New Bedford has slightly expanded (1.4% difference in 2009 versus 4.5% difference in 2013).

Table 19  
Teen Birth Rates, 2009 versus 2013

	White		Black		Hispanic	
	2009	2013	2009	2013	2009	2013
<b>Greater Fall River</b>	8.2%	5.9%	9.3%	9.6%	19.0%	13.3%
<b>Greater New Bedford</b>	8.5%	5.0%	13.7%	12.1%	16.9%	14.9%
<b>Massachusetts</b>	4.0%	2.2%	8.7%	5.2%	15.5%	10.4%

Source: MassCHIP, Perinatal Report.

In 2013, teen births were significantly higher in Black, non-Hispanic and Hispanic populations than those in White populations, (see Table 20). In New Bedford and Fall River, teen birth rates of Black females were 70 and 45.2, respectively. In contrast, teen birth rates of Hispanic females in New Bedford and Fall River were 79.2 and 65.1, respectively.

Table 20  
Teen Birth Rates by Race, 2013

City	Teen Births			White non-Hispanic			Black non-Hispanic			Hispanic		
	N	Rate	Percent	N	Rate	Percent	N	Rate	Percent	N	Rate	Percent
<b>New Bedford</b>	126	41.5	100.0%	47	23.1	37.3%	17	70.0	13.5%	57	79.2	45.2%
<b>Fall River</b>	89	32.0	100.0%	60	27.3	67.4%	7	45.2	7.9%	20	65.1	22.5%

Source: Southcoast Health System, via Massachusetts Department of Public Health.

Table 21 compares percentage of low birthweight newborns for years 2009 and 2013 for the White, Black and Hispanic races/ethnicities. Southcoast rates for Whites has generally remained stable and is close to Massachusetts' rates (one exception, Greater New Bedford, had an increase in 2013 as compared to 2009, from 7.5% to 8.6%).

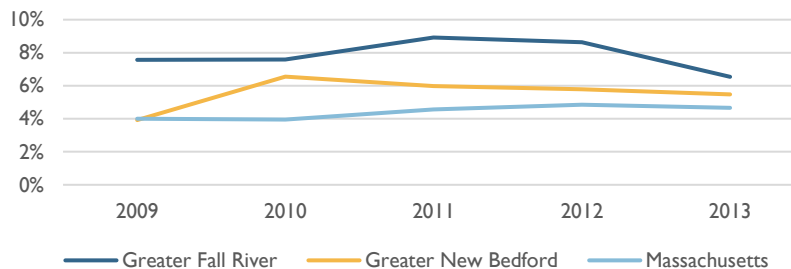
Table 21  
Low Birthweight, 2009 versus 2013

	White		Black		Hispanic	
	2009	2013	2009	2013	2009	2013
<b>Greater Fall River</b>	7.7%	7.3%	13.3%	8.2%	9.5%	12.1%
<b>Greater New Bedford</b>	7.5%	8.6%	11.2%	13.4%	13.6%	5.4%
<b>Massachusetts</b>	7.2%	7.0%	10.8%	10.8%	8.6%	8.2%

Source: Birth Data Set, Vital Statistics, MassCHIP.

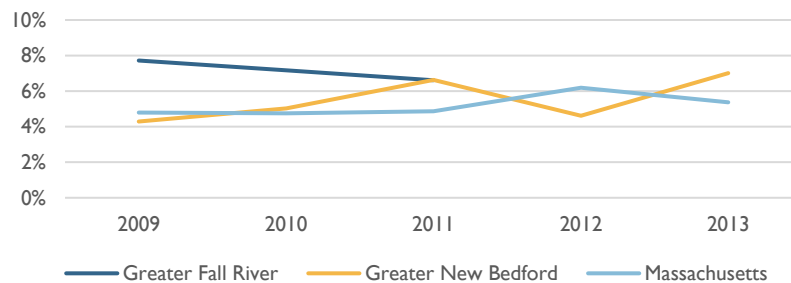
Gestational diabetes at the time of birth varies by race as shown in Figure 76, Figure 77, and Figure 78. The prevalence of White women with gestational diabetes is generally declining; however, the rate for White women in Greater Fall River is significantly higher than for Greater New Bedford and Massachusetts. For Black women, there is incomplete information for Greater Fall River, but there was a decline between 2009 and 2011. In Greater New Bedford and Massachusetts, the percentage of Black women with gestational diabetes showed opposite effects between the years 2012 and 2013. Greater New Bedford had an increase in percentage while Massachusetts had a decrease in percentage. The share of women with gestational diabetes of Hispanic ethnicities in Greater New Bedford shows signs of increase between 2012 and 2013. Hispanic women display signs of decrease in gestational diabetes in Greater Fall River and Massachusetts between the years 2012 and 2013.

Figure 76  
Percent of Births with Gestational Diabetes: White



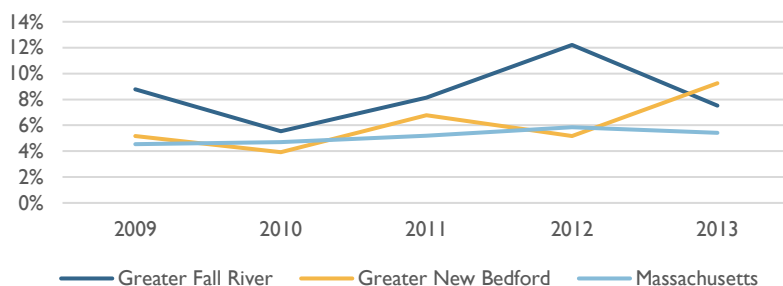
Source: Birth Data Set, Vital Statistics, MassCHIP.

Figure 77  
Percent of Births with Gestational Diabetes: Black



Source: Birth Data Set, Vital Statistics, MassCHIP.

Figure 78  
Percent of Births with Gestational Diabetes: Hispanic



Source: Birth Data Set, Vital Statistics MassCHIP.

Clinical Care

Clinical care indicators that reflect health disparities in the region include cost as a barrier to care and participation in cancer screenings. In the Southcoast, the Hispanic population is particularly underserved in this area, experiencing the highest percentage of people who cannot see a doctor due to cost (Table 22).<sup>50</sup>

Table 22  
Clinical Care by Race

	Cannot See a Doctor Due to Cost			Colorectal Cancer Screening			Mammogram Within Last Two Years			Pap Smear Within Last Three Years		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Greater Fall River	7.4%	NA	21.3%	65.5%	NA	60.7%	87.1%	NA	79.9%	81.8%	NA	70.2%
Greater New Bedford	8.0%	NA	19.4%	66.4%	68.5%	57.8%	87.8%	84.7%	69.9%	80.9%	84.9%	79.0%
Massachusetts	5.4%	10.9%	16.7%	74.6%	71.2%	63.5%	84.3%	87.1%	84.4%	84.1%	87.0%	83.9%

Source: BRFSS 2013, MassCHIP.

Health Behavior

The region’s minority groups are disproportionately affected regarding rates of smoking, maintaining a healthy weight, and being diagnosed with high blood pressure or high cholesterol. Approximately 25 percent of Southcoast Hispanics currently smoke, compared to about 15 percent of Hispanics Massachusetts-wide. Particularly striking, 42.3 percent of Blacks in Greater New Bedford currently smoke, a rate almost double that of Whites in this sub-region and more than double among Blacks in Massachusetts (see Table 23).

While all racial and ethnic groups in the Southcoast struggle with the ability to maintain a healthy weight, the region’s Black and Hispanic populations struggle the most. Obesity affects as many as 42.5 percent of Blacks and 33.5 percent of Hispanics in Greater New Bedford, rates that exceed those of Greater Fall River (30.9% and 32.3%, respectively) and Massachusetts (30.6% and 29.1%, respectively) (see Table 23).<sup>51</sup>

Table 23  
Health Behavior by Race

	Current Smoker			Overweight			Obese		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Greater Fall River	20.3%	20.0%	25.8%	60.3%	72.8%	70.4%	23.5%	30.9%	32.3%
Greater New Bedford	21.8%	42.3%	25.5%	62.0%	73.1%	67.8%	27.7%	42.5%	33.5%
Massachusetts	15.1%	17.5%	14.8%	57.9%	67.1%	65.0%	21.7%	30.6%	29.1%

Source: BRFSS, 2010–2013, MassCHIP.

<sup>50</sup> Some of these results are within the BRFSS survey’s margin of error, thus conclusions should be made with caution.

<sup>51</sup> Some of these results are within the BRFSS survey’s margin of error, thus conclusions should be made with caution.



Heart Related Conditions

Heart-related conditions affect racial and ethnic subgroups differently. Hypertension was diagnosed among fewer Hispanics than Whites in the state and in both sub-regions. On the other hand, the region’s Hispanic population is disproportionately affected by high cholesterol: 49.8 percent in Greater Fall River and 47.1 percent in Greater New Bedford, compared to 37.0 percent statewide and approximately 39.0 percent of Whites in the Southcoast (see Table 24).<sup>52</sup>

Table 24  
Heart-Related Conditions by Race

	Hypertension			High Cholesterol		
	White	Black	Hispanic	White	Black	Hispanic
Greater Fall River	29.9%	33.0%	22.0%	39.0%	34.2%	49.8%
Greater New Bedford	30.7%	NA	24.8%	39.3%	NA	47.1%
Massachusetts	26.6%	30.2%	22.1%	36.3%	31.0%	37.0%

Source: BRFSS, 2010–2013, MassCHIP.

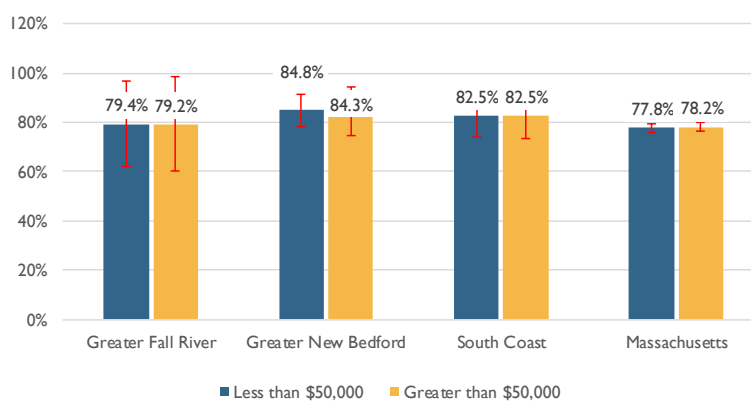
Income-Based Disparities

Data collected via BRFSS allows for analysis based on a respondent’s income level. Generally, health access and outcomes are better for those with incomes greater than \$50,000, and risk behaviors are more prevalent among those making less than \$50,000. However, conclusions should be made with caution due to the generally high margins of error for income-based data.

Clinical Care

Access to annual check-ups appears to be consistent regardless of income levels. Figure 79 shows that the percentages of adults having annual check-ups are virtually the same for each locale, in low-income and middle-income levels. Additionally, all locales of the Southcoast region have higher percentages having annual check-ups than for Massachusetts as a whole. Greater New Bedford (84.8%) is 6 percentage points higher than the state average (77.8%).

Figure 79  
Percent Having Annual Check-Up



Source: BRFSS 2011–2013, MassCHIP.

<sup>52</sup> Some of these results are with the BRFSS survey’s margin of error, thus conclusions should be made with caution.

While it is generally true that higher income residents participate at greater percentages in health screenings such as blood cholesterol checks, breast exams, and cancer screenings, the gap in some cases seems to be narrowing (see Table 25). For example, colorectal cancer screening and mammograms seem to be conducted at fairly consistent intervals, regardless of income, while breast exams and blood cholesterol checks seems to have greater inconsistencies.<sup>53</sup>

Table 25  
Health Screening by Income

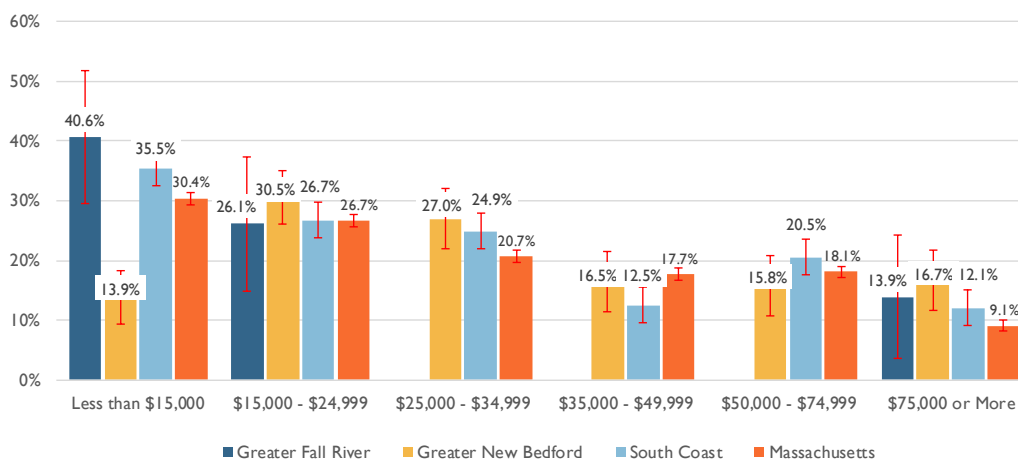
	Had Blood Cholesterol Checked Within Five Years		Colorectal Cancer Screening Within Five Years		Had Breast Exam Within Two Years		Mammogram Within Last Two Years	
	Less than \$50,000	Greater than \$50,000	Less than \$50,000	Greater than \$50,000	Less than \$50,000	Greater than \$50,000	Less than \$50,000	Greater than \$50,000
Greater Fall River	85.0%	NA	62.7%	67.1%	83.1%	NA	84.3%	NA
Greater New Bedford	84.2%	95.9%	54.7%	58.5%	76.9%	86.5%	89.3%	86.5%
South Coast	84.6%	92.0%	58.0%	61.5%	79.2%	86.1%	87.5%	87.2%
Massachusetts	79.5%	88.9%	52.8%	64.1%	78.0%	88.7%	81.5%	86.8%

Source: BRFSS 2011–2013, MassCHIP.

Health Behavior

Many health behaviors are aligned with income levels: as income increases, negative health behaviors decrease. Smoking prevalence demonstrates this quite clearly. Smoking rates continue to decline as income increases, as shown in Figure 80. Interestingly, in the \$35,000 to \$49,000 salary range, smoking prevalence in the region is less than the statewide average (12.5% for the Southcoast; 17.7% for Massachusetts).

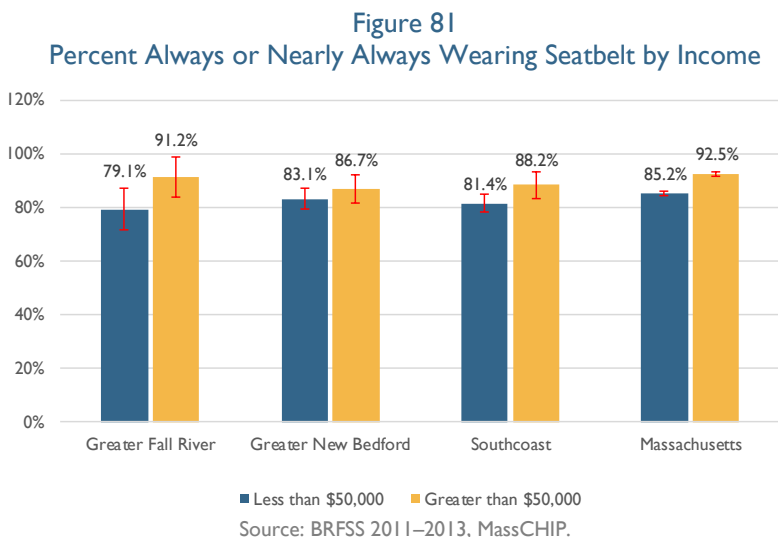
Figure 80  
Smoking Prevalence by Income



Source: BRFSS 2011–2013, MassCHIP (data are missing for some ranges Greater Fall River).

<sup>53</sup> Some of these results are with the BRFSS survey’s margin of error, thus conclusions should be made with caution.

Similarly, there is a marked difference by income in the use of seatbelts as a health safety feature. Across all locales and Massachusetts, there are gaps in usage based on income level (see Figure 81).



Residents earning higher incomes tend to eat five fruits and vegetables at higher percentages than those earning less income. Still, there is a much narrower gap in disparity between being overweight and obese in a specific locale. These issues tend to discriminate less than other health behaviors, and affect residents similarly, regardless of income level (see Table 26).<sup>54</sup>

**Table 26**  
Health Behaviors by Income

	Five Fruits/Veg Per Day		Overweight		Obese	
	Less than \$50,000	Greater than \$50,000	Less than \$50,000	Greater than \$50,000	Less than \$50,000	Greater than \$50,000
<b>Greater Fall River</b>	NA	NA	69.3%	67.5%	30.9%	28.4%
<b>Greater New Bedford</b>	15.1%	20.7%	67.2%	65.7%	29.1%	27.0%
<b>South Coast</b>	13.0%	19.5%	68.1%	66.3%	29.9%	27.5%
<b>Massachusetts</b>	15.9%	21.5%	60.7%	58.4%	26.5%	21.2%

Source: BRFSS 2011–2013, MassCHIP.

<sup>54</sup> Some of these results are with the BRFSS survey’s margin of error, thus conclusions should be made with caution.

For all locations, Greater Fall River, Greater New Bedford, the Southcoast Region CHNA and Massachusetts, higher income residents do not allow smoking within the home at higher rates than lower income residents (see Figure 82).

**Figure 82**  
Smoking Rules: No Smoking in Home by Income

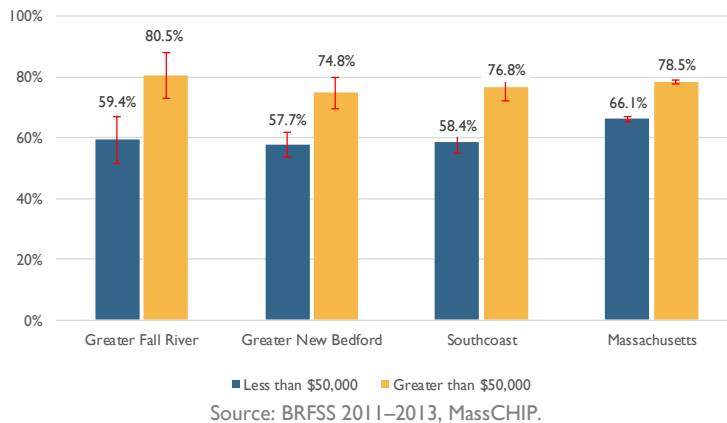
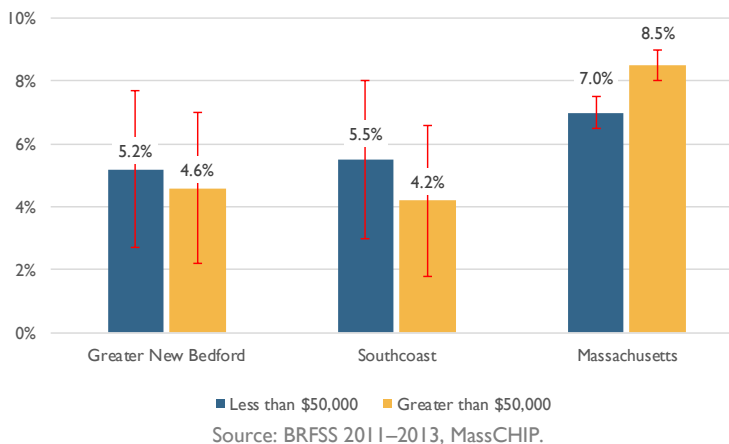


Figure 83 examines heavy drinking behaviors. The gap between lower income and higher income residents is narrow. However, in Greater New Bedford and the Southcoast Region CHNA, lower income residents consume alcohol more heavily than higher income residents. The state of Massachusetts appears to challenge conclusions, as higher income residents consume more alcohol than lower income residents.

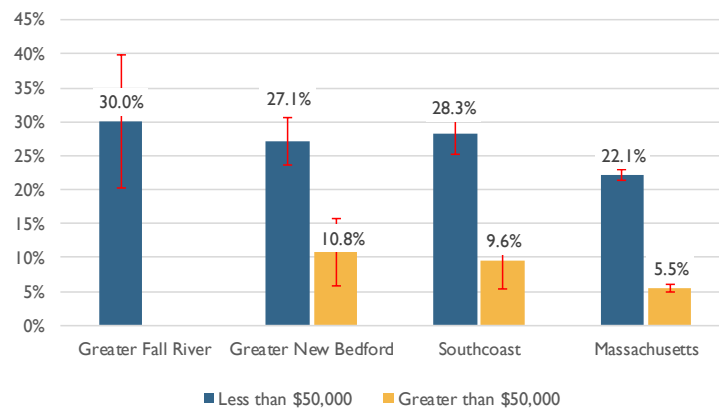
**Figure 83**  
Heavy Drinking Within Past 30 Days by Income



Self-Assessments

In the Southcoast, residents who earn less than \$50,000 per year, report having fair or poor health in significantly greater proportions than those who earn above that threshold (Figure 84).

Figure 84  
Percent Reporting Fair or Poor Health by Income



Source: BRFSS 2011–2013, MassCHIP.

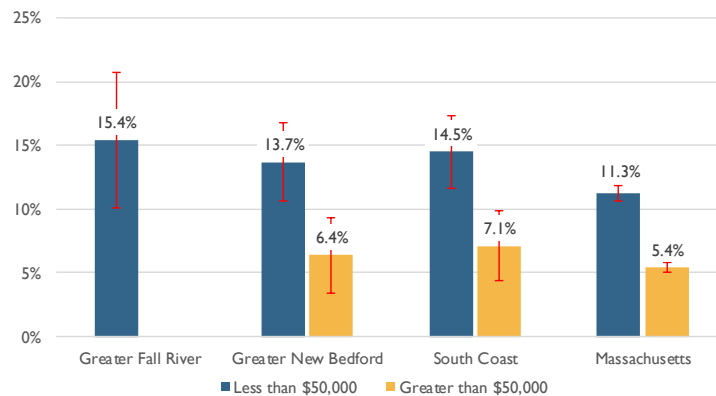
Similar patterns hold true for residents reporting poor physical and mental health status. Lower income residents described poor physical and/or mental health at a rate 12 percentage points greater than higher income residents (16.5% versus 4.5%). One in 5 low-income Southcoast residents (20.0%) reported having 15-plus days of poor mental health versus only 5.6 percent of higher earners.

Low-income Southcoast residents report higher percentages having disabilities that require assistance than Massachusetts’ residents overall (16.6% versus 11.8%). Greater New Bedford low-income residents report an even higher percentage at 18.7 percent, almost 1 in 5 low-income residents.

Diabetes

There is an income disparity for those residents reporting having had or currently having diabetes (Figure 85). Rates are doubled for lower income Southcoast residents, which also holds true for Massachusetts as a whole. However, the state averages are slightly lower than those seen in the Southcoast. The same relationship pattern holds true when looking at the percent reporting pre-diabetes, with 7.0 percent of low-income Southcoast residents and 3.6 percent of higher earners reporting such.

Figure 85  
Percent Had or Have Diabetes by Income

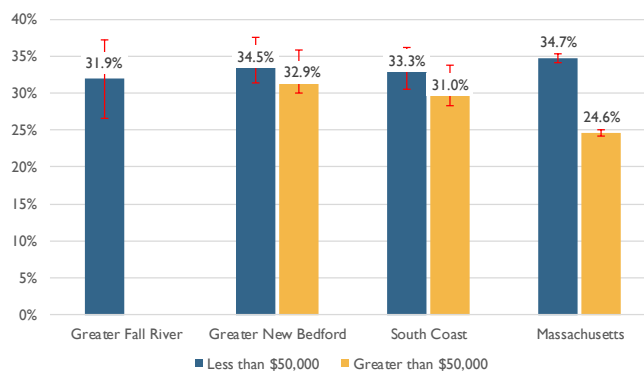


Source: BRFSS 2011–2013, MassCHIP.

Hypertension

In the Southcoast, low earners and higher earners report similar percentages of hypertension diagnosis. On the other hand, the state has a larger gap between low earners and high earners; higher earners have a much lower percentage reporting hypertension than lower earners (24.6% for high earners and 34.7% for lower earners). This suggests that hypertension has a much narrower disparity by income in the Southcoast (see Figure 86). This may be due to eating or exercising patterns that remain embedded within certain cultural groups in the Southcoast despite higher income.

Figure 86  
Percent Reporting Hypertension by Income



Source: BRFSS 2011–2013, MassCHIP.

## Education-Based Disparities

Education levels are typically closely aligned with income, therefore, many education-based disparities align closely with income-based disparities. However, conclusions should be made with caution due to the generally high margins of error for education-based data.

### Clinical Care

Since education levels are correlated with income levels, those who have received less education and have lower incomes tend to have less access to clinical care. In certain measures, the gap has narrowed significantly in the Southcoast region. Examples of measures narrowing include those receiving mammograms within two years and check-ups within a year (Table 27). In fact, those receiving less than a high school education in the Southcoast region show higher percentages than those who have graduated college.<sup>55</sup>

Table 27  
Clinical Care by Education

	Mammogram within 2 Years				Check-up within Year			
	Less than High School	High School Grad	Some College or Less	College Grad +	Less than High School	High School Grad	Some College or Less	College Grad +
Greater Fall River	no data	no data	no data	no data	82.8%	78.2%	80.5%	81.1%
Greater New Bedford	88.8%	86.1%	89.3%	86.7%	85.6%	80.1%	85.6%	85.1%
South Coast	87.9%	84.6%	82.1%	85.8%	84.2%	79.3%	83.9%	83.7%
Massachusetts	83.5%	83.1%	83.6%	86.7%	79.3%	79.7%	78.6%	76.9%

Source: BRFSS 2011–2013, MassCHIP.

Measures that still show educational disparities include clinical breast exam within two years, colonoscopy within five years, and blood cholesterol checked within five years. There is a marked difference between those who have less than a high school education and those who have graduated from college, in terms of the share having had the examinations (Table 28).<sup>56</sup>

Table 28  
Selected Examinations by Education

	Clinical Breast Exam within 2 Years				Colonoscopy within 5 Years				Blood Cholesterol within 5 Years			
	Less than High School	High School Grad	Some College or Less	College Grad +	Less than High School	High School Grad	Some College or Less	College Grad +	Less than High School	High School Grad	Some College or Less	College Grad +
Greater Fall River	no data	no data	no data	no data	no data	57.6%	no data	no data	no data	no data	no data	no data
Greater New Bedford	61.7%	75.9%	76.1%	87.5%	51.1%	58.8%	57.6%	59.7%	80.2%	85.1%	93.5%	93.0%
South Coast	67.6%	80.0%	73.5%	90.7%	59.8%	58.3%	579.0%	63.9%	84.3%	82.6%	91.0%	95.1%
Massachusetts	70.1%	79.0%	80.7%	88.5%	46.8%	55.2%	59.4%	63.9%	72.9%	82.4%	82.8%	89.2%

Source: BRFSS 2011–2013, MassCHIP.

<sup>55</sup> Some of these results are with the BRFSS survey's margin of error, thus conclusions should be made with caution.

<sup>56</sup> Some of these results are with the BRFSS survey's margin of error, thus conclusions should be made with caution.

Health Behavior

Generally, as education levels increase, health behavior measures show improvements. This is true in the Southcoast as well as in Massachusetts, although rates in the Southcoast are generally less favorable than in Massachusetts as a whole. For example, while only 15.7 percent of Southcoast residents with some college or less report eating five fruits and vegetable servings per day, 33.3 percent of college graduates report eating the five servings daily (18.6% and 23.8% respectively for Massachusetts). College graduates in the Southcoast report higher percentages with no smoking rules in the home (college graduates at 74.5% while high school graduates at 60.9%) and report always or nearly always wearing seatbelts (college graduates at 95.4%, while less than high school was at 82.1%). Percentages of residents that were obese differed by almost 10 percentage points over the spectrum of educational levels with 31 percent of residents with less than high school education reported as obese and 21.9 percent of college graduates reporting obesity.

Health Outcomes

Table 29 and Table 30 show data for six health outcomes. The first table represents self-reported outcomes and the second table represents prevalence of diabetes, hypertension, and disability. The lower the educational attainment, the greater the proportion of Southcoast residents that report fair or poor health, being limited by physical or mental health, and having had 15 or more days of poor mental health in the past month.

The same education disparity patterns hold true for prevalence of diabetes and disability requiring help. Conversely, the prevalence of hypertension discriminates significantly less based on education. This is an interesting result because while residents with higher educational levels tend to engage in less risky health behaviors, there still exist similar patterns of hypertension as with those with lower educational levels. It is possible that stress plays a factor in this finding (even though the sources of stress are vary for the different educational attainment groups).<sup>57</sup>

Table 29  
Self-Reported Mental and Physical Health

	Have Fair or Poor Health				Had 15+ Days Limited by Physical or Mental Health				Had 15+ Days of Poor Mental Health			
	Less than High School	High School Grad	Some College or Less	College Grad +	Less than High School	High School Grad	Some College or Less	College Grad +	Less than High School	High School Grad	Some College or Less	College Grad +
Greater Fall River	40.5%	19.4%	61.8%	no data	27.6%	10.3%	no data	no data	no data	17.9%	16.6%	no data
Greater New Bedford	42.5%	20.8%	16.3%	8.4%	11.3%	10.1%	13.3%	5.3%	15.8%	14.0%	13.9%	5.8%
South Coast	41.5%	20.2%	16.5%	9.4%	19.5%	10.2%	11.6%	5.0%	18.9%	15.6%	14.8%	5.4%
Massachusetts	35.2%	17.0%	12.1%	5.6%	14.8%	7.9%	6.7%	3.3%	18.7%	12.5%	12.3%	6.1%

Source: BRFSS 2011–2013, MassCHIP.

Table 30  
Health Outcomes

	Have or Had Diabetes				Diagnosed with Hypertension in Lifetime				Disability, Requiring Help			
	Less than High School	High School Grad	Some College or Less	College Grad +	Less than High School	High School Grad	Some College or Less	College Grad +	Less than High School	High School Grad	Some College or Less	College Grad +
Greater Fall River	17.7%	13.4%	12.7%	no data	no data	30.9%	no data	no data	no data	no data	no data	no data
Greater New Bedford	14.7%	11.2%	7.5%	7.7%	37.8%	40.2%	33.6%	31.0%	25.2%	11.5%	10.8%	5.5%
South Coast	16.2%	12.1%	9.3%	7.7%	39.3%	36.3%	36.4%	30.2%	22.3%	11.2%	7.4%	5.9%
Massachusetts	14.2%	10.5%	7.8%	5.1%	34.9%	35.3%	29.6%	22.7%	15.9%	8.5%	6.8%	3.0%

Source: BRFSS 2011–2013, MassCHIP.

<sup>57</sup> Some of these results are with the BRFSS survey's margin of error, thus conclusions should be made with caution.



## 5 KEY INFORMANT INTERVIEWS AND FOCUS GROUPS

Ten interviews were conducted with area leaders knowledgeable about the Southcoast region. They were asked to provide feedback for the needs assessment regarding their overall impressions of the region's health status; the impact of social determinants of health; which determinants most impact health; which determinants are the easiest to change; barriers to addressing social determinants of health; most critical health issues; barriers to providing access; and use of good health care services. Finally, they were queried to obtain their opinions on how and what the Southcoast Health Care system can do to better impact community health.

Interviewees included the following community leaders (listed alphabetically by last name):

- Barbara Acksen, Independent Psychologist, Greater New Bedford
- Chasity Armstrong, Family Recovery Project Southeastern Massachusetts Coordinator, Dept. of Children and Family Services
- Art Bence, Director, South Shore Mental Health, Wareham
- Jeanne Bissonnette, LICSW, Site Director, Child and Family Services, Acushnet Avenue
- Helena DaSilva Hughes, Executive Director, Immigrants Assistance Center
- Kathy Downey, R.N., Public Health Nurse, Marion
- Gail Fortes, Executive Director, YWCA of Southeastern Massachusetts
- Wendy Garf-Lipp, Executive Director, United Neighbors of Fall River
- Michelle Hantman, President and CEO, United Way of Greater New Bedford
- Melissa Kachapis, Director of Residential and Outpatient Services, Steppingstone, Inc.
- Rev. David Lima, Executive Minister, Inter-Church Council of Greater New Bedford
- Lori Luzzo, Resident Service Coordinator, Woods at Wareham
- Maureen Manning, Director of Beyond School Time, Wareham Public Schools
- Kathy McAdams, Director, Turning Point, formerly Father Bill's and Mainspring
- Kathleen Minnock, Wareham Center Site Manager, Greater New Bedford Community Health Center, Inc.
- Kathy Murphy, Community Organizer, United Interfaith Action
- Connie Rocha-Mimoso, Director of HIV Services, Seven Hills Behavioral Health
- David Shaw, Chairman, Wareham Area Committee for the Homeless (WACH), Turning Point, Wareham Area Clergy Council
- Amanda Stone, R.N., Director, Public Health Nursing Services
- Dr. David Weed, Coordinator, Healthy City Fall River, Partners for a Healthier Community
- Judy Whiteside, Chair, Wareham Board of Selectmen

### 5.1 OVERALL IMPRESSIONS

Generally, key informants felt that residents of the Southcoast were prone to unhealthy habits. Some attributed this to a lack of understanding regarding how to navigate the healthcare system, particularly among immigrants, while others remarked more generally that residents had low levels of understanding regarding nutrition and the health outcomes of risky behavior. Many interviewees attributed the poor health of Southcoast residents to socioeconomic status.

Across nearly all interviewees, there was a consensus that obesity, smoking, and chronic disease were the major issues affecting the health of Southcoast residents (see Figure 87, Overall Impressions Word Cloud in the Appendix). Key informants frequently noted that these issues are more acute when residents have low educational attainment and live in poverty. There was also a strong belief among interviewees that the region's mental health system does

not meet the needs of residents, with some noting that the multigenerational stress and trauma within low-income families creates a greater demand for services. Also, interviewees claimed that there is a stigma related to seeking treatment for mental or behavioral health problems and substance abuse that prevents residents from seeking help.

## 5.2 IMPACT OF SOCIAL DETERMINANTS OF HEALTH

Key informants were asked to discuss how they felt specific aspects of the region's history, culture, demographics, socioeconomic conditions, and values influence the health outcomes of residents.

### Health Disparities

There was no question among key informants that health disparities exist in the Southcoast. Most interviewees felt that poverty was the major source of health disparities in the region. Generally, interviewees perceived poverty and poor health to be linked and multigenerational, with one key informant remarking that “people learn what they live” and they “don't have guidance to lead healthier lives.” Another interviewee noted that families with higher incomes often have better health outcomes because of their socioeconomic status, saying, “People with money have more choices with regard to living a healthy lifestyle and receiving medical care. They do not have to make choices between putting food on the table and going to a doctor's appointment.”

Regarding more specific drivers of health disparities, the key informants highlighted multiple factors, many of which are correlated with poverty, such as high levels of stress, poor housing conditions, low educational attainment, lack of a vehicle, and unemployment. For instance, stress was cited by nearly every interviewee as a cause of health issues, and many commented on the impacts of financial stress on health, with one person remarking that “stress manifests in physical symptoms and habits. It's the result of constantly struggling and never getting ahead. Many of these people have no support or very tenuous support.”

Interviewees also felt that many low-income residents were prevented from accessing the healthcare they needed due to a lack of transportation and high co-pay requirements. While these issues were a major theme among interviewees from Fall River and New Bedford, those located in the surrounding towns also noted that the aging suburban population has created health disparities for elderly residents who have transitioned to a fixed income and are no longer able to drive.

### History of Community

Alcoholism was a major health issue that key informants attributed to the history of the communities in the Southcoast. One interviewee remarked that “hard physical work and alcohol” were part of the region's culture. Others commented on the history of economic disadvantages and how this contributed to high levels of substance abuse, which were perceived to be learned or inherited from the previous generation.

Key informants repeatedly commented on the positive influence that a history of cultural diversity has had on the region. However, a major theme across interviews was the effect of immigrant cultures on health. Particularly, ethnic discrimination was felt to have excluded immigrants from the healthcare system in the past, leading to distrust among older residents. In addition, many interviewees noted the Portuguese and Cape Verdean cultures in the region are maintained primarily through cuisine, and that these cultures do not have traditionally healthy foods; many staples are fried in oil or are starch-heavy dishes. Additionally, the immigrant experience in the region was related to other factors contributing to chronic health issues. Particularly, interviewees felt that the work ethic in the immigrant communities favored “working through” an illness or a health issue rather than missing a day's work, and that this attitude was passed on to second- and third-generation family members.

## Community Values

The Southcoast is a diverse region and to some extent this left interviewees divided on perceptions of the cohesion of the community, and revealed different perspectives on residents' health issues. Some pointed to collaboration and the close-knit nature of immigrant families as major cultural values. Others, however, felt that there has been a shift away from immigrant values in recent generations, and the community "sees itself as being disadvantaged and poor." Also, while some remarked positively about residents' work ethic, others noted that "often people are totally supported by the state and this becomes a way of life for generations."

Interviewees again cited alcoholism as a major health concern that had become culturally acceptable. Some key informants remarked that when children are raised in an environment where substance abuse is acceptable, they are more likely to engage in excessive alcohol or drug use themselves.

Interviewees also perceived Southcoast residents as religious, with one interviewee saying, "We have a population that, no matter the ethnicity, is historically very fatalistic. They are very religious and feel that God has a plan. They feel the day is set when they are going to die and there is nothing they can do about it." Interviewees felt that this attitude created challenges for healthcare providers in motivating people to practice preventive care or to access screenings for hereditary diseases.

## Assets

Nearly every interviewee mentioned collaboration as the most important asset in the community they worked in. One key informant said, "There are very limited resources and the community comes together and works well together to create positive change." This sentiment was echoed in other statements, with respondents noting an accepting environment created by people working with other cultures to better their community, the generosity of people in the community, and the "long history of volunteerism."

In addition, the region's natural resources were frequently cited by key informants as assets crucial to the health of residents. Interviewees who work with residents of the region's cities remarked on the positive influence that living close to the ocean and open space has on people with whom they interact. Interviewees connected these resources to the availability of fresh, local foods in the region through farmers' and seafood markets.

## Obstacles

"There is simply not enough resources to meet the needs," was a phrase repeated in some form by several key informants and it best summarizes the overall perception of interviewees regarding the region's major obstacles. Interviewees who spoke in depth on this issue cited cultural and linguistic barriers as major factors that prevent resources from reaching people in need. Furthermore, there was some discussion regarding the challenges of navigating the healthcare system.

Poverty was a major obstacle to better healthcare outcomes identified by many interviewees, and beyond this, respondents noted specific issues related to financial obstacles. Some key informants, particularly in Wareham and other communities where residents are dependent on seasonal labor, mentioned unemployment or the lack of well-paid, fulltime employment with benefits as obstacles. In addition, interviewees agreed that transportation is frequently an obstacle for elderly and low-income residents without their own vehicles, especially in rural communities. Additionally, there was discussion of the lack of safe, affordable housing options throughout the region.

## Relationships

Key informants felt that there was capacity for collaboration to address issues among residents and service providers within their communities. However, the perception of a rural/urban divide was a theme of the interviews.

Among interviewees located in Fall River and New Bedford, there was a perception that the surrounding communities have a negative image of the cities and that this creates a challenge when trying to forge regional partnerships to address issues such as opioid abuse, for example. To this point, one interviewee remarked that “surrounding communities are hesitant to collaborate or do not want to get involved because they don’t believe they face the same issues.” Additionally, some interviewees remarked on the adversarial relationship between Fall River and New Bedford, who are frequently competing for the same state and federal resources.

However, some interviewees were optimistic regarding future collaboration across the region. One key informant said, “I think that more and more institutions are having a regional rather than a local focus.” In addition, another said, “We need to do more to increase collaboration and bring needed resources into our rural areas.” While there might have been a history of insular problem solving, these comments speak to a growing perception that issues should be addressed regionally.

### Socioeconomic Conditions

As they did earlier, key informants often identified poverty and financial constraints as the major socioeconomic condition affecting health in the region. Many respondents remarked on how living in poverty affects the options residents of the Southcoast have. As one interviewee said, “There is a hierarchy of choices, and people often let their health go.” Others reflected on how low-income residents, particularly those with families, must make short-term decisions without weighing long-term impacts, such as choosing fast-food meals because of the cost and convenience, without regard for nutrition. Additionally, interviewees discussed how high co-pays and limited access create situations in which the working poor do not address small health concerns until they are magnified, with one key informant saying, “People may have catastrophic care but not routine care because they can’t afford it.”

## 5.3 DETERMINANTS THAT MOST IMPACT HEALTH

When asked what they felt to be the social determinant with the most impact on health, key informants kept with the themes they had touched upon earlier. Income disparity was the major theme throughout. As in the interviews, key informants tied housing, transportation, education, and employment to income levels when discussing them as determinants of health.

Regarding housing, interviewees felt that the lack of affordable and safe housing for low-income families created multigenerational problems related to substandard housing, as one interviewee put it. “When you don’t feel good about your surroundings, it affects your overall health and well-being in a negative way.” Expanding on this, some interviewees remarked that the stress of paying rent for even substandard housing adversely impacts the health of low-income households.

Interviewees frequently linked transportation and employment together, especially outside of the cities, with some commenting on how the lack of transportation options in rural areas negatively impacts households living in poverty, particularly the elderly living on fixed incomes, because it limits their ability to seek nonemergency care. One service provider commented, “We can have the best programming, but if people can’t get there it does no good.” Many interviewees felt that improving public transportation linkages between Fall River and New Bedford and the surrounding towns would positively impact the health of residents and provide more access to employment opportunities.

Much like transportation, interviewees felt that a lack of education limited employment opportunities, and therefore also limited income opportunities of Southcoast residents. Many key informants connected limited education to an inadequate understanding of how to manage one’s health and navigate the healthcare system, with some mentioning language and cultural barriers to education as a major obstacle to accessing healthcare.

## 5.4 BIGGEST BARRIERS TO ACCESSING CARE AND MAINTAINING HEALTH

When asked what they perceived to be the biggest barriers to accessing and making good use of health services to maintain health, the responses of key informants varied. However, there was some agreement that limited education, public transportation, and inadequate number of mental health services posed considerable obstacles to improving people's access to healthcare and improving health outcomes for the region.

### Transportation

Access to sufficient public transportation as a barrier to care is cited, for example, as hindering access to cancer screening and clinical care, for examples (see Figure 97 in the Appendix for the Barriers Word Cloud). The Cancer Disparities Capacity Building Project conducted in June 2015 confirmed this observation from key informants<sup>58</sup>:

"A significant number of participants noted that transportation is a major barrier, including transportation to appointments, screenings, and treatment. As a result, individuals often cannot get to appointments even when they have the desire to seek out preventive care or when they require cancer treatment. Exacerbating the issue is that some cancer patients are sent to Boston for treatment, including those who do not own a car. The focus group of providers (e.g., doctors, nurses, and counselors) acknowledged that care coordinators spend hours arranging transportation for patients."

While there was some agreement that public transportation in the region has improved, particularly regarding increased hours and routes in the cities, as one interviewee said, "People don't think of health education until it is too late," and at that time, bus service simply may not be available. A survey conducted in April 2016 by University of Massachusetts students and Bus Riders United confirms that availability of public transit has remained an issue. They found of the residents surveyed in New Bedford (ZIP codes 02740, 02746) and North Dartmouth (02747), 25.7 percent of those surveyed used public transit for medical appointments. Moreover, 48.3 percent of those surveyed said they did experience trouble while using public transportation with the primary issue being that "public transit does not run the time I need it" (44.5% of respondents).<sup>59</sup>

In response, the Southeastern Regional Transit Authority (SRTA) has begun to expand routes and frequency of trips to weeknights and plans to add transit between Wareham and New Bedford in early 2017<sup>60</sup>. These modifications should serve to assist residents with improved access to medical appointments.

### Mental Health Services

Another common interview theme was the inadequacy of mental health services relative to the perceived demand, with one respondent saying, "Lots of people [are] walking around with undiagnosed issues." One interviewee in Wareham noted that the Greater New Bedford Community Health Center was attempting to add mental health services, and that they expected this to improve access. However, interviewees noted a stigma related to seeking out and receiving mental health treatment prevented Southcoast residents from accessing care. It was suggested that improving health education would help reduce the stigma and show people how to discuss mental health issues with their care providers.

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<sup>58</sup> Cancer Disparities Capacity Building Project: Phase I Needs Assessment Final Report. Public Policy Center. UMass Dartmouth, June 2015.

<sup>59</sup> Hidden Costs of Public Transit Dependency: How the Poor Pay More, UMass Dartmouth, April 2016.

<sup>60</sup> <http://wareham.wickedlocal.com/news/2016/11/30/bus-service-approved-to-new-bedford>

## 5.5 MOST VULNERABLE IN THE COMMUNITY

Many of the groups discussed earlier were identified by key informants as the most vulnerable members of the community. Elderly residents in rural communities who are unable to live independently due to declining health and limited income were identified by a number of interviewees. Others felt that children in low-income households were the most vulnerable segment of the population because they were exposed to the stress of poverty from birth. Interviewees also suggested that these children were more likely to suffer from undiagnosed trauma.

Also, some interviewees identified recently arrived immigrants as vulnerable due to language and cultural barriers, with one interviewee specifying those who come from countries where the healthcare system is viewed with distrust due to strict governmental controls.

## 5.6 SYSTEM AND ENVIRONMENT EFFECTS ON HEALTH

It is clear from the responses that key informants have differing opinions on how systems and the environment affect the health of Southcoast residents. As in other sections, interviewees located in the region's cities had a different perspective than those in the rural areas, but there was also recognition that differences existed at the neighborhood level within every community. When asked to rate or rank amenities in their service area, many interviewees responded that the quality of these facilities depended on the area, with less affluent neighborhoods having fewer or poorer quality parks, and less access to healthy, affordable food options, sidewalks, and physical education in schools.

Interviewees expressed that more needs to be done to encourage children to be physically active. Some key informants theorized that this could only be done in poor neighborhoods if the perception of the outdoors changed from unsafe to safe, and that, in order to do so, there would need to be a reduction in violence. In both urban and rural areas, interviewees again highlighted the importance of transportation in contributing to better health outcomes, with one interviewee saying that there is a "lack of healthy, accessible, and affordable food options, especially for families without transportation." However, there were some different perspectives on this issue. For instance, one interviewee said that "even with good access people make poor nutrition choices," and referred to the need for better education about making proper nutritional choices to improve health outcomes. Also, as with other topics, there was a focus on the difficulties facing homebound elders, who have limited access to fresh food in urban food deserts and in rural areas with limited public transportation.

## 5.7 HOW CAN SOUTHCOAST HEALTH IMPROVE HEALTH OUTCOMES?

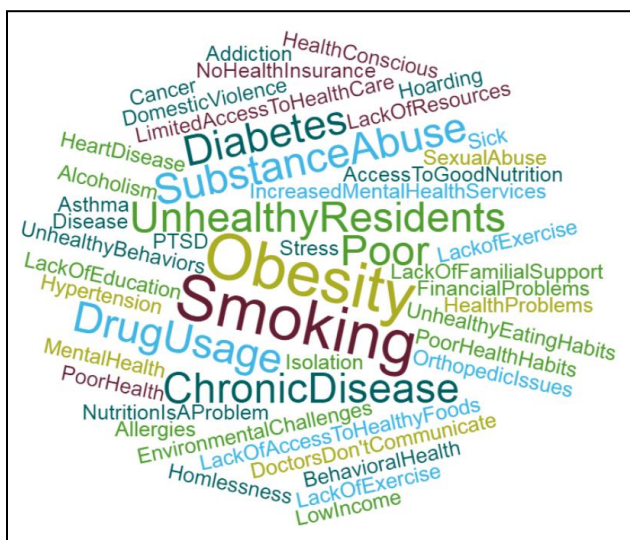
A few major themes emerged when interviewees were asked to list the top three steps Southcoast Health could take to improve health outcomes in the region. First, respondents felt that more could be done to help residents prevent and manage chronic diseases, particularly in low-income neighborhoods, and for elders living independently. This could be accomplished through another action suggested by interviewees: improving community outreach and engagement. Key informants felt that more could be done both to educate the public on programs available to them and to learn from the public regarding their healthcare needs, with some interviewees specifically mentioning mental health. In the same vein, interviewees suggested that Southcoast could improve the delivery of services by encouraging more collaboration among community partners and expanding the region's network of urgent care and walk-in clinics. Finally, interviewees discussed the need to use the resources of Southcoast and its community partners to address substance abuse issues and the opioid epidemic in particular.

## APPENDIX

### KEY INFORMANT INTERVIEW WORD CLOUDS

The word cloud for overall impressions shows that the key informants identified obesity and smoking are as the two leading health areas of concern (see Figure 87):

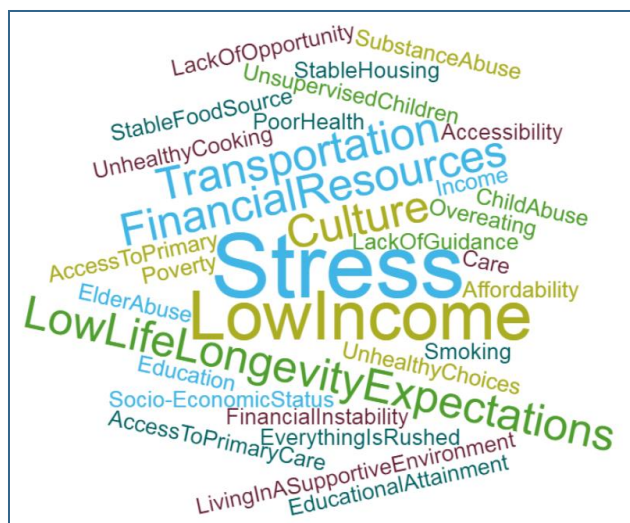
Figure 87  
Overall Impressions



Source: Key Informant Interviews, 2016.

The word cloud for health disparities shows that stress and low income are the two leading concerns (see Figure 88).

Figure 88  
Health Disparities



Source: Key Informant Interviews, 2016.

The word cloud for community history shows that alcoholism is a leading longstanding issue (see Figure 89).

Figure 89  
Community History



Source: Key Informant Interviews, 2016.

The word cloud for community assets shows that collaboration is an important value and asset within the Southcoast community (see Figure 90).

Figure 90  
Community Assets

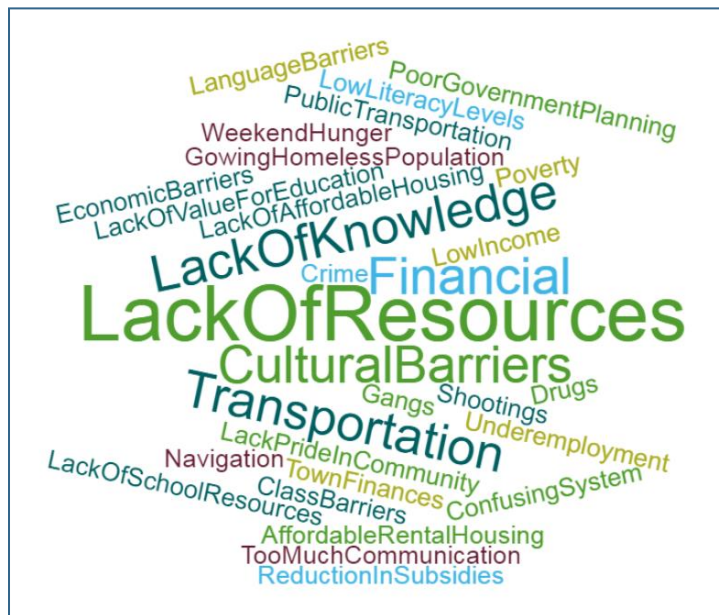


Source: Key Informant Interviews, 2016.



The word cloud showing obstacles indicates lack of resources as the overwhelming obstacle identified in the key informant interviews (see Figure 91).

Figure 91  
Obstacles



Source: Key Informant Interviews, 2016.

The word cloud for community relationships indicates that community leaders felt that negative perceptions were prevalent within the region and affected communication and relationship building (see Figure 92).

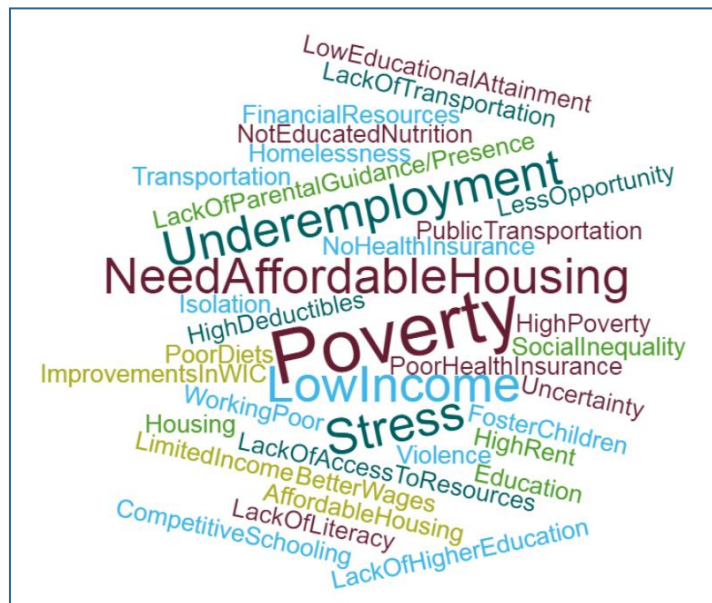
Figure 92  
Community Relationships



Source: Key Informant Interviews, 2016.

The word cloud for social economic conditions shows that the top issue is poverty, with lack of affordable housing, underemployment and stress also prominent within the region’s landscape (see Figure 93).

Figure 93  
Social Economic Conditions



Source: Key Informant Interviews, 2016.

The word cloud for areas most impacting health shows that transportation is largely the most significantly identified issue of concern to area leaders interviewed (see Figure 94).

Figure 94  
Areas Impacting Health



Source: Key Informant Interviews, 2016.

The word cloud for community resources shows partnerships and collaboration as being positive aspects of the Southcoast environment (see Figure 95).

Figure 95  
Community Resources



Source: Key Informant Interviews, 2016.

The word cloud for specific issues shows equal emphasis on several areas that are covered extensively in this needs assessment (see Figure 96).

Figure 96  
Specific Issues of Concern

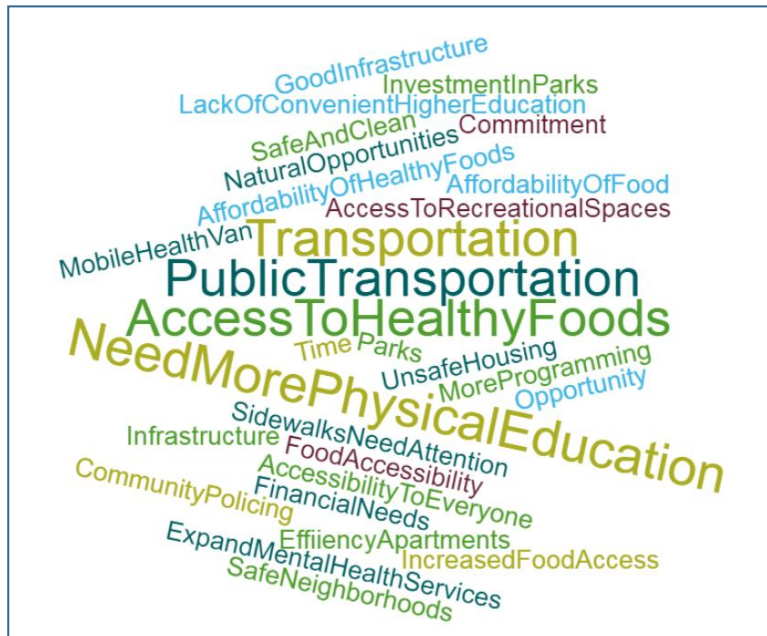


Source: Key Informant Interviews, 2016.



The word cloud for available health supports identifies several need areas: public transportation, more physical education, and access to healthy foods (see Figure 99).

Figure 99  
Health Supports Needed



Source: Key Informant Interviews, 2016.

The word cloud for ways to provide better impact on health status is shown in Figure 100).

Figure 100  
Ways to Impact Health Status



Source: Key Informant Interviews, 2016.

The word cloud for things that can be improved in general highlights chronic disease management as the largest area of need (see Figure 101).

Figure 101  
Improvement Opportunities



Source: Key Informant Interviews, 2016.

## DATA SOURCES

Community Commons.org

FBI Uniform Crime Reporting Program.

Massachusetts Bureau of Substance Abuse Services.

Massachusetts Center for Health Information and Analysis (CHIA) database.

Massachusetts Department of Elementary and Secondary Education.

Massachusetts Department of Environmental Protection (DEP).

Massachusetts Department of Public Health, Body Mass Index Screening in Massachusetts Public School Districts.

Massachusetts Department of Public Health, MassCHIP: Behavioral Risk Factor Surveillance System, Cancer Incidence, Childhood Lead Screening, Vital Statistics.

Massachusetts Department of Public Health, Bureau of Environmental Health, Massachusetts Environmental Public Health Tracking (EPHT) system.

Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA).

Massachusetts Office of Geographic Information (GIS).

Massachusetts Health Insurance Survey.

Massachusetts Executive Office of Labor and Workforce Development.

Robert Wood Johnson Foundation, Commission to Build a Healthier America. "Issue Brief 5: Race and Socioeconomic Factors." April 2009.

Southcoast Health Systems, PRIDE Survey and Key Informant Interviews.

U.S. Census: American Community Survey, 5 Year Estimates: 2007 – 2011, 2008 – 2012, 2009 – 2013, 2010 – 2014; and 2011 – 2014.

U.S. Census: Decennial Census, 1970 -2010.

U.S. Department of Agriculture (USDA), Food Environment Atlas.

U.S. Environmental Protection Agency (EPA).

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