

2016

Winchester Hospital Community Health
Needs Assessment



Produced by John Snow Inc.



Executive Summary

Purpose and Background

Winchester Hospital (WH), founded in 1912, is a 229-bed community hospital located in Winchester, Massachusetts, that serves nearly half a million people and is one of the leading providers of comprehensive health care services in northwest suburban Boston. In addition to acute-care hospital inpatient services, Winchester Hospital provides an extensive range of outpatient services as well as integrated home care. It provides care in major clinical areas including medicine, surgery, pediatrics, cancer, obstetrics/gynecology and newborn. WH is a leading provider in the region in a broad range of important medical specialties, including cardiology, pulmonary medicine, oncology, gastroenterology, orthopedics, rehabilitation, radiation oncology and pain management. The staff is guided by the hospital's mission, "To Care. To Heal. To Excel," in service to its community.

This Community Health Needs Assessment (CHNA) report, along with the associated Community Health Improvement Plan (CHIP), is the culmination of nearly a year of work. WH conducted the assessment to better understand and address the health-related needs of those living in its service area, with an emphasis on those who are most vulnerable. This project fulfills Massachusetts Attorney General's Office and federal Internal Revenue Service (IRS) requirements mandating that WH assess community health need, engage the community and identify priority health issues every three years. The Commonwealth and federal requirements further direct WH to create a community health improvement plan that will guide how WH, in collaboration with the community, its network of health and social services providers, and the local health departments, will address the identified needs and priorities.

With respect to community benefits, WH works with partners and collaborators to increase access to hospital emergency and inpatient services, specialty care services, primary care, behavioral health services, and other needed community services. In addition, WH supports or implements community health programs that promote health education, reduction of health care risk factors (e.g., poor nutrition, limitations on physical activity, tobacco use, alcohol abuse), as well as ensure that those in its service area are provided chronic disease management services. Winchester Hospital also works with partners to reduce the burden of mental illness and substance use. This work is done in partnership with an extensive array of health, social services, public health and other community-based organizations throughout WH's service area.

WH implements activities that meet the needs of all demographic and socio-economic segments of the population, but focuses particular efforts on those who face disparities due to socio-economic status, race/ethnicity, age and other factors.

Approach and Methods

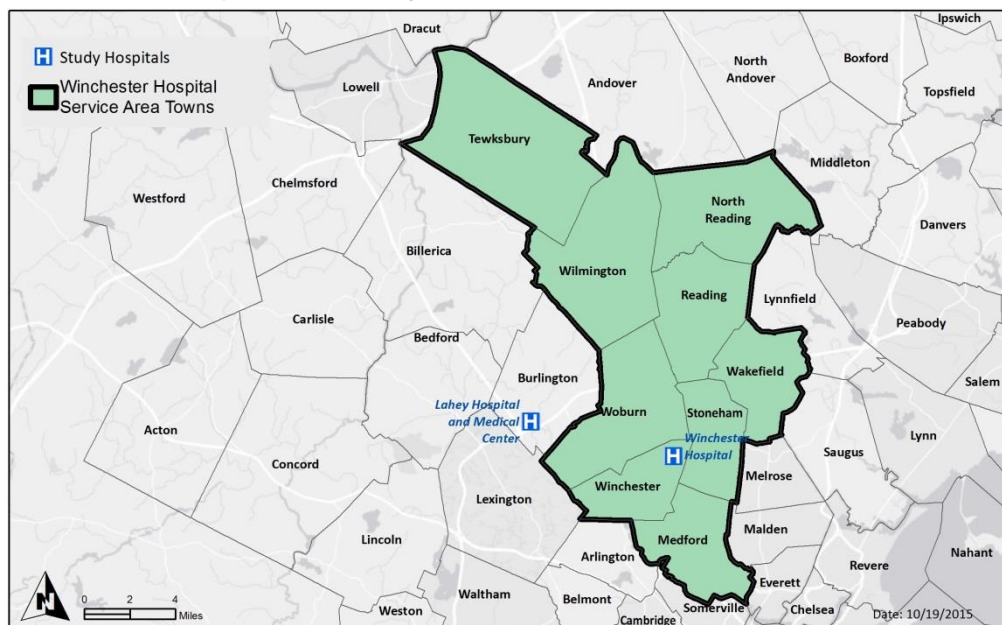
The CHNA was conducted in three phases, which allowed WH to (1) compile an extensive amount of quantitative and qualitative data, (2) engage and involve key stakeholders, WH clinical and administrative staff, and the community at large, (3) develop a report and detailed strategic plan, and (4) comply with all Commonwealth Attorney General and federal IRS community benefits requirements. Data sources included a broad array of publicly available secondary data, key informant interviews, community forums, and a random household community health survey that captured information from hundreds of households in WH's primary service area.



Winchester Hospital Community Benefits Service Area

WH's community benefits investments are focused on expanding access, addressing barriers to care and improving the health status of residents living in eight municipalities located in Middlesex County: North Reading, Reading, Stoneham, Tewksbury, Wakefield, Wilmington, Winchester and Woburn. WH also serves patients and provides some community health programming in Medford due to long-standing program affiliations with various community health stakeholders. As a result, health status information from this community is included in the

Winchester Hospital Community Benefits Service Area



assessment. However, because Medford is part of other hospitals' community benefits service areas, information from this community has not been included in WH's Community Health Improvement Plan.

Demographically and socio-economically, WH focuses activities to meet the needs of all segments of the population with respect to age, race/ethnicity, income and the broad range of other ways that populations characterize themselves, to ensure that all residents have the opportunity to live healthy, happy and fulfilling lives. However, in accordance with federal status and Commonwealth guidelines, WH's community benefits activities are focused particularly on those population segments identified by the needs assessment as being most at risk: low-income individuals and families, racial/ethnic minorities, youth and adolescents, older adults, and those who are geographically or otherwise isolated. The body of evidence and academic literature have shown that these populations are more likely to face disparities with respect to the social determinants of health, access to care and health outcomes. A map showing the hospital locations and the specific cities and towns that are part of WH's community benefits service area is included above.

Key Health-Related Findings

Following are the key health-related findings drawn from the assessment's interviews and community forums as well as a review of the existing quantitative data.

- **Social Determinants of Health Have a Major Impact on Many Segments of the Service Area's Population.** Relative to the Commonwealth overall, most of the communities in WH's service area are affluent and fare well with respect to the leading health indicators. However, segments of the population struggle to access needed health services and experience disparities in health outcomes. One of the dominant themes from the assessment's key informant interviews and community forums was the impact that the underlying social determinants of health have on the service area, particularly on low-income, racially/ethnically diverse and older adult cohorts. Social determinants such as poverty, lack of employment opportunities, limited transportation, limited health literacy, linguistic barriers, lack of social support and domestic violence limit many people's ability to care for their own and their family's health.
 - **Low Income.** The towns in the WH service area with the highest proportion of low-income individuals are Medford and Woburn. Nearly a tenth (9.8%) of Medford's population was living in poverty, and 21.8% were living in low-income households earning less than 200% of the federal poverty level. In Woburn, 6.2% were living in poverty, and 19.6% were living in low-income households. In the Commonwealth, 8.1% of the population is living in poverty, and 24.8% is living in low-income households.¹
 - **Economic Challenges.** More than 40% of those living in rental units in the cities/towns of North Reading, Stoneham and Winchester applied 33% or more of their income toward rent.²
 - **Older Adults.** Stoneham and Winchester had statistically higher³ proportions of older adults (65 years old or older) — 18.4% and 16.4%, respectively — compared to 14.1% for the Commonwealth.⁴

¹ 2009-2013 US Census Bureau American Community Survey (ACS)

² 2009-2013 US Census Bureau American Community Survey (ACS)

- **Foreign Born.** Nearly a fifth (19.3%) of Middlesex County reported as being foreign born compared to 15% of residents in the Commonwealth overall. Winchester and Woburn had the highest proportions of foreign born in the WH service area, accounting for approximately 15% of their total populations.⁵ These towns also had the highest percentages of residents speaking languages other than English at home, with Woburn reporting 19.6% and Winchester reporting 18.7%.⁶
- **Limited Access to Primary Care, Oral Health and Behavioral Health Services for Low-Income, Medicaid-Insured, Uninsured and Other Vulnerable Population Segments.** Massachusetts has one of the highest rates of health insurance coverage and one of the strongest, most robust health service systems in the nation, yet there are still pockets of low-income, Medicaid-insured, uninsured and underinsured residents who have limited access to needed services and/or are not properly engaged in essential medical, oral and behavioral health services. Behavioral health and oral health services are a particular concern. Per the WH Community Health Survey, these populations are, in turn, more likely to use the emergency room and more likely to have health risk factors such as obesity, poor fitness, and risky alcohol use and be more prone to developing diabetes, hypertension and asthma.
 - **Low-Income Segments Most at Risk.** Key informants and community forum participants stressed the fact that despite the relative affluence of the area, there were pockets of service area residents who struggled with poor health outcomes and faced significant barriers to access.⁷ These populations were more likely to be low income, older adult and foreign born.
 - **High Rate of Uninsured Residents in Low-Income Populations.** Low-income residents are much more likely to be uninsured than residents in middle- and upper-income brackets. According to the 2015 WH Community Health Survey, 3.2% of all respondents from WH's service area were currently uninsured, compared to 8% of low-income respondents.⁸
 - **Lack of Access to Primary Care.** According to the 2015 WH Community Health Survey, 74.9% of all respondents from WH's service area had seen a primary care provider in the past 12 months, compared to only 65.7% of low-income respondents.⁹
 - **Higher Emergency Department Utilization.** According to the 2015 WH Community Health Survey, 22.5% of all respondents from WH's service area had at least one hospital emergency department visit in the past 12 months compared to 29.1% of low-income respondents.¹⁰

³ Throughout the assessment, statistical significance is defined as two values with non-overlapping 95% confidence intervals.

⁴ 2009-2013 US Census Bureau American Community Survey (ACS)

⁵ 2009-2013 US Census Bureau American Community Survey (ACS)

⁶ 2009-2013 US Census Bureau American Community Survey (ACS)

⁷ 2015 WH Key Informant Interviews and Community and Provider Forums

⁸ 2015 Winchester Hospital (WH) Community Health Survey. In order to ensure an appropriate, statistically sound sample size, all low-income respondents from each of the surveys conducted by Lahey Health System's three hospital partners were aggregated.

⁹ 2015 WH Community Health Survey

¹⁰ 2015 WH Community Health Survey

- **Lack of Access Due to Cost of Care.** Three in 10 (30.1%) of those living at 138% of the federal poverty level or below reported not getting needed dental care due to cost, and 1 in 5 (19.3%) were not able to fill a needed drug prescription due to cost.¹¹
- **High Rates of the Leading Health Risk Factors.** Another significant finding drawn from the assessment’s quantitative data was the fact that many cities and towns in WH’s service area have rates of chronic physical and behavioral health conditions that are higher than Commonwealth averages. In some people, these conditions have underlying genetic and biological causes that are difficult to counter. However, for most, these conditions are considered preventable or at least manageable. Addressing the leading health risk factors (e.g., obesity, lack of fitness, poor nutrition, tobacco use and alcohol abuse) is critical to chronic disease prevention and management efforts. It should be noted that most cities and towns in WH’s service area fare well as a whole compared with Commonwealth averages on these risk factors. However, there are cities/towns whose rates are not as favorable and segments of populations in all municipalities that do not fare as well and have major risk factors. As stated above, those at risk are more likely to be low income, older adults or foreign born.
 - **Overweight/Obese.** Based on responses from the WH Community Health Survey, the percentage of adult respondents (18+) who reported as either obese or overweight (58%) was similar to the percentage for the Commonwealth. Adults in households earning below 200% of the federal poverty level were much more likely to be overweight or obese, with 72% of low-income individuals reporting as either overweight or obese.¹²
 - **Cigarette Smoking.** According to the 2015 WH Community Health Survey, 6.2% of adult respondents (18+) reported as current cigarette smokers, compared to 22.3% of low-income respondents. Commonwealth-wide, 16.6% of adults reported as current cigarette smokers.¹³
 - **Alcohol Use.** According to the 2015 WH Community Health Survey, 10.5% of adult respondents reported as heavy drinkers, defined as more than 60 drinks a month for men and 30 drinks a month for women, compared to only 8% of adults in the Commonwealth overall. Similarly, 27.2% of respondents reported “binge drinking” – more than five alcoholic drinks at any one sitting for men and more than four drinks for women – compared to only 19.4% for Commonwealth residents overall.¹⁴
- **High Rates of Substance Use and Mental Health Issues.** One of the leading findings from the assessment was the profound impact that substance use and mental health are having on individuals, families and communities throughout WH’s service area. Depression/anxiety, suicide, alcohol abuse, opioid and prescription drug abuse, and marijuana use among youth are major health issues. Numerous residents and area service providers spoke passionately during interviews and community forums about the tremendous impact that these issues have on many individuals and families in the service area. Opioid abuse was a particular concern for residents

¹¹ Center for Health Information and Analysis. Findings from the 2014 Massachusetts Health Insurance Survey. May 2015. Accessed at: <http://www.chiamass.gov/assets/docs/r/pubs/15/MHIS-Report.pdf>

¹² 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

¹³ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

¹⁴ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

and service providers in WH's service area, and there were calls for greater outreach, education, screening and treatment services for all segments of the population by age and income.¹⁵

- **Substance Abuse Deaths.** Middlesex County experienced more than a 200% increase in opioid overdose deaths between 2001 and 2014. Specifically, in 2001, 76 deaths were reported due to opioid abuse in Middlesex County. By 2013 this number had risen to 147, and between 2013 and 2014 the figure rose to 257 deaths.¹⁶
- **Opioid-Related ED Visits.** Startlingly, every city/town other than Winchester had higher rates of opioid-related emergency department visits per 100,000 population than the Commonwealth or Middlesex County, with Wakefield posting the highest rate at 518 visits per 100,000, followed by Stoneham (398), Wilmington (384), Tewksbury (372), North Reading (369), Medford (355), Reading (333) and Woburn (332). The Commonwealth rate for opioid-related emergency department visits was 260 per 100,000 population, and the Middlesex County rate was 227.¹⁷
- **Opioid-Related Hospitalizations.** Medford (340) and Stoneham (367) each had rates of opioid-related hospitalizations per 100,000 population that were significantly higher than the rates for Middlesex County (208) and the Commonwealth overall (316).¹⁸
- **Alcohol Use.** According to the WH Community Health Survey, approximately 10.5% of adults reported as heavy drinkers, compared to approximately 8% for the Commonwealth overall.¹⁹
- **Binge Drinking.** According to the WH Community Health Survey, 27.2% of respondents reported “binge drinking” – more than five alcoholic drinks at any one sitting for men and more than four drinks for women – compared to only 15.8% for low-income respondents and only 19.4% for Commonwealth residents overall.²⁰
- **Mental Health.** According to the 2015 WH Community Health Survey, approximately 7% of adult respondents (18+) reported as being in poor mental or emotional health more than 15 days per month, compared to approximately 10% of low-income individuals. Commonwealth-wide, 11.2% of adults reported as being consistently in poor mental or emotional health.²¹
- **Mental Health-Related Hospitalization Rates.** Only Medford had higher hospitalization rates for all mental health-related disorders per 100,000 population than the Commonwealth. Medford's rate was 4,030 compared to 3,266 for Middlesex County and 3,840 for the Commonwealth overall.²²

¹⁵ 2015 WH Key Informant Interviews and Community and Provider Forums

¹⁶ Massachusetts Department of Public Health. Data Brief: Fatal Opioid-Related Overdoses among Massachusetts Residents. 2015.

¹⁷ 2008-2012 Massachusetts Hospital Emergency Visit Discharges

¹⁸ 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS)

¹⁹ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

²⁰ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

²¹ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

²² 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS)

- **Mental Health-Related ED Visits.** With respect to mental health-related emergency department visits, only Medford and Wakefield had rates of utilization per 100,000 population that were higher than the rates for Middlesex County and the Commonwealth overall. Medford's rate was 5,480 per 100,000 population, and Wakefield's rate was 5,273, compared to the Commonwealth rate of 4,990 and the Middlesex County rate of 4,074.²³
- **High Rates of Chronic and Acute Physical Health Conditions, Particularly for Low-Income Populations (e.g., heart disease, hypertension, cancer and asthma).** The assessment's quantitative data shows that WH's service area fares better than the Commonwealth overall with respect to chronic disease rates, but a number of towns fare less favorably, and the rates for low-income and older adult populations are very high. It should be noted that even for those communities that do not have rates that are statistically higher than the Commonwealth's, these conditions are still the leading causes of premature death.
 - **Diabetes.** Among WH Community Health Survey respondents, 4.6% of all respondents reported that they had ever been told they had diabetes, compared to 8.5% of adults 18+ in the Commonwealth overall. However, among low-income respondents, 12.1% reported that they had been told they had diabetes.²⁴
 - **Hypertension.** Twenty-five percent of respondents from the WH Community Health Survey reported ever being told they had hypertension, compared to 29% for the Commonwealth overall. Among low-income respondents, 32% reported that they had been told they had hypertension.²⁵
 - **Asthma.** Sixteen percent of WH Community Health Survey respondents reported being told they had asthma, compared to 17% for the Commonwealth overall. The percentage for low-income respondents in this case was actually lower at 13%; however, low-income respondents were considerably more likely to be seen in the hospital emergency department for urgent care. For the entire survey sample, 11% of asthmatics had had an emergency department visit, compared to 19% of low-income respondents.²⁶
- **High Rates of Cancer, Particularly for Low-Income, Racially/Ethnically Diverse and Otherwise At-risk Population Segments.** Many of the communities that are part of WH's service area have high cancer incidence, hospitalization or mortality rates. This is particularly true for certain cancers in specific communities. Myriad factors are associated with cancer, and many of them are very difficult to assess completely or to address. However, at the root of addressing cancer and high mortality are screening, early detection, peer support and access to timely and supportive quality treatment.
 - **Cancer.** Four of the eight towns that are part of WH's primary service area (Reading, Tewksbury, Wilmington and Woburn) reported higher cancer incidence rates (all cancer types) than did the Commonwealth. The highest all-cancer incidence rate per 100,000

²³ 2008-2012 Massachusetts Hospital Emergency Visit Discharges

²⁴ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

²⁵ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

²⁶ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

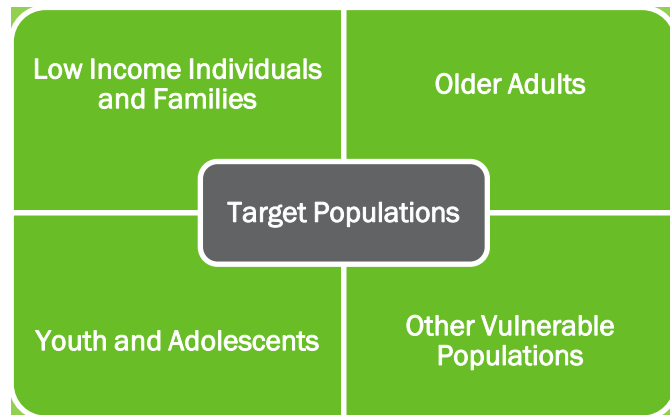
population was in Wilmington (588), followed by Tewksbury (578), Woburn (562) and Reading (561). These rates compare to 509 for the Commonwealth and 510 for Middlesex County.²⁷

Cancer. Of all respondents to WH’s Community Health Survey, 11.8% reported that they had ever been told they had cancer, compared to 11.1% for residents in the Commonwealth; 17% of low-income respondents to the survey had ever been told they had cancer.²⁸

- **Most Common Cancer.** Prostate cancer was the most common cancer among men and breast cancer among women, followed by lung cancer in men and women.²⁹
- **Mammography Screening.** According to the WH Community Health Survey, the percentage of women 40+ who have had a mammography screening in the preceding two years was slightly lower in WH’s service area (84%) than in the Commonwealth overall (85%).³⁰

Priority Target Populations

WH focuses its activities to meet the needs of all segments of the population with respect to age, race, ethnicity, income, gender identity and sexual orientation to ensure that all residents have the opportunity to live healthy lives. However, its community benefits activities are focused particularly on low-income, youth/adolescent and older adult segments of the population that are more likely than other cohorts to face disparities in access and health outcomes.



WH Community Benefits Target Population

Community Health Priorities

The WH CHNA’s approach and process provided ample opportunity to vet the quantitative and qualitative data compiled during the assessment. WH has framed the community health needs in three priority areas, which together encompass the broad range of health issues and social determinants of health facing WH’s service area. These three areas are (1) Wellness, Prevention, and Chronic Disease Management; (2) Elder Health; and (3) Behavioral Health. WH already has a robust Community Health Improvement Plan that has been addressing many of the issues identified. However, this CHNA has provided new guidance and invaluable insight on quantitative trends and community perceptions that can be used to inform and refine WH’s efforts. The following are the core elements of WH’s updated Community Health Improvement Plan.

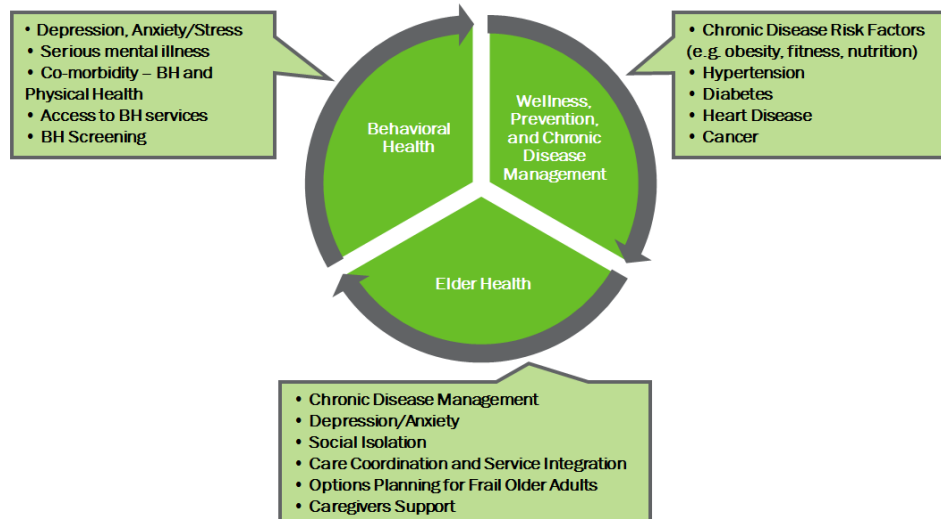
²⁷ 2007-2011 Massachusetts Cancer Registry

²⁸ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

²⁹ 2007-2011 Massachusetts Cancer Registry

³⁰ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

WH Community Health Priorities



Summary Community Health Improvement Plan (CHIP)

Priority Area 1: Wellness, Prevention and Chronic Disease Management

Goal 1: Promote Wellness, Behavior Change and Engagement in Appropriate Care (physical, mental, emotional and behavioral health)

Goal 2: Increase Physical Activity and Healthy Eating

Goal 3: Identify Those with Chronic Conditions or at Risk; Screen and Refer for Counseling/Treatment

Priority Area 2: Elder Health

Goal 1: Promote General Health and Wellness

Goal 2: Decrease Depression and Social Isolation

Goal 3: Increase Physical Activity and Healthy Eating

Goal 4: Improve Access to Care

Goal 5: Improve Chronic Care Management

Goal 6: Reduce Falls

Goal 7: Enhance Caregiver Support and Reduce Family/Caregiver Stress

Goal 8: Reduce Economic and Food Insecurity

Priority Area 3: Behavioral Health (Mental Health and Substance Use)

Goal 1: Promote Outreach, Education, Screening and Treatment for Those with Mental Health and Substance Use Issues in Clinical and Community-Based Settings

Goal 2: Increase Access to Mental Health and Substance Use (MH/SA) Services

Priority Area 4: Partner Collaboration

Goal 1: Promote Collaboration with State and Local Public Health Offices and Community Partners

Acknowledgments

This Community Health Needs Assessment was developed through a collaborative assessment process with the three hospital systems that are part of Lahey Health – Winchester Hospital, Northeast Health Corporation (Beverly Hospital and Addison Gilbert Hospital), and Lahey Hospital Medical Center.

Winchester Hospital (WH) would like to acknowledge the great work, support and commitment of the Lahey Health CHNA Advisory Committee, with representation from each of Lahey Health’s hospitals, including WH. The Advisory Committee met periodically throughout the assessment in order to keep abreast of the assessment’s progress and to provide important feedback on the process.

Since the beginning of the assessment in April 2015, dozens of individuals have participated in this process through interviews and community forums, including representatives from health and social services organizations, public health departments, community advocacy groups, community businesses, and the community at large. The information gathered as part of these efforts allowed WH to engage residents in discussions on community health status, capacity and overall community need, and to gain a better understanding of barriers to care, service gaps and the underlying determinants of health. In addition, hundreds of community members from WH’s primary service area completed lengthy community health surveys. The information gathered through this survey has been critical to assessing need, and will be important as WH moves forward to target its community benefits strategies.

Winchester Hospital would like to thank everyone who was involved in this assessment, but particularly the region’s service providers, health departments, advocacy groups and community members who invested their time, effort and expertise through interviews, surveys and community forums to ensure the development of a comprehensive, thoughtful and quality assessment. While it was not possible for this assessment to involve all of the community’s stakeholders, care was taken to ensure that a representative sample of key stakeholders was engaged. Those involved showed a strong commitment to strengthening the region’s system of care, particularly for those segments of the population who are most at risk. This assessment would not have been possible, or nearly as successful, without the support of all who were involved. Please accept our heartfelt appreciation and thanks for your participation in this assessment.

John Snow Inc. (JSI)

John Snow Inc. and our nonprofit JSI Research & Training Institute Inc. form a public health management consulting and research organization dedicated to improving the health of individuals and communities throughout the world. JSI's mission is to improve the health of underserved people and communities and to provide a place where people of passion and commitment can pursue this cause.

For over 35 years, Boston-based JSI and our affiliates have provided high-quality technical and managerial assistance to public health programs worldwide. JSI has implemented projects in 106 countries, and currently operates from eight U.S. and 81 international offices, with more than 500 U.S.-based professionals and 1,600 host country staff.

JSI is deeply committed to improving the health of individuals and communities worldwide. We work in partnership with governments, organizations and host-country experts to improve the quality, access and equity of health systems worldwide. We collaborate with government agencies, the private sector, and local nonprofit and civil society organizations to achieve change in communities and health systems.

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Introduction

Tax-exempt hospitals like Winchester Hospital (WH) play essential roles in the delivery of health care services and, as a result, are afforded a range of benefits, including state and federal tax-exempt status. With this status comes certain fiduciary and public service obligations. The primary obligation of tax-exempt hospitals is that they provide charity care to all qualifying individuals. Tax-exempt hospitals are also expected to assess health needs within their community and to support the implementation of community-based programs geared to improving health status and strengthening the health care systems in which they operate. Specifically, the IRS requires tax-exempt hospitals to conduct a Community Health Needs Assessment (CHNA) and to develop an associated Community Health Improvement Plan (CHIP) every three years. It is expected that these activities be done in close collaboration with the area’s health and social services providers, local public health departments, key stakeholders, and the public at large.

Figure 1. Commonwealth and Federal Community Benefits Requirements

<p>Massachusetts Voluntary Guidelines</p> <p>Hospitals are required to provide charity care as a condition of Massachusetts licensure – maintaining or increasing the percentage of patient revenues allocated to free care</p> <p>The Attorney General’s Office has developed a set of Voluntary Guidelines for non-profit hospitals and health plans. Specifically, non-profit hospitals are expected to:</p> <ul style="list-style-type: none"> • Affirm and publicize a community benefits mission statement • Demonstrate institutional support / involvement • Demonstrate involvement of the community • Involve local public health departments • Conduct a Community Health Needs Assessment • Identify target populations, specific programs that meet identified need, and measurable goals • Submit a community benefits report to the AG’s office 	<p>Federal IRS Requirements</p> <p>The Patient Protection and Affordable Care Act (PPACA) established requirements for non-profit hospitals under § 501(r) of the Internal Revenue Code. The federal code requires that tax-exempt hospitals:</p> <p>Conduct a Community health needs assessment</p> <ul style="list-style-type: none"> • Engage community stakeholders including local health departments • Prioritize leading health issues • Conduct evidence-based planning activities addressing key health issues • Implement a community health improvement strategy <p>Community Benefits expenditure categories include:</p> <ul style="list-style-type: none"> • Uncompensated Care • Medical, Education & Training • Medical Research • Community Health Programming
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WH recognizes the merit and importance of these activities and, as such, its efforts over the past year extend far beyond meeting Commonwealth expectations or federal regulatory requirements. A robust, comprehensive and objective assessment of community health needs and service capacity, conducted collaboratively with key stakeholders and the community at large, allows WH not only to fulfill its public requirements, but also to explore ways to more effectively leverage its community benefits activities and resources and align these with the organization’s broader business and strategic objectives. The CHNA process facilitates community partnerships and fosters broad community engagement. These efforts can promote the development of more targeted, integrated and sustainable community benefits activities.

This report along with the associated CHIP is the culmination of more than a year of work. It summarizes the findings from WH’s CHNA and provides the core elements of WH’s CHIP, including the major goals that will guide the plan. WH’s Community Relations Department, with the full support

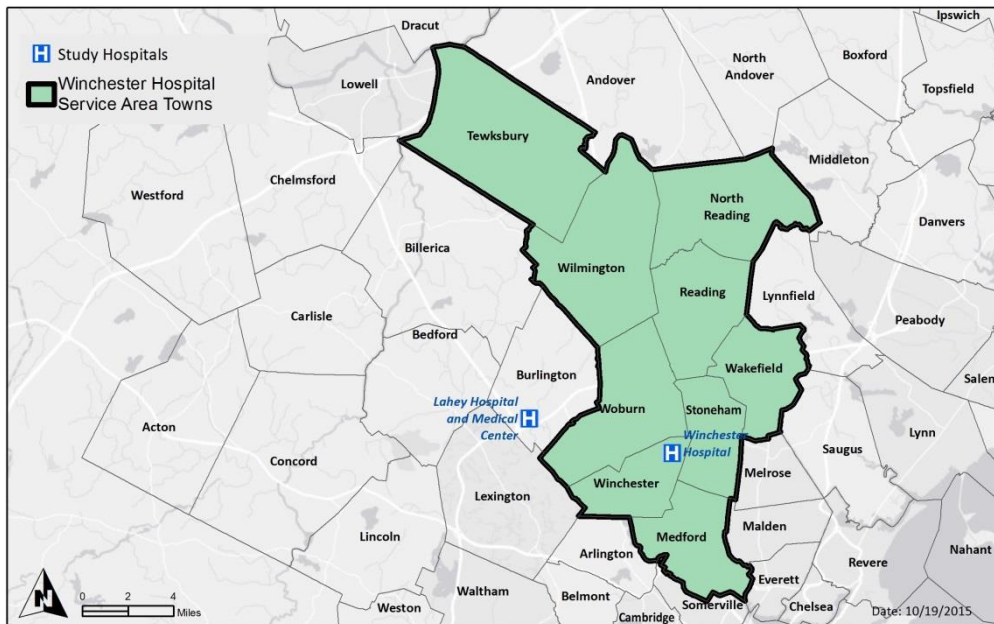
of WH's Board of Directors, clinicians and administrators, looks forward to working with community partners, local health departments and community residents to address the issues that arose from the CHNA and to implement the CHIP.

Included below are further details regarding WH's service area and target population as well as detailed descriptions of how the CHNA was completed and the CHIP developed.

Overview of Community Benefits Service Area and Target Population

Winchester Hospital, founded in 1912, is a 229-bed community hospital located in Winchester, Massachusetts. It serves nearly half a million people and is one of the leading providers of comprehensive health care services in northwest suburban Boston. In addition to acute-care hospital inpatient services, Winchester Hospital provides an extensive range of outpatient services and integrated home care. It provides care in major clinical areas including medicine, surgery, pediatrics, cancer, obstetrics/gynecology and newborn. WH is a leading provider in the region in a broad range of important medical specialties, including cardiology, pulmonary medicine, oncology, gastroenterology, orthopedics, rehabilitation, radiation oncology and pain management. The hospital's staff goes above and beyond every day and is guided by its mission, "To Care. To Heal. To Excel," in service to its community. WH serves individuals and families primarily from northwest

Figure 2: Winchester Hospital Community Benefits Service Area



suburban Boston but has a loyal following who come from far and wide to access its exceptional services. With respect to community benefits, WH focuses its efforts more narrowly on the communities in its primary, local service area. More specifically, WH's community benefits investments are

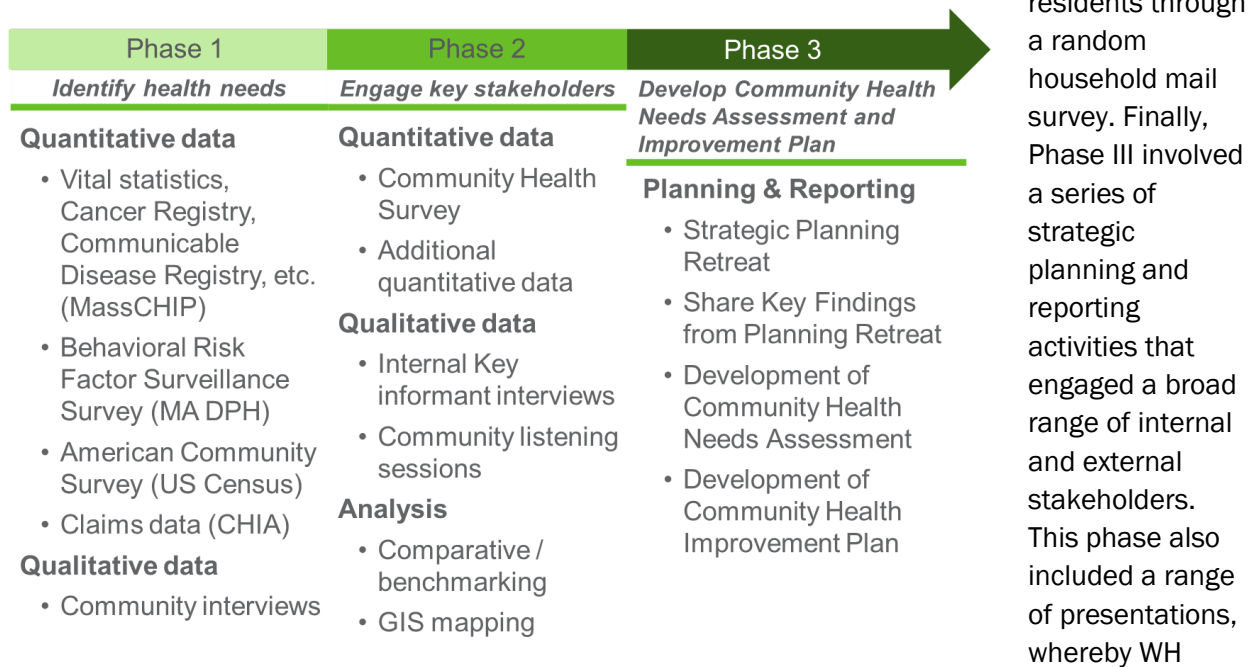
focused on expanding access, addressing barriers to care and improving the health status of residents living in eight municipalities in Middlesex County: North Reading, Reading, Stoneham, Tewksbury, Wakefield, Wilmington, Winchester and Woburn. WH also serves patients and provides some community health programming in Medford due to long-standing program affiliations with various community health stakeholders. As a result, the assessment collected health status information from this community. However, because Medford is included in other hospitals' community benefits service areas, it is not included in WH's CHIP.

Demographically and socio-economically, WH focuses activities on meeting the needs of all segments of the population with respect to age, race/ethnicity, income and the broad range of other ways that populations characterize themselves, to ensure that all residents have the opportunity to live healthy, happy and fulfilling lives. However, its community benefits activities are focused particularly on low-income individuals and families, racial/ethnic minorities, youths and adolescents, older adults, and those who are geographically or otherwise isolated. The body of evidence and academic literature have shown that these populations are more likely to face disparities with respect to social determinants of health, access to care and health outcomes. A map showing the hospital locations and the specific cities and towns that are part of WH's community benefits service area is included above in Figure 2.

Approach and Methods

The CHNA was conducted in three phases. Phase I involved a rigorous and comprehensive review of existing quantitative data along with qualitative interviews with key stakeholders to characterize community need. Phase II involved a more targeted assessment of need and broader community engagement activities that included additional interviews and community listening sessions with health care, social services and public health service providers, as well as forums that included community residents at large. Another major component of Phase II was a comprehensive community health survey (WH Community Health Survey), which collected information directly from

Figure 3: CHNA Approach and Methods



communicated the results of the CHNA and outlined the core elements of its current and revised CHIP. Figure 3 provides a visual of the approach's key components. Following is a more detailed discussion of these components.

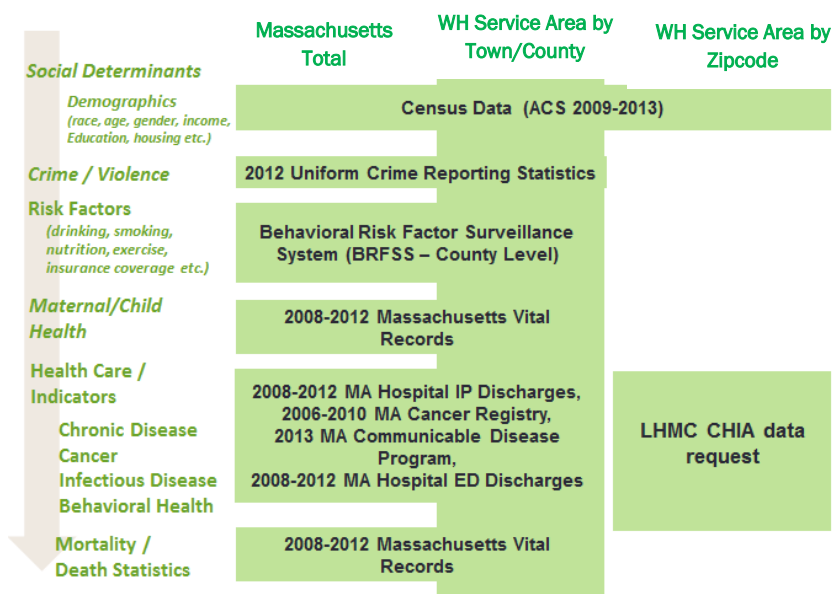
Characterize Population and Community Need

In Phases I and II, the JSI Project Team strived to understand the region’s population with respect to its demographic, socio-economic, geographic, health status, care seeking and access to care characteristics. This involved quantitative and qualitative data analysis, including, to the extent possible, an analysis of changes over time using trend data and information from previous assessments.

Community-specific health data analysis. JSI characterized health status and need at the town, zip code or census tract level. JSI collected

data from a number of sources to ensure a comprehensive understanding of the issues. The primary source of secondary, epidemiologic data was the Massachusetts Community Health Information Profile (MassCHIP) data system.³¹ Tests of significance were performed, and statistically

Figure 4: Data Sources by Level of Geography



significant differences between values are noted when applicable. More specifically, data from the MassCHIP resource is typically provided along with the 95% confidence interval for any given statistic. A confidence interval measures the probability that a population parameter will fall between two set values. Throughout our assessment, statistical significance is defined as two values with non-overlapping 95% confidence intervals. JSI produced GIS maps that facilitated analysis and helped the Project Team visually present the data. The list of secondary data sources included:

- U.S. Census Bureau, American Community Survey 5-Year Estimates (2009-2013)
- Behavioral Risk Factor Surveillance System (BRFSS) (2012-2013 aggregate)
- CHIA Inpatient Discharges
- Massachusetts Health Data Consortium (MHDC) ED Visits
- MA Hospital IP Discharges (2008-2012)
- MA Cancer Registry (2007-2011)
- MA Communicable Disease Program (2011-2013)

³¹ Massachusetts Community Health Information Profile (MassCHIP) system. <http://www.mass.gov/eohhs/researcher/community-health/masschip/>

- MA Hospital ED Discharges (2008-2012)
- Massachusetts Vital Records (2008-2012)
- Massachusetts Bureau of Substance Abuse Services (BSAS) (2013)

Random household survey. To obtain targeted, direct quantitative data from residents of WH's service area, JSI conducted a random household mailing survey that asked over 100 questions on residents' health, well-being and perception of wellness in the community. A randomly generated sample of approximately 1,500 households was drawn from the service area. Selected households received prenotification letters seven to ten days in advance of receiving surveys. Respondents could request a Spanish version of the survey to be mailed by calling an 800 number. Reminder letters and additional survey packets were sent out in two-week intervals, and an online version of the survey was provided to nonrespondents after eight weeks. In all, 1,137 community residents responded to the survey across Lahey Health System's entire service area; 1,022 of these respondents were drawn from the eight cities/towns in WH's primary community benefits service area. A more detailed description of our survey approach and methods is included in the report's appendices.

Key informant interviews with stakeholders. JSI conducted 28 external stakeholder interviews in the hospital's service area. Interviewees included staff at each participating hospital, primary care providers, behavioral health and mental health providers, community-based service organizations, community leaders, and local health officials. Interviews were conducted using a standard interview guide, and information was gathered related to major health issues, mortality/morbidity, barriers to care, underlying determinants of health and service gaps that could not be identified through quantitative data. The goals of these interviews were (1) to understand what health issues were perceived by service providers and policymakers to be most critical and (2) to develop an inventory of resources in the region. One JSI staff person was the lead on all hospital interviews to ensure continuity of understanding of the hospital's needs and resources. Interview notes were reviewed and extracted into a Google spreadsheet. A list of the interviewees is included in the report's appendices.

Capture Community Input

JSI conducted a series of community and provider forums in the hospital's service area to gather community input. During the community forums, JSI discussed findings from the assessment and posed a range of questions that solicited input on community need, perceptions and attitudes, including: (1) Does the data reflect what you see as the major needs and health issues in your community? Are the identified gaps the right ones? What segments of the population are most at risk? What are the underlying social determinants of health status? (2) What strategies would be most effective for improving health status and outcomes in these areas?

The provider forums captured similar information, but more time was dedicated to discussing service gaps and strategies for improving health status and outcomes. The community and provider forums and their locations are listed in Figure 5.

Figure 5: Community and Provider Forums

Date	Event	Audience
November 18, 2015	WH Patient/Family Advisory Committee	Community/Patients/ & WH Staff
February 16, 2016	WH Medical Executive Committee	WH Physician Leaders, Department Chairs
April 5, 2016	Executive Committee of the Board of Directors	WH Clinicians/ Staff and Community Members
February 2, 2016	Community Forum	Community Members (Service Providers and Residents)

Use Data to Prioritize Needs and Set Goals

The goal of the final phase of the assessment was to review the results, identify priorities, review existing community benefits activities and determine a range of proven, feasible, evidence-based interventions that hospitals and other key providers believed would address the identified community health priorities. One of the major goals of this phase was to develop a community benefits strategic framework to clarify community health priorities and identify the range of health issues and subcomponents within each priority area. Drawing on the information gathered in Phases I and II, JSI presented CHNA findings, reviewed the breadth of WH’s current community benefits programming, and explored how WH could refine or augment what it is currently doing to better address community need. These strategic planning activities involved WH’s and Lahey Health’s clinical and administrative leadership, the WH Board of Directors, community service providers, local public health officials, and other community leaders.

Data Limitations

Assessment activities of this nature face limitations with respect to both quantitative and qualitative data collection. With respect to the quantitative data compiled for this project, the most significant limitation was the availability of timely data. Relative to most states and commonwealths throughout the United States, Massachusetts does an exemplary job of making comprehensive data available at the Commonwealth, county and municipal level. This data is made available through the Massachusetts Community Health Information Profile (MassCHIP) data system,³² which is an internet-based resource provided by the Massachusetts Department of Public Health (MDPH).³³ MassCHIP makes a broad range of health-related data available to health and social services

³² Massachusetts Community Health Information Profile (MassCHIP) system.
<http://www.mass.gov/eohhs/researcher/community-health/masschip/>

³³ The MassCHIP portal was down due to technical difficulties at the Massachusetts Department of Public Health, but JSI staff made a formal, comprehensive request in writing, which was met by staff at MDPH. This process limited our ability to do multiple, iterative data draws, but the JSI staff still was able to capture ample data through the MassCHIP system.

providers and the public at large. The data compiled for this assessment represented nearly all of the health-related data that was made available through MassCHIP.

The breadth of available demographic, socio-economic and epidemiologic data was more than adequate to facilitate an assessment of community health need and support the CHIP development process, particularly as it was augmented by health status data captured by the household survey. Nonetheless, the value of the data from MassCHIP is limited due to the fact that much of the information was four to five years old. The list of data sources included in this report indicate the dates for each of the major data sets provided by the Commonwealth. The data was still valuable and allowed the Project Team to identify health needs relative to the Commonwealth and specific communities. However, older data sets may not reflect recent trends in health statistics. The age of the data also hindered trend analysis, as trend analysis required the inclusion of data that may have been up to 10 years old, which challenged any current analysis.

With respect to the household survey, great efforts were made to ensure a representative sample and maintain the analytic power of our analysis. Our sampling strategy was driven by household address data collected at the municipality and census tract levels. A certain number of households were selected in each census tract based on the size of the municipality to ensure an appropriate distribution of households across the service area. In addition, we invested substantial resources to maximize our response rate, which ranged from 35% to more than 50% across the service area, with a total response rate for the WH service area of ~45%.

With respect to qualitative data, information gathered through interviews and community forums engaging service providers, health department officials, other community stakeholders and/or community residents provided invaluable insights on major health-related issues, barriers to care, service gaps and at-risk target populations. Overall, nearly 100 people were involved through our interviews, community forums and strategic planning sessions. This is a considerable achievement but is still a relatively small sample compared to the size of the resident and service provider populations overall. While every effort was made to advertise the community forums and to select a broadly representative group of stakeholders to interview, the selection or inclusion process was not random. In addition, the community forums did not exclude participants if they did not live in the particular regions where the meetings were held, so feedback by meeting does not necessarily reflect the needs or interests of the areas in which the meetings were held.

Leading CHNA Findings

Population Characteristics, Determinants of Health and Health Equity

An understanding of community need and health status in WH's community benefits service area must begin with an understanding of the population's characteristics as well as the underlying social, economic and environmental factors that impact health status and health equity. This information is critical to (1) recognizing disease burden, health disparities and health inequities; (2) identifying target populations and health-related priorities; and (3) targeting strategic responses. The assessment captured a wide range of quantitative and qualitative data related to age, gender, race/ethnicity, income, poverty, family composition, education, violence, crime, unemployment, access to food and recreational facilities, and other determinants of health. This data provided valuable information that characterized the population as well as provided insights into the leading determinants of health and health inequities.

The following is a summary of key findings related to community characteristics and the social, economic and environmental determinants of health for WH's community benefits service area. Conclusions were drawn from quantitative data and qualitative information collected through interviews and community/provider forums. Summary data tables are included below, and more expansive data tables are set forth in the WH CHNA data appendices included with this report.

- **Age and Gender:** Age and gender are fundamental factors in determining community need. With respect to age, more densely populated geographies typically have younger populations than do suburban or rural geographies. WH's service area is a relatively suburban area, and these trends certainly apply in this case.
 - Two of the eight cities/towns that are part of WH's community benefits service area (Stoneham and Winchester) had a statistically higher percentage of older adults (65+) compared to the Commonwealth overall.³⁴
 - Towns in WH's service area with the highest percentages of residents 65 or older were Stoneham, Winchester, Reading and Tewksbury.³⁵
 - At the same time, many of the service area towns also had higher than average percentages of youth/adolescents, including Reading, Wilmington and Winchester.³⁶

A common theme throughout the stakeholder interviews and community/provider forums was that older adults (~65+) and youth (~12-18) represented two of the most vulnerable populations in the service area. This is not to say that young and middle-aged adults, 19-65 years of age, do not face critical problems – only that when community participants were asked to identify demographic segments of the population that were most at risk, they were more likely to cite youth/adolescent and older adult populations than other age cohorts.³⁷ The specific needs of these populations are discussed in greater detail later in the report.

With respect to gender, the service area's distribution overall mirrors that in the Commonwealth, with distributions by gender ranging 50% to 54% female and 46% to 50% male.³⁸ See Figure 6 for specific age distributions at the local, county and Commonwealth levels.

- **Race/Ethnicity, Foreign-Born Status and Language:** There is an extensive body of research and evidence that illustrates the health disparities that exist for racial/ethnic minorities, foreign-born populations and individuals with limited English language proficiency.³⁹ Overall, the service area has a relatively homogeneous, white, non-Hispanic population, although pockets of diversity do exist in selected communities, particularly in Medford, Winchester and Woburn.

³⁴ 2009-2013 US Census Bureau American Community Survey (ACS)

³⁵ 2009-2013 US Census Bureau American Community Survey (ACS)

³⁶ 2009-2013 US Census Bureau American Community Survey (ACS)

³⁷ 2015 WH Key Informant Interviews and Community and Provider Forums

³⁸ 2009-2013 US Census Bureau American Community Survey (ACS)

³⁹ Institute of Medicine. Coverage Matters: Insurance and Health Care.

<http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/2003/Coverage-Matters-Insurance-and-Health-Care/Uninsurance8pagerFinal.pdf> Accessed 6/2/16

- The percentage of white, non-Hispanic people at the municipality level ranged from as high as 93.1% in Wakefield to a low of 77.3% in Medford, with the median being approximately 91%.⁴⁰
- In Middlesex County, 19.3% of the population is reported as being foreign born compared to 15% for the Commonwealth. The median among the eight municipalities in WH's community benefits service area was approximately 7%. Winchester and Woburn had the highest percentages of foreign born at 15%.⁴¹
- Towns with the largest percentages of foreign-born people in the service area were Winchester and Woburn (approximately 15% for both). These towns also had the highest percentages of residents speaking languages other than English at home, with Woburn reporting 19.6% and Winchester reporting 18.7%.⁴²

According to information gathered from our interviews and community forums, foreign-born and racial/ethnic minority populations (e.g., Hispanics, Black/African Americans, Asian-Indians) represent some of the most at-risk populations in the service area. A number of these interviewees or meeting participants cited the fact that often those most at risk are the older parents of those living in the region, who come to the area to live with or to visit their adult children.⁴³

Notably, just because someone is foreign born does not mean they face disparities in health outcomes or barriers to care. In fact, some foreign-born cohorts are known to have generally better outcomes than the population overall. However, it does mean they are more likely to face cultural, linguistic or health literacy barriers that require a more tailored response.

- **Income, Education and Employment:** Socio-economic status has long been recognized as a critical determinant of health. Higher socio-economic status, as measured by income, employment status, occupation, education and the extent to which one lives in areas of economic disadvantage, is closely linked to health status, overall well-being and premature death. Research shows that communities with lower socio-economic status bear a higher disease burden and have a lower life expectancy. Residents of these communities are less likely to be insured, less likely to have a usual source of primary care, more likely to use the emergency department for emergent and non-emergent care, and less likely to access health services of all kinds, particularly routine and preventive services. Moreover, research shows that children born to low-income families are, as they move into adulthood, less likely to be formally educated, less likely to have job security, more likely to have poor health status and less likely to rise to higher socio-economic levels.⁴⁴ A recent article published in the *Journal of the American Medical Association* (JAMA) studied life expectancy across the United States and identified demographic and socio-economic factors that were correlated more or less strongly with low life expectancy. Two of the strongest determinants of low life expectancy are whether individuals were immigrants or foreign born or whether they lived in low-income

⁴⁰ 2009-2013 US Census Bureau American Community Survey (ACS)

⁴¹ 2009-2013 US Census Bureau American Community Survey (ACS)

⁴² 2009-2013 US Census Bureau American Community Survey (ACS)

⁴³ 2015 WH Key Informant Interviews and Community and Provider Forums

⁴⁴ Alexander, K., Entwistle, D., and Olson, L. *Family Background, Disadvantaged Urban Youth, and the Transition to Adulthood*, Russell Sage Foundation. June 2014

communities. Those living in communities with a larger proportion of low-income residents were much more likely to have a lower life expectancy and to face disparities with respect to other leading health indicators.⁴⁵

Overall, the WH service area is relatively affluent compared to the Commonwealth and had a significantly higher median income, a lower percentage of low-income individuals (those earning less than 200% of the federal poverty level) and higher rates of education. However, pockets of people live in poverty or are in low-income brackets in all the cities and towns that are part of the WH service area. There are also individuals who have historically been in middle- or high-income brackets who are temporarily unemployed as well as disabled, or older adults who are on fixed incomes, who struggle due to high housing and other living expenses. Often these individuals and their families struggle to pay for essential household items or are forced to make hard choices about what they live with and without.

- In WH's service area, Medford and Woburn had the highest proportion of their populations living in poverty – 9.8% and 6.2%, respectively, compared to 11.4% for the Commonwealth and 8.1% for Middlesex County.⁴⁶
- In 2014, more than 40% of those living in rental units in the cities/towns of North Reading, Stoneham and Winchester were considered “house poor”⁴⁷ and paid 33% or more of their income on housing.⁴⁸

With respect to education and employment, all the cities and towns in WH's service area had a higher percentage of residents with a high school diploma or GED equivalency as well as lower unemployment rates than the Commonwealth overall.

- In 2014 in the Commonwealth overall, 89.4% of adults 25 or older had a high school diploma or GED equivalency; six of the eight cities/towns in WH's primary service area had percentages at or above 95%.⁴⁹
- Unemployment rates were lower in Middlesex County (3.3%) compared to the Commonwealth overall (4.2%) as of April 2016.⁵⁰
- **Crime, Violence and Community Cohesion.** Crime and violence are major issues in some communities, and these issues can have intense and far-reaching impacts on health status. In their extreme, these impacts can include death, injury and economic loss, but they also include emotional trauma, anxiety, isolation, lack of trust and an absence of community cohesion. Overall, according to quantitative data from the Massachusetts Department of Public Health and anecdotal information from key informants and community forum participants, crime and violence were not leading health concerns in WH's service area.⁵¹

⁴⁵ McGinnis J. Income, Life Expectancy, and Community Health: Underscoring the Opportunity. *JAMA*. 2016;315(16):1709-1710. doi:10.1001/jama.2016.4729.

⁴⁶ 2009-2013 US Census Bureau American Community Survey (ACS)

⁴⁷ “House poor” describes a situation in which a person spends a large proportion of his or her total income on home ownership, including rent payments, mortgage payments, property taxes, maintenance and utilities.

⁴⁸ 2009-2013 US Census Bureau American Community Survey (ACS)

⁴⁹ 2009-2013 US Census Bureau American Community Survey (ACS)

⁵⁰ Bureau of Labor Statistics. http://www.bls.gov/cps/cps_htgm.htm

⁵¹ 2015 WH Key Informant Interviews and Community and Provider Forums. 2012 Uniform Crime Reporting Statistics

- Crime rates were relatively low compared to the Commonwealth overall, and no one in our interviews or community forums mentioned that crime was a major health concern.⁵²
- Data on domestic violence was limited, but there was information on child abuse. In this case, only two towns, Medford and Woburn, had rates of child abuse or maltreatment/neglect that were higher than county levels.⁵³ A number of informants noted elder abuse/neglect as a key concern,⁵⁴ but there was no quantitative data to support this.
- **Unstable Housing and Homelessness.** An increasing body of research suggests that poor housing is associated with a wide range of health conditions, including asthma and other respiratory diseases, exposure to environmental toxins, injury, and the spread of communicable diseases. These health issues have proved to be more common in low-income cohorts who often must decide between paying for safe housing, healthy food, needed health care services and other needs.

At its extreme are those without housing, either living on the street or in some transient, unstable housing situation, who have been shown to have significantly higher rates of illness and shorter life expectancy. Other groups lack affordable housing. Although they technically do not fall into low-income brackets, the high cost of their housing causes them to struggle to pay for food, other essential household items and needed health care services.

Nearly all residents in Middlesex County live in safe housing, and homelessness is not a major concern in WH's service area. However, homelessness does exist, and there are pockets of residents who struggle with their housing costs.

- Qualitative interviews suggested the high home values and cost of living in many of these areas made it difficult for many residents to make ends meet. Older adults living on fixed incomes were identified as particularly at risk.⁵⁵ In 2014, more than 40% of those living in rental units in the cities/towns of Medford, Stoneham and Winchester paid 33% or more of their income on housing.⁵⁶
- **Food Access.** "Food is one of our most basic needs. Along with oxygen, water and regulated body temperature, it is a basic necessity for human survival. But food is much more than just nutrients. Food is at the core of humans' cultural and social beliefs about what it means to nurture and be nurtured."⁵⁷ Issues related to food insecurity, food scarcity, hunger, and the prevalence and impact of obesity are at the heart of the public health discourse in urban and rural communities across the United States.

While we were unable to capture quantitative data on this topic, many interviewees and participants in the community forums identified lack of access to healthy foods as a major health issue for segments of the population in this region. Specifically, low-income

⁵² 2015 WH Key Informant Interviews and Community and Provider Forums

⁵³ 2011 Massachusetts Department of Children and Families

⁵⁴ 2015 WH Key Informant Interviews and Community and Provider Forums

⁵⁵ 2015 WH Key Informant Interviews and Community and Provider Forums

⁵⁶ 2009-2013 US Census Bureau American Community Survey (ACS)

⁵⁷ Feeding America. Child Development. <http://feedingamerica.org/SiteFiles/child-economy-study.pdf>.

individuals and families, as well as low-income, frail and/or isolated older adults, were identified as at risk with respect to food access. Interviewees and community forum participants reported that significant numbers of people struggled to buy fresh produce and other nutritional foods, and referred to food insecurity and food scarcity as major contributors to obesity and chronic disease.

Figure 6: Demographic and Socio-economic Characteristics of Winchester Hospital Primary Service Area

Statistically Higher than State and County⁵⁸
 Statistically higher than State
 Statistically higher than the County

	Indicators	Benchmarks		Service Area								
		State	Middlesex County	Medford	North Reading	Reading	Stoneham	Tewksbury	Wakefield	Wilmington	Winchester	Woburn
	Total Population	6,605,058	1,522,533	56,607	15,076	24,957	21,498	29,429	25,400	22,656	21,621	38,528
Gender	Male	48.4%	48.7%	47.7%	49.7%	48.1%	47.6%	48.1%	49.1%	49.2%	46.8%	49.0%
	Female	51.6%	51.3%	52.3%	50.3%	51.9%	52.4%	51.9%	50.9%	50.8%	53.2%	51.0%
Age	0-9 Years	11.3%	11.6%	8.8%	11.1%	12.7%	9.0%	10.9%	11.8%	14.4%	15.5%	10.8%
	10-19 Years	13.0%	12.4%	10.1%	14.3%	14.6%	11.4%	12.4%	10.6%	14.5%	14.8%	10.4%
	20-24 Years	7.2%	6.7%	9.6%	4.7%	4.2%	5.1%	5.0%	5.6%	4.2%	3.3%	4.7%
	25-64 Years	54.2%	56.1%	57.0%	56.7%	53.2%	56.0%	56.5%	63.3%	53.7%	50.3%	58.2%
	65+ Years	14.1%	13.4%	14.7%	13.3%	15.3%	18.4%	15.3%	14.4%	13.3%	16.4%	15.0%
	Population 18 years and older	78.7%	78.9%	84.7%	75.7%	74.8%	81.7%	78.6%	79.1%	73.7%	71.5%	80.0%
Race/ Ethnicity/ Foreign Born/ Language	Non-Hispanic White	75.7%	76.3%	77.3%	92.4%	91.3%	91.2%	91.7%	93.1%	90.9%	83.4%	83.7%
	Non-Hispanic Black	6.3%	4.4%	7.4%	0.6%	1.0%	0.8%	1.8%	0.4%	1.0%	0.9%	4.0%
	Hispanic	9.9%	6.8%	4.8%	1.9%	2.8%	3.1%	1.8%	1.8%	1.6%	1.9%	4.3%
	Non-Hispanic Asian	5.5%	9.7%	7.4%	3.9%	4.1%	3.1%	3.0%	4.0%	4.3%	11.6%	6.1%
	Foreign Born	15.0%	19.3%	20.9%	6.8%	7.5%	9.7%	6.9%	7.1%	7.0%	14.5%	15.1%
	Linguistically Isolated	21.9%	25.0%	27.1%	9.8%	9.6%	14.2%	9.1%	10.2%	8.5%	18.7%	19.6%
Education/ Income	High School Graduates	89.4%	92.1%	90.6%	96.6%	97.7%	93.5%	94.7%	94.9%	94.8%	97.1%	93.4%
	Living in Poverty	11.4%	8.1%	9.8%	4.8%	1.7%	4.4%	3.1%	4.1%	2.4%	3.4%	6.2%
	Renter Occupied Housing	37.3%	37.3%	42.2%	13.8%	18.9%	30.8%	13.7%	25.4%	12.3%	16.5%	39.6%
	House Poor (>35% of Income)	40.5%	36.5%	33.0%	53.2%	28.1%	43.3%	39.2%	27.6%	32.6%	46.7%	36.5%

⁵⁸ Data provided by the Massachusetts Department of Health through the MassCHIP resource is typically provided along with the 95% confidence interval for any given statistic. A confidence interval measures the probability that a population parameter will fall between two set values. Throughout our assessment, statistical significance is defined as two values with non-overlapping 95% confidence intervals.

Major Findings by the Leading Areas of Health-Related Need

At the core of the CHNA process is an understanding of access-to-care issues, the leading causes of illness and death, and the extent to which population segments and communities participate in certain risky behaviors. This information is critical to assessing health status, clarifying health-related disparities and identifying community health priorities. The assessment captured a wide range of quantitative data from federal, Commonwealth and local data sources, including from the U.S. Census Bureau and the Massachusetts Department of Public Health. Information was also compiled through the Winchester Hospital Community Health Survey, which augmented the data collected through the Massachusetts Department of Public Health and allowed for the identification of geographic “hotspots” and demographic/socio-economic population segments most at risk. Qualitative information gathered from the assessment’s interviews and community forums greatly informed this section by providing perceptions on the confounding and contributing factors of illness, health priorities, barriers to care, service gaps and possible strategic responses to the issues identified.

The following are key findings related to health insurance coverage and access to primary care, health risk factors, overall mortality, health care utilization, chronic disease, cancer, infectious disease, behavioral health (mental health and substance use), elder health, and maternal and child health.

Summary data tables/graphs are included below, along with a narrative review of the assessment’s qualitative findings. More expansive data tables and summaries of findings from the assessment’s interviews and forums are included in the WH CHNA data appendices.

Insurance Coverage and Usual Source of Primary Care (including medical, oral health and behavioral health services)

The extent to which a person has insurance that helps to pay for needed acute services, as well as access to a full continuum of high-quality, timely and accessible preventive and disease management or follow-up services, has shown to be critical to overall health and well-being. Access to a usual source of primary care is particularly important as it greatly impacts one’s ability to receive regular preventive, routine and urgent care, and chronic disease management services for those in need.⁵⁹

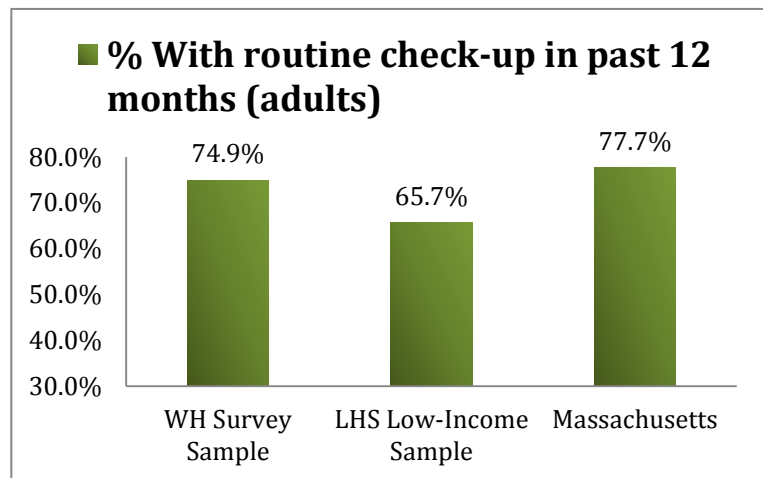
Eastern Massachusetts, including Middlesex County, has a robust health care system that provides comprehensive services spanning the health care continuum, including outreach and screening services, primary medical care, medical specialty care, hospital emergency and trauma services, inpatient care, and outpatient surgical and post-acute/long-term care services. There are no absolute gaps in any components of the system, except possibly in the area of behavioral and oral health.

⁵⁹ Institute of Medicine. Coverage Matters: Insurance and Health Care. September 2001. Accessed at: <http://www.nationalacademies.org/hmd/~media/Files/Report%20Files/2003/Coverage-Matters-Insurance-and-Health-Care/Uninsurance8pagerFinal.pdf>

Based on information gathered from interviews and community or provider forums, large proportions of the population in WH’s community benefits service area struggle to access behavioral health and oral health services. These barriers are partly due to shortages of service providers willing to accept the uninsured or certain types of health insurance, particularly Medicaid. Many residents also struggle to pay for services, particularly those who have to pay out of pocket for copays or pay for the full cost of care. While medical health insurance rates are high throughout Middlesex County and the Commonwealth, the proportion of the population with comprehensive oral health insurance is quite low. And although behavioral health services are typically covered by most health plans, the benefits are not always robust, and the copays can be high. Interviewees and forum participants noted particular gaps in behavioral health services for children and youths. According to the 2015 WH Community Health Survey:

- 3.2% of all respondents from WH’s service area were uninsured, compared to 8% of low-income respondents drawn from across Lahey Health System’s entire service area in Northeastern Massachusetts.⁶⁰
- 74.9% of all respondents from WH’s service area had seen a primary care provider in the previous 12 months, compared to only 65.7% of low-income respondents across the Lahey Health System’s service area.⁶¹
- 22.5% of all respondents from WH’s service area had had at least one hospital emergency department visit in the previous 12 months, compared to 29.1% of low-income respondents in the entire Lahey service area.⁶²
- 5.3% of respondents were uninsured for at least some period in the preceding 12 months, compared to a startling 30.2% among low-income respondents across the Lahey service area.⁶³

Figure 7: Percent with Routine Checkup in Past 12 Months, 2015 (Source: WH Community Health Survey, 2015)



⁶⁰ 2015 WH Community Health Survey. In order to ensure an appropriate, statistically sound sample size, all low income respondents from each of the surveys conducted by Lahey Health System’s three hospital partners were aggregated together.

⁶¹ 2015 WH Community Health Survey

⁶² 2015 WH Community Health Survey

⁶³ 2015 WH Community Health Survey. In order to ensure an appropriate, statistically sound sample size, all low-income respondents from each of the surveys conducted by Lahey Health System’s three hospital partners were aggregated.

In addition:

- Nearly one third (30.1%) of those living at 138% of the federal poverty level or below reported not getting needed dental care due to cost, and 1 in 5 (19.3%) were not able to fill a needed drug prescription due to cost.⁶⁴
- The largest single group of uninsured residents is undocumented immigrants, followed by those struggling with administrative and policy barriers related to retaining coverage.

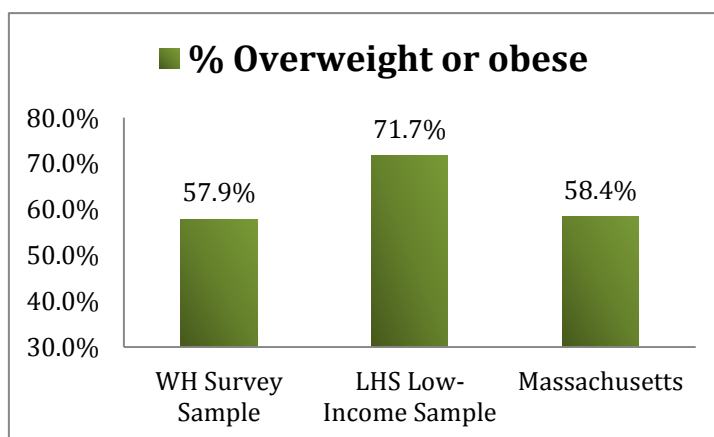
While these findings are generally positive, the data should not be interpreted to suggest that everyone in WH's service area receives the highest-quality services when and where they want them. In fact, despite these strong statistics and the overall success of the Commonwealth's health reform efforts, data captured for this assessment showed that substantial segments of the population – particularly those with low income, racial/ethnic minorities and older adults – faced significant barriers to care and struggled to access medical, oral health and behavioral health services due to lack of insurance, cost, transportation, cultural/linguistic barriers, and shortages of providers willing to serve Medicaid-insured or low-income, uninsured patients. More importantly, these challenges often lead to poor health status and disparities in health outcomes.

Health Risk Factors

There is a growing appreciation for the effects that certain health risk factors – such as obesity, lack of physical exercise, poor nutrition, tobacco use and alcohol abuse – have on health status, the burden of physical chronic conditions and cancer, as well as on mental health and broader substance use problems. A discussion and review of available data and information drawn from quantitative and qualitative sources from this assessment is provided below.

- **Overweight/Obesity.** Over the past two decades, obesity rates in the United States have doubled for adults and tripled for children.^{65,66} Overall, these trends have spanned all segments of the population, regardless of age, sex, race, ethnicity, education, income or geographic region. While some segments have struggled more than others, no segment has been completely unaffected. In aggregate the data shows that

Figure 8: Percent Overweight or Obese, 2015
(Source: WH Community Health Survey, 2015)



⁶⁴ Center for Health Information and Analysis. Findings from the 2014 Massachusetts Health Insurance Survey. 2015. Accessed at: <http://www.chiamass.gov/assets/docs/r/pubs/15/MHIS-Report.pdf>

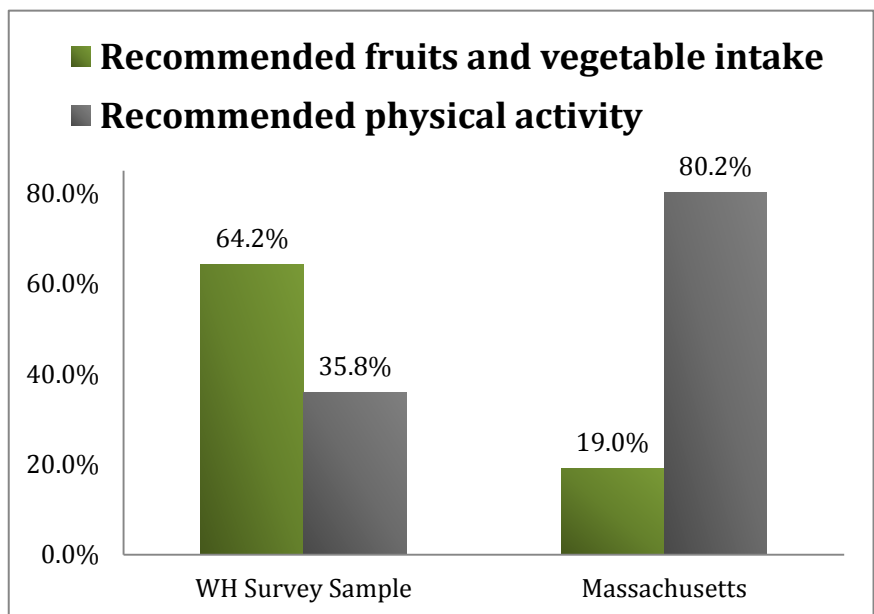
⁶⁵ Fryar DC, Carroll MD, Ogden CL. [Prevalence of overweight, obesity, and extreme obesity among adults: United States, 1960-1962 through 2011-2012](#). National Center for Health Statistics Health E-Stat. 2014. Ogden CL. [Childhood Obesity in the United States: The Magnitude of the Problem](#). PowerPoint.

⁶⁶ The State of Obesity. Obesity Rates and Trends Overview. Accessed July 19, 2016. Accessed from: <http://stateofobesity.org/obesity-rates-trends-overview/>

residents in WH’s community benefits service area fare very similarly to residents of the Commonwealth overall with respect to percentage of the population that is either overweight or obese. However, this does not mean that the cities and towns in the service area should not be concerned about this issue, as the rates for those who are in low-income brackets are much higher than Commonwealth benchmarks.

- More than half of Massachusetts adults (18+) (58%) are either overweight or obese, and nearly one-quarter of children and youth (0-18) (23%) are either obese or overweight.⁶⁷
 - Based on responses from the WH Community Health Survey, the percentage of adults (18+) reporting in either obese or overweight categories mirrors the figure for the Commonwealth (58%). Those with household incomes below 200% of the federal poverty guideline are much more likely to be overweight or obese, with 72% of low-income individuals reporting as either overweight or obese.⁶⁸
 - Data for children and youth from the MA Youth Risk Behavior Surveillance System (YRBSS) was not available for Middlesex County, but, anecdotally, the JSI Project Team learned through interviews and the community forums that overweight/obesity was a major health issue.⁶⁹
- **Physical Fitness and Nutrition:** Lack of physical fitness and poor nutrition are among the leading risk factors associated with obesity and chronic health issues, such as heart disease, hypertension, diabetes, cancer and depression. Adequate nutrition helps prevent disease and is essential for the healthy growth and development of children and adolescents. Overall fitness and the extent to which people are physically active reduce the risk for many chronic conditions and are linked to good emotional health.
 - Approximately 1 in 5 adults (18+) (19%) ate the recommended five servings of fruits and vegetables per day,

Figure 9: Recommended Fruits and Vegetables and Physical Activity (Source: WH Community Health Survey, 2015)



⁶⁷ 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS). 2013 Youth Risk Behavior Survey (YRBS) for 9th-12th-graders

⁶⁸ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

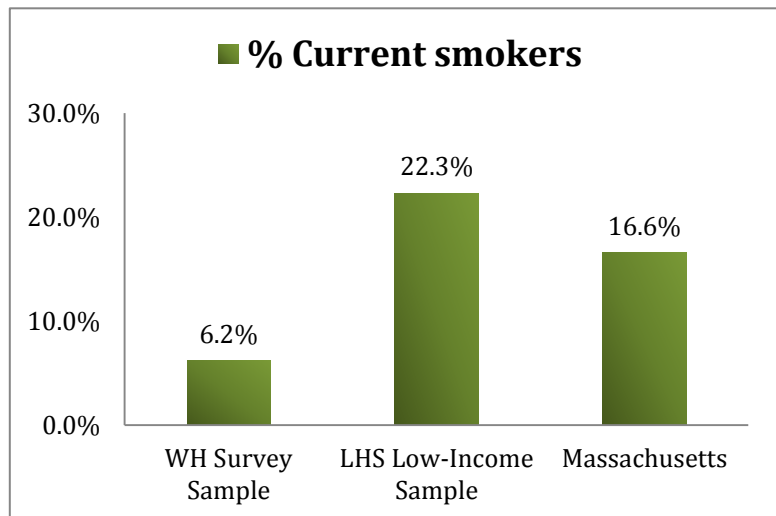
⁶⁹ 2015 WH Key Informant Interviews and Community and Provider Forums

and roughly the same proportion (20%) reported getting no physical activity in the preceding 30 days.⁷⁰ According to data collected through the WH Community Health Survey, adults in WH's service area fare much better than the adults Commonwealth-wide with respect to eating the recommended number of servings of fruits and vegetables, but a considerably larger percentage of respondents reported not getting any physical activity other than that related to their job. Once again, it is important to note that low-income survey respondents fared considerably worse than respondents overall.

- According to the WH Community Health Survey, only 36% of respondents overall did not eat at least five servings of fruits and vegetables per day, compared to 43% of low-income respondents.⁷¹
- More than 50% of survey respondents did not have adequate physical activity, according to Centers for Disease Control and Prevention guidelines, other than activity related to their jobs.⁷²
- **Tobacco Use:** Tobacco use is the single most preventable cause of death and disease in the United States. Each year, approximately 443,000 Americans die from tobacco-related illnesses. For every person who dies from tobacco use, 20 more people suffer with at least one serious tobacco-related illness, such as chronic airway obstruction, heart disease, stroke or cancer.⁷³

Massachusetts and Middlesex County had lower rates of tobacco use than many geographies throughout the United States, but given that tobacco use is still the leading cause of illness and disease in the United States, it is important that work be done to lower these rates further.

Figure 10: Percent Current Smokers, 2015
(Source: WH Community Health Survey, 2015)



- According to the 2015 WH Community Health Survey, 6% of adult respondents (18+) reported as current cigarette smokers, compared to 22.3% of low-income respondents. Commonwealth-wide, 16.6% of adults reported as current cigarette smokers.⁷⁴

⁷⁰ 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

⁷¹ 2015 WH Community Health Survey

⁷² 2015 WH Community Health Survey

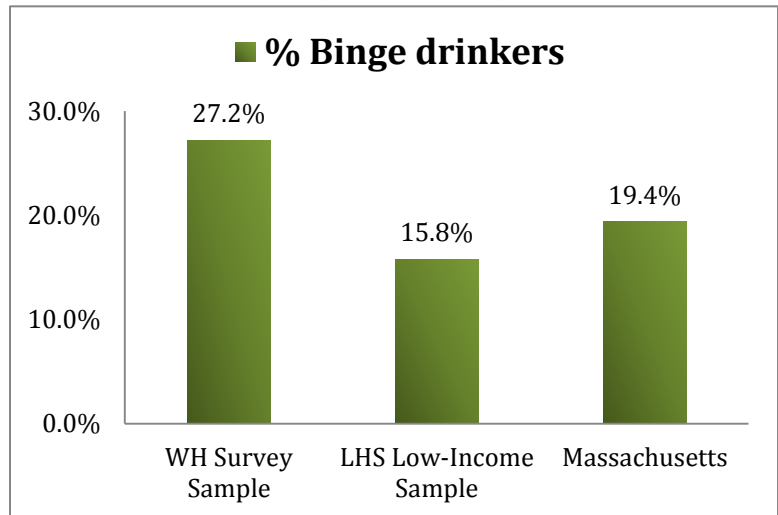
⁷³ Office of Disease Prevention and Health Promotion. Tobacco Use. Accessed at:

<http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=41#five>. Accessed on: July 20, 2016.

⁷⁴ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

- **Alcohol Abuse:** Risky behaviors related to alcohol are strongly correlated with chronic medical and mental health issues. Alcohol abuse raises the risk of developing chronic illnesses and increases the severity of illnesses once they emerge.
 - According to the 2015 WH Community Health Survey, 10.5% of adult respondents reported as heavy drinkers, defined as more than 60 drinks a month for men and 30 drinks a month for women, compared to only 8% of adults in the Commonwealth overall.⁷⁵
 - Similarly, 27.2% of respondents reported “binge drinking” – more than five alcoholic drinks at any one sitting for men and more than four drinks for women – compared to only 19.4% for Commonwealth residents overall.⁷⁶

Figure 11: Percent Binge Drinkers, 2015
(Source: WH Community Health Survey, 2015)



This finding was confirmed by key informant interviews and participants in the community forums, as a major theme from the qualitative information was the impact and burden of substance use, particularly alcohol and opioids, on the service area’s population. A majority of the key informants who were part of this assessment cited alcohol abuse as a major health concern for all segments of the population.⁷⁷

Mortality and Premature Mortality

In 2012, the life expectancy for a resident in the Commonwealth of Massachusetts was 81 years. In 1950, it was 70 years, and in 1900 it was 45 years.⁷⁸ This change is dramatic and is due largely to improvements in the ability to prevent maternal/child deaths during pregnancy and manage infectious diseases, such as influenza. In 1900, cancer was the known cause of death in only 4%-5% of deaths; today nearly 25% of all deaths can be attributed to cancer. See Figure 12 below.

Since 1950, there have been major improvements in the ability to prevent premature death due to heart disease, stroke and even cancer. However, there is still a great deal of work to do in this area, as these diseases are still the top three causes of premature death. Even if city- or town-level rates of illness are not higher than the county, Commonwealth or national benchmarks, it is still important

⁷⁵ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

⁷⁶ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

⁷⁷ 2015 WH Key Informant Interviews and Community and Provider Forums

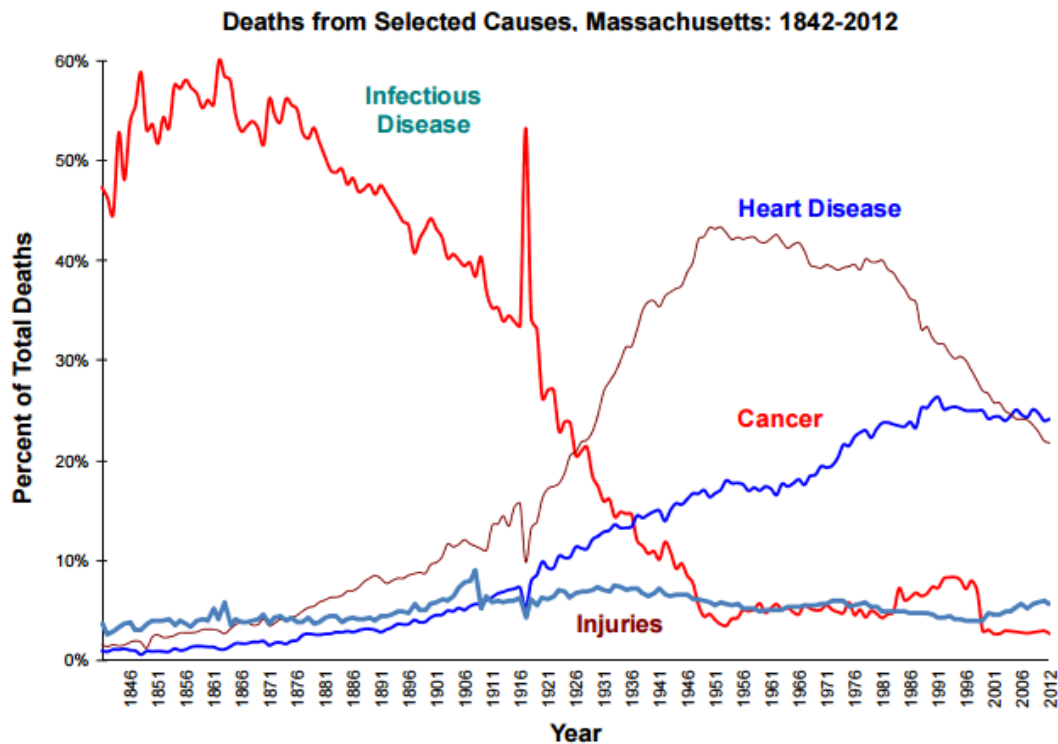
⁷⁸ Massachusetts Department of Public Health. *Massachusetts Deaths 2012: Data Brief*. January 2015. <http://www.mass.gov/eohhs/docs/dph/research-epi/death-data/death-databrief-2012.pdf>, Accessed 5/11/2016

that WH and its community health partners address these issues if they are to improve health status and well-being.

According to data from the Massachusetts Department of Public Health, in 2012 cancer, cardiovascular disease (heart disease), cerebrovascular disease (stroke) and chronic lower respiratory disease (COPD) were the leading causes of death for the service area. Other leading causes include diabetes, influenza/pneumonia, opioid-related issues, homicide, suicide and motor vehicle accidents.

As discussed above, there is a correlation between income and where one lives on the one hand and

Figure 12: Deaths from Selected Causes in Massachusetts, 1842–2012



life expectancy, death and overall health status on the other. According to a study published in April 2016 in the *Journal of the American Medical Association*, Middlesex County residents living in households earning less than \$100,000 per year are expected to die about seven years before their wealthier counterparts. That’s roughly equivalent to the difference in life expectancy between an average man in the United States and one in Egypt. The report underscores the role of geography and wealth in attaining longevity. The essential point is that those who live in communities with a large proportion of low-income residents have a lower health status and a shorter life expectancy.⁷⁹

⁷⁹ The Health Inequality Project. How can we reduce disparities in health? Accessed at <https://healthinequality.org>. Accessed 6/22/16

Table 13: Leading Causes of Death in Massachusetts and the United States, 2012

(Source: Massachusetts Deaths 2012: Data Brief. Boston, MA: Office of Data Management and Outcomes Assessment, Massachusetts Department of Public Health. January 2015. <http://www.mass.gov/eohhs/docs/dph/research-epi/death-data/death-databrief-2012.pdf>)

US Leading Cause of Death	Death Rate in MA	Total Deaths in MA	State Rank	US Rate	US Ranking
Cancer	159.6	12,858	31	163.2	2
Heart Disease	141.5	12,023	43	169.8	1
Accidents	32.5	2,393	45	39.4	4
Chronic Lower Respiratory Diseases	31.7	2,572	46	42.1	3
Stroke	27.7	2,354	47	36.2	5
Alzheimer's Disease	19.4	1,699	38	23.5	6
Influenza/Pneumonia	18	1,551	16	15.9	8
Kidney Disease	15.1	1,261	18	13.2	9
Diabetes	14.1	1,142	50	21.2	7
Suicide	8.2	572	48	12.6	10

All of these leading causes of death, individually and collectively, have a major impact on people living in the service area, but cancer, cardiovascular disease (heart disease), cerebrovascular disease (stroke), chronic lower respiratory disease (COPD) and diabetes are the most important for WH to consider as they are the most prevalent conditions and are, to a large extent, preventable. All of these chronic conditions also share the health risk factors discussed above: obesity/overweight, lack of physical exercise, poor nutrition, tobacco use and alcohol abuse.

Throughout the United States, including Massachusetts, there were major health disparities with respect to all of these conditions among low-income, racial/ethnic minority and other subgroups. Rates of illness and death vary by condition, but overall, non-Hispanic, white populations are less likely to have chronic health conditions than are low-income segments and most racial/ethnic minority segments. This puts a disproportionate burden on communities with a high proportion of low-income and racial/ethnic populations. In WH's service area, Medford and Woburn were the communities with the greatest proportion of low-income and racial/ethnic minority or foreign-born populations.

The leading causes of premature death were similar to those for mortality overall in the Commonwealth, but there are important differences. The first and second leading causes of premature death in Massachusetts in 2012 were cancer and heart disease. Unintentional injuries, respiratory disease and diabetes are ranked third, fourth and fifth, respectively, and each had a considerable impact on the premature death rate overall. With respect to the CHNA, the more

relevant variable is premature death⁸⁰ and the prevention of disease. Putting greater emphasis on premature death, rather than overall mortality, supports the intention of the community benefits program to improve health status and to focus attention on the morbidity and mortality that can be prevented. None of the cities and towns in WH's primary service area had a statistically higher rate of premature death than the Commonwealth rate of 276 per 100,000.⁸¹

Health Care Utilization

Increasing health care costs combined with poor health outcomes have encouraged a close review of the utilization of health care services. At the core of recent health care reform efforts in Massachusetts and throughout the nation is the idea of promoting a focus on prevention and the reduction of health care utilization rather than the treatment of disease. Hospital

community benefits programs are geared toward supporting preventive services; strengthening community health, social services and public health programs; and ensuring that the population has access to high-quality primary care services, including primary medical care, behavioral health and oral health services.

With respect to health care utilization, there has been a substantial focus on strategies to reduce costly hospital emergency department and inpatient care utilization, particularly service utilization that is preventable or avoidable with proper education and screening and timely primary care and outpatient services. The federal Agency for Healthcare Research and Quality (AHRQ) has identified a series of measures that apply hospital discharge codes designed to identify when people are seen in the hospital emergency department or inpatient setting for conditions that are preventable or avoidable. These measures are called Preventable Quality Indicators (PQIs), and when the rates of these specific hospital discharge codes are high, it suggests that consumers need to be more engaged in or have better access to preventive, primary care and care management services.

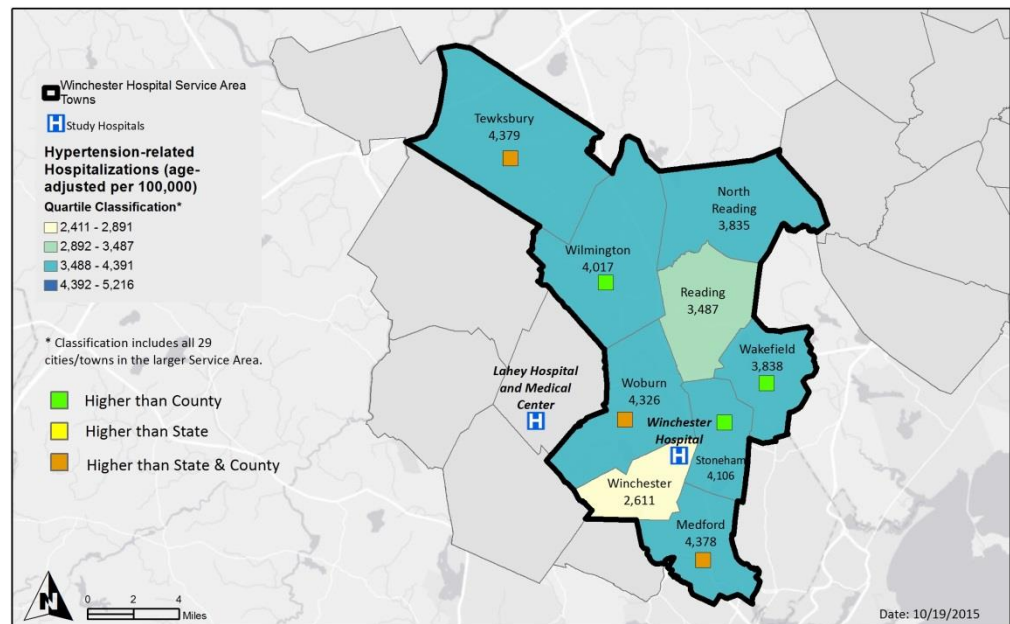


Figure 14: Hypertension Hospitalizations (Per 100,000 Population)
 (Source: Massachusetts Department of Public Health, MassCHIP; 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS))

⁸⁰ Premature deaths are deaths that occur before a person reaches an expected age — for instance, age 75. Many of these deaths are considered preventable.

⁸¹ 2009-2012 Massachusetts Vital Records Mortality

- Of the five PQI measures reported by MDPH for all towns in Massachusetts, several towns reported consistently higher rates, compared to Commonwealth and county levels, of congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD) and asthma admissions in patients older than 20.⁸²
- Towns reporting significantly higher rates on these indicators were Medford (asthma, CHF, hypertension, bacterial pneumonia), Stoneham (CHF and bacterial pneumonia) and Woburn (asthma, CHF, bacterial pneumonia and COPD).⁸³

More generally, MDPH reports data on hospital emergency department discharges. Across the WH service area, the most common disease-specific measures that were statistically higher than average involved mental health, substance use, diabetes, hypertension and heart disease. Service-area towns with consistently higher rates across these measures than Commonwealth rates were Medford, Stoneham and Woburn.

Chronic Disease

Throughout the United States, chronic diseases such as heart disease, stroke, cancer, respiratory diseases and diabetes are responsible for approximately 7 of 10 deaths each year, and treating people with chronic diseases accounts for 86% of our nation's health care costs. Half of all American adults (18+) have at least one chronic condition, and almost 1 in 3 have multiple chronic conditions.⁸⁴ Perhaps most significantly, despite their high prevalence and dramatic impact, chronic diseases are largely preventable,

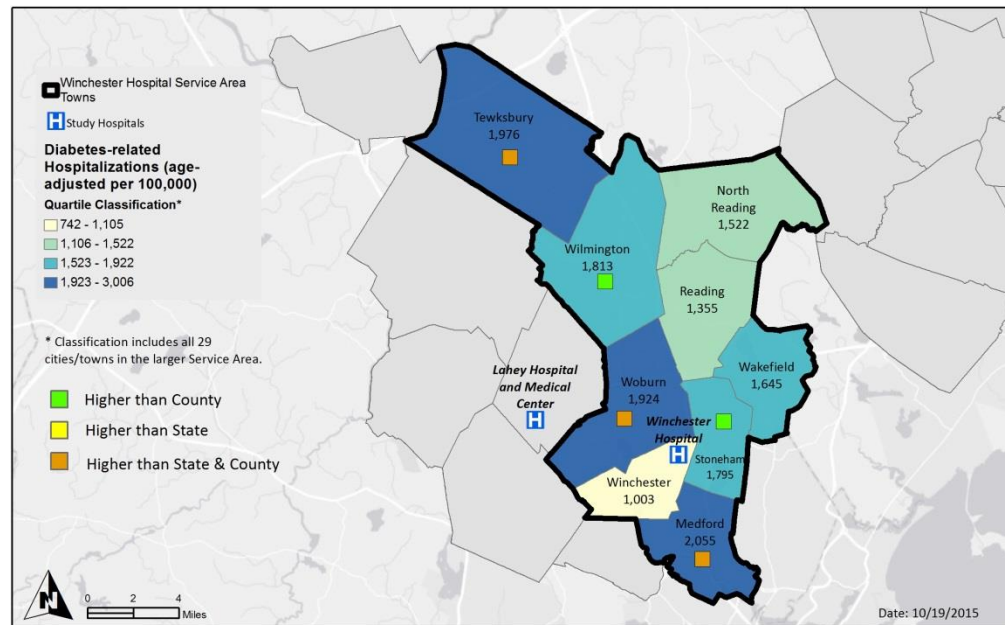


Figure 15: Diabetes-Related Hospitalizations (Per 100,000 Population)
 (Source: Massachusetts Department of Public Health, MassCHIP; 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS))

⁸² 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS)

⁸³ 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS)

⁸⁴ A chronic condition is a human health condition or disease that lasts a year or more and requires ongoing medical attention or that limits activities of daily living. Centers for Disease Control and Prevention. Chronic Disease Prevention and Health Promotion. Accessed at: <http://www.cdc.gov/chronicdisease/>. Accessed on July 19, 2016.

which underscores the need to focus on the health risk factors, primary care engagement and evidence-based chronic disease management.

Many of the cities and towns in WH's service area have chronic disease prevalence, hospitalization and mortality rates that are higher than the rates for the Commonwealth overall. Chronic health conditions such as asthma, cardiovascular disease, cerebrovascular disease (stroke), chronic lower respiratory disease (most notably COPD), diabetes, heart failure and hypertension are the most common chronic conditions.

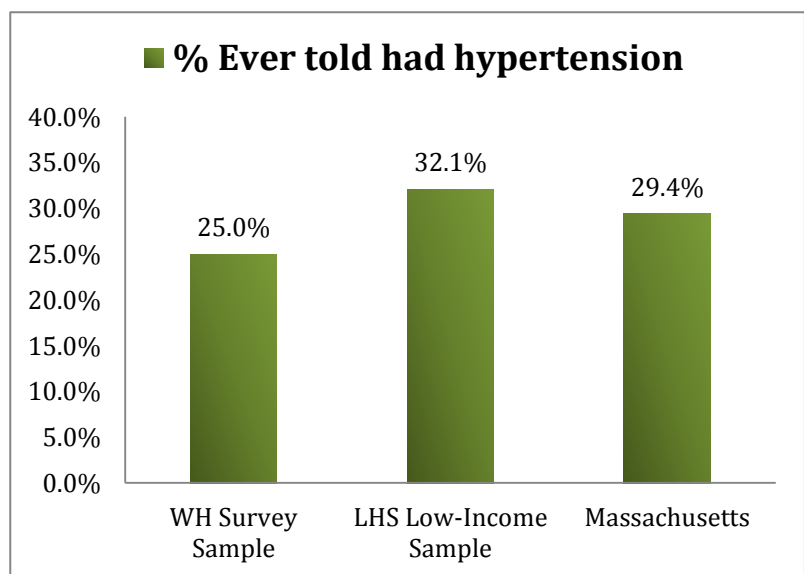
Even in towns where these rates are not higher than Commonwealth averages, qualitative interviews and forums indicated that these diseases were of utmost concern to community members, local health officials and service providers. These interviewees and forum participants also discussed the disparities that exist for at-risk subpopulations such as members of low-income households, racially or ethnically diverse populations, and older adults, all of whom are more likely to have one or more of these conditions.

Data from the WH Community Health Survey confirms that these chronic physical health conditions are a substantial issue. However, it is important to note that the prevalence rates for the overall respondent population are generally not higher for the leading conditions than the rates for the Commonwealth overall, according to comparison data from the Massachusetts Department of Public Health, Behavioral Risk Factor Survey System collected in 2012-2013.

- **Chronic Disease “Hotspots.”** Medford, Tewksbury and Woburn all reported higher rates of illness, hospitalization and mortality than the Commonwealth for two or more of these chronic conditions. Stoneham, Wilmington and Winchester had higher rates than the Commonwealth for at least one of the chronic conditions referenced above.⁸⁵

Figure 16: Percent Ever Been Told Had Hypertension, 2015 (Source: WH Community Health Survey, 2015)

- **Diabetes.** Among WH Community Health Survey respondents, 4.6% reported that they had ever been told they had diabetes, compared to 8.5% of adults 18+ in the Commonwealth overall. Among low-income respondents, 12.1% reported that they had been told they had diabetes.⁸⁶



⁸⁵ 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS). 2008-2012 Massachusetts Vital Records Mortality

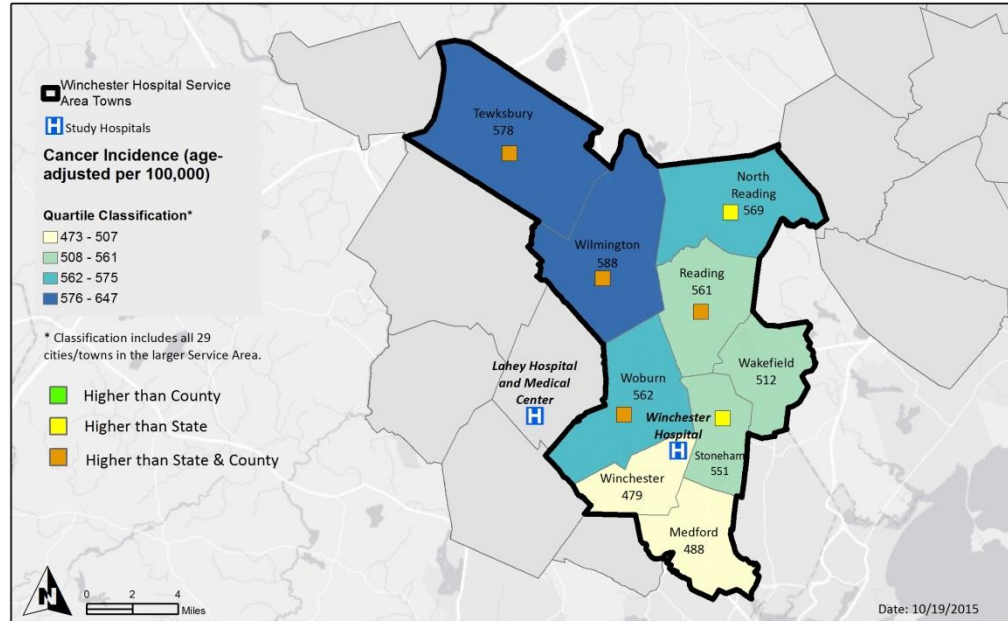
⁸⁶ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

- **Hypertension.** Twenty-five percent of respondents from the WH Community Health Survey reported ever being told they had hypertension compared to 29% for the Commonwealth overall. Among low-income respondents, 32% reported they had been told they had hypertension.⁸⁷
- **Asthma.** Sixteen percent of WH Community Health Survey respondents reported being told they had asthma, compared to 17% for the Commonwealth overall. The percentage for low-income respondents in this case was actually lower at 13%; however, low-income respondents were considerably more likely to be seen in the hospital emergency department for urgent care. For the entire survey sample, 11% of asthmatics had had an emergency department visit compared to 19% of low-income respondents.⁸⁸

Cancer

Cancer is the second leading cause of death in the United States and the leading cause of death in the Commonwealth. While experts have an idea of the risk factors and causal factors associated with cancer, more research is needed as there are still many unknowns. The majority of cancers occur in people who do not have any known risk factors. The major known risk factors for cancer are age, family history of cancer, smoking, overweight/obesity, excessive alcohol consumption, excessive exposure to the sun, unsafe sex, and exposure to fumes, secondhand cigarette smoke, and other airborne environmental and occupational pollutants. As with other health conditions, there are major disparities in outcomes and death rates across all forms of cancer, which are directly associated

Figure 17: Cancer Incidence (All Cancers) (Per 100,000 population)
 (Source: Massachusetts Cancer Registry (2006-2010))



⁸⁷ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

⁸⁸ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

with race, ethnicity, income and whether one has comprehensive medical health insurance coverage. In 2015, nationally, 163.2 people per 100,000 died of cancer, and in Massachusetts this figure was 159.6 deaths per 100,000.⁸⁹

- **All Cancer.** Four of the eight towns in WH's primary service area (Reading, Tewksbury, Wilmington and Woburn) reported higher cancer incidence rates (all cancer types) than those for the Commonwealth (509 per 100,000 population) and Middlesex County (510). The highest rate per 100,000 population was in Wilmington (588), followed by Tewksbury (578), Woburn (562) and Reading (561).⁹⁰

Cancer. Of all respondents to WH's Community Health Survey, 11.8% reported that they had ever been told they had cancer, compared to 11.1% for residents of the Commonwealth; 17% of low-income respondents had ever been told they had cancer.⁹¹

- **Most Common Cancer.** Prostate cancer was the most common cancer among men and breast cancer among women, followed by lung cancer in men and women.⁹²
- **Mammography Screening.** According to the WH Community Health Survey, the percentage of women 40+ who had a mammography screening in the preceding two years was slightly lower in WH's service area (84%) than in the Commonwealth overall (85%).⁹³

Behavioral Health

Mental illness and substance use have a profound impact on the health of people living throughout the United States. Data from the Centers for Disease Control and Prevention suggests that approximately 1 in 4 (25%) adults in the United States has a mental health disorder,⁹⁴ and an estimated 22 million Americans struggle with drug or alcohol problems.⁹⁵ Depression, anxiety and alcohol abuse are directly associated with chronic disease, and a high proportion of those living with these issues also have a chronic medical condition. The impact of mental health and substance use on the residents of WH's service area and in Middlesex County overall is particularly profound. There is ample quantitative and qualitative information to show this impact.

With respect to substance use, according to 2008-2012 data from the MDPH, several cities/towns had statistically higher rates of hospital inpatient and emergency department utilization per 100,000 population for both mental health- and substance use-related conditions. More specifically:

⁸⁹ Centers for Disease Control and Prevention. Stats for the State of Massachusetts. Accessed at: http://www.cdc.gov/nchs/pressroom/states/MA_2015.pdf

⁹⁰ 2007-2011 Massachusetts Cancer Registry

⁹¹ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

⁹² 2007-2011 Massachusetts Cancer Registry

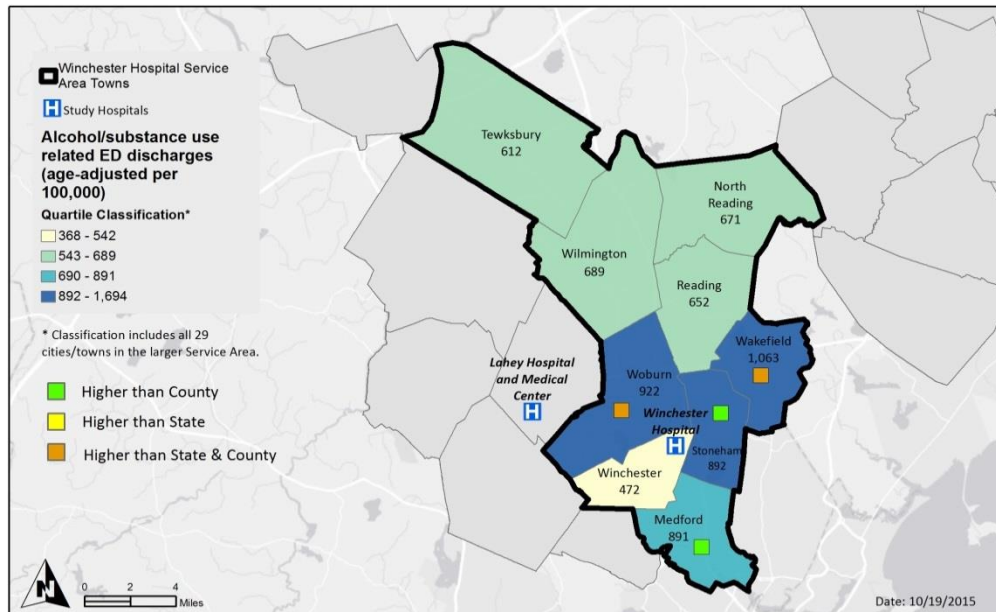
⁹³ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

⁹⁴ National Institute of Mental Health. Statistics. Accessed at

<http://www.nimh.nih.gov/health/publications/the-numbers-count-mental-disorders-in-america/index.shtml>. Accessed 7/19/2016

⁹⁵ Office of Disease Prevention and Health Promotion. HealthyPeople.gov. Substance Abuse. Accessed at <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=40>. Accessed on 7/19/2016

Figure 18: Alcohol/Substance Abuse Emergency Department Discharges (Per 100,000 Population) (Source: Massachusetts Department of Public Health, MassCHIP; 2008-2012 Massachusetts Hospital Inpatient Discharges)



- **Opioid Overdoses.** Middlesex County experienced more than a 200% increase in opioid overdose deaths between 2001 and 2014. Specifically, in 2001, 76 deaths were reported due to opioid abuse in Middlesex County. By 2013 this number had risen to 147, and between 2013 and 2014 the figure rose to 257 deaths.⁹⁶
- **Opioid-Related ED Visits.** Startlingly, every city/town other than Winchester had higher rates of opioid-related emergency department visits per 100,000 population than the Commonwealth (260) or Middlesex County (227), with Wakefield posting the highest rate at 518 visits per 100,000, followed by Stoneham (398), Wilmington (384), Tewksbury (372), North Reading (369), Medford (355), Reading (333) and Woburn (332).⁹⁷
- **Alcohol- or Other Substance Abuse-Related ED Visits:** Wakefield (1,063) and Woburn (922) had rates of alcohol- or other substance abuse-related emergency department visits per 100,000 population that were significantly higher than the rates for Middlesex County (714) and the Commonwealth overall (859).⁹⁸
- **Alcohol Use.** According to the WH Community Health Survey, approximately 10.5% of adults reported as heavy drinkers, compared to approximately 8% for the Commonwealth overall.⁹⁹

⁹⁶ Massachusetts Department of Public Health. Data Brief: Fatal Opioid-related Overdoses among Massachusetts Residents. Accessed at: <http://www.mass.gov/eohhs/docs/dph/quality/drugcontrol/county-level-pmp/data-brief-aug-2015-overdose-county.pdf>

⁹⁷ 2008-2012 Massachusetts Hospital Emergency Visit Discharges

⁹⁸ 2008-2012 Massachusetts Hospital Emergency Visit Discharges

⁹⁹ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

- **Binge Drinking.** According to the WH Community Health Survey, 27.2% of respondents reported “binge drinking” – more than five alcoholic drinks at any one sitting for men and more than four drinks for women – compared to only 15.8% for low-income respondents and 19.4% for Commonwealth residents overall.¹⁰⁰
- **Poor Mental Health.** According to the 2015 WH Community Health Survey, approximately 7% of adult respondents (18+) reported as being in poor mental or emotional health more than 15 days per month, compared to approximately 10% for low-income individuals. Commonwealth-wide, 11.2% of adults reported as being consistently in poor mental or emotional health.¹⁰¹
- **Mental Health-Related Hospitalizations.** Only Medford (4,030) had higher hospitalization rates for all mental health-related disorders per 100,000 population than the Commonwealth overall (3,840) and Middlesex County (3,266).¹⁰²
- **Mental Health-Related ED Visits.** With respect to mental health-related emergency department visits, only Medford (5,480) and Wakefield (5,273) had rates per 100,000 population that were higher than the rates for Middlesex County (4,074) and the Commonwealth overall (4,990).¹⁰³

There was an overwhelming sentiment across all community forums that mental health and substance use issues were two of the major health issues facing the community. The clear sentiment was that these issues impacted all segments of the population from children and youth to young and middle-aged adults to elders.

Interviewees and meeting participants discussed the stresses that youth face related to family, school and their social lives with peers. These stresses often lead to depression, low self-esteem and isolation, as well as substance use, risky sexual behaviors and, in extreme cases, suicide. A number of stakeholders and forum participants also referenced ADHD, autism and developmental delays in children and youth.

With respect to adults and older adults, the issues are similar in many ways. Stakeholders and forum participants cited depression, anxiety and stress, often coupled with isolation, particularly in older adults. In older adults, mental health issues are often exacerbated by lack of family/caregiver support, lack of mobility and physical health conditions.

These issues have a major impact on a small but very-high-need group of individuals and families. Community forum participants and interviewees cited substantial gaps in behavioral health services and family/child support services, particularly for low-income individuals and families. Stakeholders advocated strongly for expansion of mental health services, particularly care/case management services, as well as other supportive services that this population needed to manage their conditions and improve their health status and overall well-being.¹⁰⁴

¹⁰⁰ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

¹⁰¹ 2015 WH Community Health Survey. 2012-2013 Behavioral Risk Factor Surveillance System (BRFSS)

¹⁰² 2008-2012 Massachusetts Hospital Inpatient Discharges (UHDDS)

¹⁰³ 2008-2012 Massachusetts Hospital Emergency Visit Discharges

¹⁰⁴ 2015 WH Key Informant Interviews and Community and Provider Forums

Elder Health

In the United States, in the Commonwealth and in Middlesex County, older adults are among the fastest-growing age groups. The first baby boomers (adults born between 1946 and 1964) turned 65 in 2011, and over the next 20 years these baby boomers will gradually enter the older adult cohort.

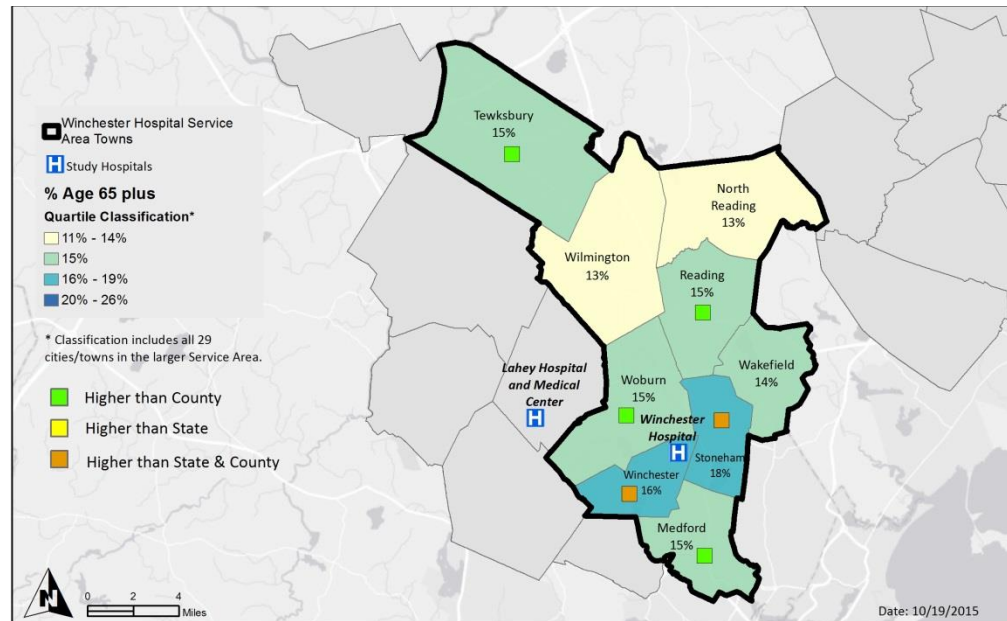
Older adults are much more likely to

develop chronic illnesses and related disabilities such as heart disease, hypertension and diabetes as well as congestive heart failure, depression, anxiety, Alzheimer's, Parkinson's disease and dementia. The CDC and the Healthy People 2020 Initiative estimate that, by 2030, 37 million people nationwide (60% of the older adult population 65+) will manage more than one chronic medical condition. Many experience hospitalizations, nursing home admissions and low-quality care. They may also lose their ability to live independently at home. Chronic conditions are the leading cause of death among older adults.¹⁰⁵

According to qualitative information gathered through interviews and community forums, elder health is one of the highest priorities for the WH service area. Chronic disease, depression, isolation and fragmentation of services were identified as some of the leading issues facing the area's senior population. Demographically, two of the eight cities/towns in WH's primary service area (Wilmington and North Reading) had a higher percentage of older adults (65+) compared to the Commonwealth overall.¹⁰⁶

When considering elder health, it is important to understand that rates of chronic physical disease by age are much higher for elders 65+ compared to rates for the adult population overall. The older people are, the more likely they are to have one or more chronic conditions. Older adults commonly have two to three or more chronic health conditions.

Figure 19: Percent Older Adults (65 Years Old or Older)
(Source: US Census Bureau American Community Survey (ACS), 2009-2013)

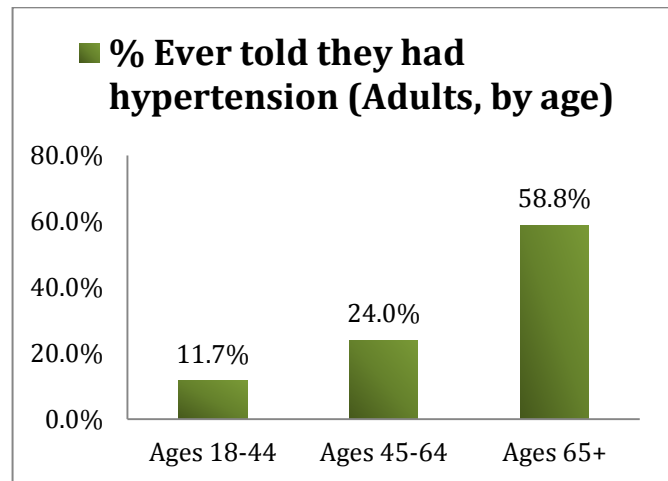


¹⁰⁵ Office of Disease Prevention and Health Promotion. HealthyPeople.gov. Older Adults. Accessed at <https://www.healthypeople.gov/2020/topics-objectives/topic/older-adults#two>. Accessed on 7/19/2016

¹⁰⁶ 2009-2013 US Census Bureau American Community Survey (ACS)

- **Hypertension.** According to the WH Community Health Survey, 58.7% of older adult respondents 65+ had ever been told they have hypertension, compared to only 24.8% of survey respondents overall.¹⁰⁷
- **High Cholesterol.** Similarly, of the respondents 65+ who had ever had their blood cholesterol levels checked, 48.9% had ever been told their blood cholesterol levels were high, compared to 32.1% for survey respondents overall.¹⁰⁸
- **Cancer.** With respect to cancer, 33.4% of older adults 65+ had ever been told they had cancer, compared to 11.8% for survey respondents overall.¹⁰⁹

Figure 20: Percent Ever Been Told Had Hypertension by Age, 2015
(Source: WH Community Health Survey, 2015)



As some of the highest utilizers of health care services and specialty care, seniors are more at risk of being affected by gaps in the health care infrastructure.

- **Specialty Care Utilization.** According to the WH Community Health Survey, 70.6% of older adults (65+) reported seeking specialty care within the preceding year, compared to 56.8% of all respondents.¹¹⁰
- **Care Coordination and Fragmentation of Services.** While clinical integration and care coordination efforts have made great strides, fragmentation of care persists as a serious issue affecting seniors in particular. Older adults in the WH service area may find themselves seeing a variety of specialty care doctors, following entirely separate care plans, and attempting to fill and manage multiple prescription drugs without any coordinated direction or support.

While social determinants of health affect all populations, community and organizational experts expressed concern that seniors may feel these effects more acutely. Many older adults live on fixed incomes with limited funds for medical expenses, leaving them less able to afford the high costs associated with negative health outcomes. Transportation was also consistently mentioned as a major barrier to senior well-being, as many elders no longer drive and find themselves with fewer transportation options in WH’s suburban setting.

Caregiver support was consistently brought up as a serious issue in community interviews, as many elders rely on family members or aides to manage their care. Stakeholders reported that, between navigating the health system, organizing appointments and medications, and making major medical

¹⁰⁷ 2015 WH Community Health Survey

¹⁰⁸ 2015 WH Community Health Survey

¹⁰⁹ 2015 WH Community Health Survey

¹¹⁰ 2015 WH Community Health Survey

decisions on behalf of their loved one, caregiver stress and burnout was one of the greatest threats to senior well-being.

Maternal and Child Health

Maternal and child issues are of critical importance to the overall health and well-being of a geographic region and are at the core of what it means to have a healthy, vibrant community. Infant mortality, childhood immunization, rates of teen pregnancy, rates of low birth weight, and rates of early, appropriate prenatal care for pregnant women are among the most critical indicators of maternal and child health. Data compiled on maternal and child health from the MDPH showed that communities in the WH service area were not worse off than the Commonwealth with respect to the leading maternal and child health indicators.¹¹¹

Youth and Adolescents

There is an unfortunate lack of data available on youth and adolescents at the county and town levels. Commonwealth-level data is available through the Massachusetts Youth Risk Behavior Survey, which provides critical information about substance use, mental health and stress, sexual activity, and other risky behaviors, but it does not provide a complete picture of youth/adolescent health and is not collected for all cities and towns in WH's service area.¹¹² Nonetheless, a number of areas of concern particular to youth were highlighted by the state-level data, and these same concerns were passionately confirmed by qualitative comments from the interviews and community forums:

- **Mental Health.** In 2013, 1 in 5 high-school youth (22%) in the Commonwealth felt sad or hopeless, and 6% had attempted suicide in the preceding year.¹¹³ Nearly 1 in 5 (17%) reported being bullied at school. Exposure to stressors may explain, in part, why certain groups suffer from poorer mental and physical health outcomes than others. Stress related to school, family issues or social situations with peers can have detrimental effects on mental health.
- **Overweight/Obesity, Physical Activity and Healthy Eating.** In 2013, 25% of high-school youth in the Commonwealth were overweight or obese. Just 15% reported eating at least five servings of fruits and vegetables each day, whereas a quarter (25%) reported watching at least three hours of TV on an average school day.¹¹⁴
- **Alcohol and Substance Use.** In 2013, almost a quarter (23%) of high-school youth in the Commonwealth reported that they had been offered, sold or given drugs in the preceding

¹¹¹ 2008-2012 Massachusetts Vital Records Natality and Infant Deaths

¹¹² Massachusetts Department of Elementary and Secondary Education & Massachusetts Department of Public Health. Health and Risk Behaviors of Massachusetts Youth, 2013.

<http://www.doe.mass.edu/cnp/hprograms/yrbs/2013report.pdf>

¹¹³ Massachusetts Department of Elementary and Secondary Education & Massachusetts Department of Public Health. Health and Risk Behaviors of Massachusetts Youth, 2013.

<http://www.doe.mass.edu/cnp/hprograms/yrbs/2013report.pdf>

¹¹⁴ Massachusetts Department of Elementary and Secondary Education & Massachusetts Department of Public Health. Health and Risk Behaviors of Massachusetts Youth, 2013.

<http://www.doe.mass.edu/cnp/hprograms/yrbs/2013report.pdf>

year. Meanwhile, 1 in 10 (11%) reported current cigarette use, and a third (36%) reported current alcohol use.¹¹⁵

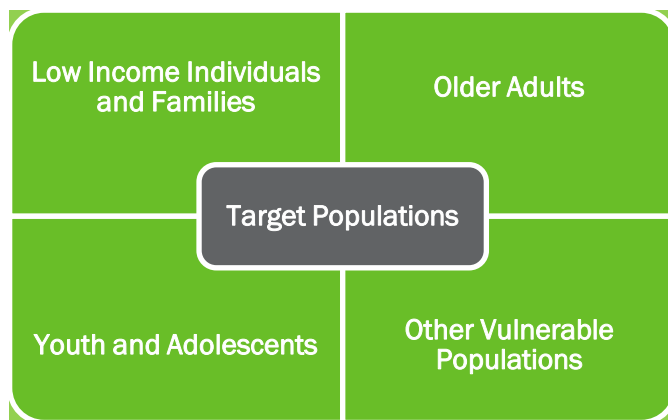
All of these issues were discussed passionately by educators, service providers and community members through the interviews and community forums, and in fact, they were the basis for one of a few dominant discussions at all the forums organized for this assessment.

Community Health Priorities and Target Populations

Once all of the assessment's findings were compiled, hospital and community stakeholders participated in a strategic planning process that integrated data findings from Phases I and II of the project, including information gathered from the interviews, community forums and the WH Community Health Survey. Participants engaged in a discussion of (1) the assessment's findings, (2) current community benefits program activities and (3) emerging strategic ideas that could be applied to refine their community benefits strategic response. From this meeting, community health priorities were identified, as were target populations and core strategies to achieve health improvements.

Following is a brief summary of the target populations and community health priorities that were identified with the support of community stakeholders. Also included below is a review of the goals of WH's Community Health Improvement Plan.

Figure 21: WH Community Benefits Target Population



Target Populations Most at Risk

WH, along with its health, public health, social services and community health partners, is committed to improving the health status and well-being of all residents living throughout its service area. WH's Community Health Improvement Plan (CHIP), which was developed as part of this process, provides a roadmap for how WH will address the issues identified by the needs assessment, including information on goals, objectives, target populations, specific activities, programs and services, measures to monitor impact, and key partners/collaborators.

After considerable discussion, there was broad agreement that WH's CHIP should target low-income populations (e.g., low-income individuals/families, older adults on fixed incomes, homeless), older adult populations (e.g., frail, isolated older adults), youth/adolescents (i.e., 13-18, those in middle school and high school), and other vulnerable populations (e.g., diverse racial/ethnic minority and

¹¹⁵ Massachusetts Department of Elementary and Secondary Education & Massachusetts Department of Public Health. Health and Risk Behaviors of Massachusetts Youth, 2013. <http://www.doe.mass.edu/cnp/hprograms/yrbs/2013report.pdf>

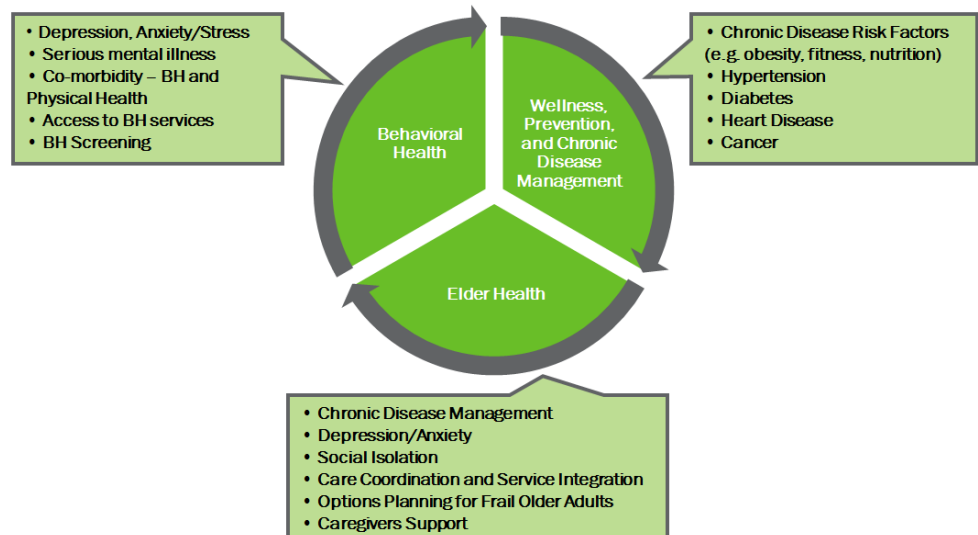
linguistically isolated populations). These demographic and socio-economic target populations have complex needs and face barriers to care and service gaps as well as other adverse social determinants of health that can put them at greater risk, limit their access to needed services and lead to disparities in health outcomes.

Community Health Priorities

WH's CHNA approach and process provided ample opportunity to vet the quantitative and qualitative data compiled during the assessment. WH has framed the community health needs in four priority areas, which together encompass the broad range of health issues and social determinants of health facing residents living in WH's service area. These three areas are (1) Wellness, Prevention and Chronic Disease Management; (2) Elder Health; and (3) Behavioral Health (mental health and substance use).

WH already has a robust CHIP to address all the identified issues. However, the CHNA has provided new guidance and invaluable insight on quantitative trends and community perceptions, which WH is using to inform and refine its efforts. The following are the core elements of WH's updated CHIP.

Figure 22: WH Community Health Priorities



WH's Summary Community Health Improvement Plan

Given the complex health issues in the community, WH has been strategic in identifying its priority areas in order to maximize the impact of its community benefits program and its work to improve the overall health and wellness of residents in its service area. The community health priorities identified above have guided WH's community health improvement planning process. The priorities are designed to promote community-based wellness and disease prevention, and ensure ongoing self-management of chronic diseases and behavioral health disorders. The goals and activities drawn from these priorities will make extensive use of existing partnerships, resources and programs to facilitate the greatest possible health impact.

The following goals address the existing issues affecting the target populations and the community health priorities identified above.

Priority Area 1: Wellness, Prevention and Chronic Disease Management

**Goal 1: Promote Wellness, Behavior Change and Engagement in Appropriate Care
(physical, mental, emotional and behavioral health)**

Goal 2: Increase Physical Activity and Healthy Eating

Goal 3: Identify Those with Chronic Conditions or at Risk; Screen and Refer for Counseling/Treatment

Priority Area 2: Elder Health

Goal 1: Promote General Health and Wellness

Goal 2: Decrease Depression and Social Isolation

Goal 3: Increase Physical Activity and Healthy Eating

Goal 4: Improve Access to Care

Goal 5: Improve Chronic Care Management

Goal 6: Reduce Falls

Goal 7: Enhance Caregiver Support and Reduce Family/Caregiver Stress

Goal 8: Reduce Economic and Food Insecurity

Priority Area 3: Behavioral Health (Mental Health and Substance Use)

**Goal 1: Promote Outreach, Education, Screening and Treatment for Those with Mental Health and
Substance Use Issues in Clinical and Community-Based Settings**

Goal 2: Increase Access to Mental Health and Substance se (MH/SA) Services

Priority Area 4: Partner Collaboration

Goal 1: Promote Collaboration with State and Local Public Health Offices and Community Partners