



The Wellbeing of Somerville Report

2017





Guiding Questions

The Wellbeing Report provides data about the health of our community's residents. This data and related information, based on life stages, is intended to spark conversation towards identifying priorities and developing a community health improvement plan. To facilitate this ongoing process, we encourage readers and the broader community to engage with the following questions as overarching considerations for the future of Somerville. As you read about each life stage, or walk down a Somerville street or strategize on the role you and/or your organization fulfill in the city, please be guided by the following:

- How can a community access current, reliable and timely data to inform dialogue, deliberation and planning to improve health and wellbeing for all?
- As the city's demographics evolve, how can services and resources adapt to meet these changes?
- How, as a community, can we plan, program and fund efforts to improve health outcomes across key life stages from prenatal to older adult in ways that recognize that many indicators are universal and interconnected across the lifespan?
- How does Somerville equitably balance the varied needs across all ages and all backgrounds of a diverse population?
- What are opportunities to actively build individual, family and community resiliency and optimism?
- What is YOUR contribution to ensuring that Somerville's environment is a healthy and welcoming place to live, learn, work, play, raise a family and age?

Welcome Readers!

You are invited into a wealth of data and information on the following pages. Please take a moment to scan the Guiding Questions to the left to help frame your exploration. To better understand the report, take a moment to read the Introduction and User Guide prior to diving in.

The core of the report brings together data and research related to health and social determinants throughout the life cycle, from before birth to end of life. Each of the life stage chapters ends with a page of recommendations to stimulate community dialogue and action to improve the health of residents of all ages.

For those with just a short amount of time, the back inside cover offers a brief snapshot of some of the lessons learned through the process of developing the report. The data summary provides a more in depth quick review of some of the relevant data points. For those interested in further exploration, the Appendices contain Data Sources, Citations and a Glossary.

Enjoy learning about Somerville's health and wellbeing!



Dear Somerville Residents,

The City of Somerville in partnership with Cambridge Health Alliance (CHA) is pleased to present you the *Wellbeing of Somerville Report 2017*. This report represents a multi-organizational effort to gather, analyze and summarize data on the health status and conditions that impact health for the residents of Somerville. This data will be used to inform planning, programming, and budgeting to improve current and future action that will have a positive impact on the health of Somerville residents.

City-specific data combined with additional data available through multiple sources inform this assessment. In the *Wellbeing of Somerville Report 2017* you will find data on key indicators, organized by the stages of life, exploring factors that influence life long health and wellbeing of individuals and the community — creating a snapshot of health in our community, in the current context. Our goal with this assessment is not to prioritize health issues — that activity is part of our key next steps.

Somerville has a long term commitment to using data to inform decision making and innovation. This approach has helped to create a highly desirable community in which to live, work, play, raise a family and grow old. Following the release of this report, we will collectively continue to engage community members and stakeholders through additional opportunities for feedback and comments.

Working from this assessment, the City of Somerville's Health & Human Services (HHS) Department will convene a Community Health Improvement Planning process, gathering community input to identify both priority areas for action as well as agencies and partners to collectively address these issues. This will be part of a multi-year process for HHS working toward national accreditation. These conversations will also inform the ongoing Population Health and Community Health Improvement work at CHA, as part of the commitment to improving the health of Somerville residents.

Public health is a shared responsibility. Improving the health of our community will not happen overnight, nor will it happen when incredible institutions work alone. We must work together, across many sectors to shift factors that influence health and wellbeing across the lifespan. Local health providers, City administrators, community agencies and concerned individuals in Somerville have a strong tradition of collaborative action to create a healthier community for all. We hope you find this report informative and that it inspires you to participate in the City's Community Health Improvement Planning Process and CHA's Population Health efforts in the future.

A handwritten signature in blue ink that appears to read "Joseph A. Curtatone".

Joseph A. Curtatone
Mayor
City of Somerville

A handwritten signature in blue ink that appears to read "Patrick R. Wardell".

Patrick R. Wardell
Chief Executive Officer
Cambridge Health Alliance



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2017



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Prenatal & Early
Childhood (Birth–4yrs)



Young Adult
(25–39yrs)



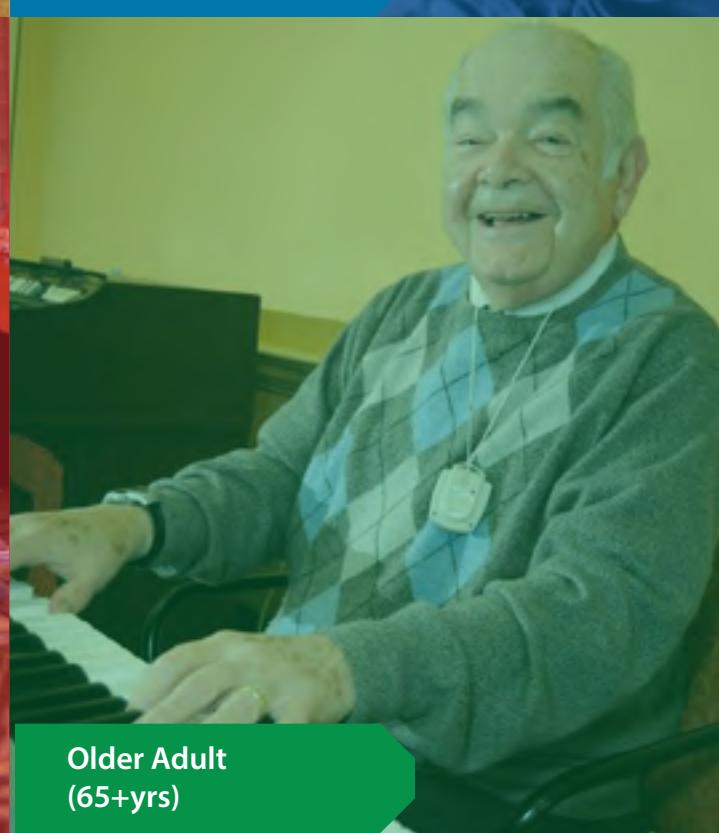
School Age &
Adolescent (5–18yrs)



Middle Adult
(40–64yrs)



Early Adult
(18–24yrs)



Older Adult
(65+yrs)

Introduction and User Guide

What is the Wellbeing of Somerville Report?

Somerville has a long-term commitment to using data to inform decision making and innovation. This approach has helped to create a highly desirable community in which to live, work, play, raise a family and grow older. For decades, local health providers, city administrators, community agencies and concerned individuals have had a tradition of gathering periodically to review available health-related data, analyzing the data and developing recommendations for future collaborative action based on discussion and dialogue.

The Wellbeing of Somerville Report is the result of such a process. The intention is to provide a tool for local leaders, community agencies and other stakeholders to learn together about the public health issues of the community. The purpose is not just to inform, but to inspire action. Key recommendations listed may help guide Population Health efforts at Cambridge Health Alliance and a Community Health Improvement Planning process to be led by the City of Somerville Health and Human Services Department, as well as community led initiatives.

Why create the Wellbeing of Somerville Report 2017?

Opportunities for better health begin where we live, learn, work and play, according to the Association for Maternal and Child Health Programs. This is a natural complement to the overarching Somerville vision, which often adds related language - “and a good place to raise a family and grow older.” This vision of urban living also complements the World Health Organization’s broad definition of health, put forward in 1946, as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.”

The past century has seen monumental improvements in the overall health and life expectancy of individuals in the U.S. and around the world. However, at the beginning of the 21st century, there are still substantial gaps in health and wellbeing for many vulnerable groups, including here in Somerville. These gaps have the potential to widen in the face of uncertain economic and political times and result in continued social inequities. Research suggests that certain populations are at a greater risk for certain ailments as a result of their race, social

“One who has health has hope and one who has hope, has everything.”

—Arabic Proverb

connectivity, neighborhood, economic status and education. These social phenomena can impact an individual's access to preventative care, health education and health resources, leading to physical and mental health concerns.

Somerville is a unique city with a lively and diverse population that is dynamic and shifting over time. Even here in Somerville, despite concentrated efforts, the data indicates there are continued health disparities based on race/ethnicity and socioeconomic status. This 2017 report examines public health topics included in the national Life Course Maternal and Child Health Indicators and Healthy People 2020 goals, as well as social determinants of health topics. It raises policy or programming opportunities to help address gaps, with an increased focus on decreasing social inequities. An ever-growing body of research makes a strong case that reducing social inequities is good for everyone.

The partners who created the Wellbeing of Somerville Report 2017 are committed to promoting a healthy community - a place where every



resident can thrive. A healthy community fosters interaction between people from all walks of life, representing diverse lifespan and healthspan experiences.

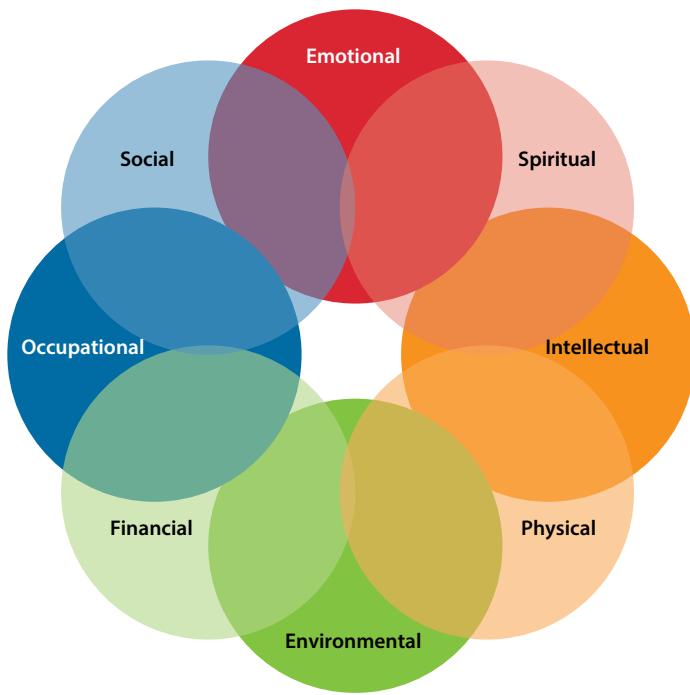
There is also a hope that the very process itself, of gathering data and convening groups across the city to discuss what the data means and to propose potential next steps, helps to raise awareness and stimulate a call to action to benefit those most impacted by health disparities and inequities. Equity has been defined as the "just and fair inclusion into a society in which all can participate, prosper, and reach their full potential." Eliminating systemic barriers requires sustained systemic changes. How can we in Somerville come together to end persistent differences in who is most impacted by specific health issues? How can we commit existing resources to activities that will move the entire population towards improved health and wellbeing across the lifespan? The process of creating this report is only one step in trying to answer such questions, hopefully serving as a catalyst for ongoing examination and exploration of how to create a healthier community for all.

What is Wellbeing?

Wellbeing is comprised of numerous dimensions that influence an individual's quality and duration of life. This is broader than just the traditional definition of health. Wellness is achieved through the interaction of physical, mental and social factors that help people to thrive and flourish. There are many models of wellbeing, or wellness. Topics included in a national measure of wellbeing, the Gallup Sharecare Well-being Index project which has surveyed Americans since 2008, include: a sense of purpose, social relationships, financial security, relationship to community and physical health.

The Eight Dimensions of Wellness, are highlighted in the Wellness Wheel in Image 1, as promoted by the National Substance Abuse and Mental Health Services Administration (SAMHSA). The interconnectedness of factors that impact wellness has strong correlations with

IMAGE 1: The Wellness Wheel



both health across the lifespan and the impacts of social determinants of health. Strategies to promote wellness need to be inclusive of the full range of factors, helping to develop strengths and assets around the Wellness Wheel. Initiatives such as SAMSHA's wellness efforts recognize the ability to develop and hone resilience skills. At some time in most people's lives, there will be stressors or trauma; resilience is the capacity to adjust and adapt to the impact of resulting difficult circumstances. If some dimensions of an individual's life are well developed and supportive, that can help offset challenges in other domains as they arise. Also, such frameworks can assist communities in selecting strategies and approaches that can address the holistic nature of wellbeing, recognizing the importance of where a person "lives, works and plays" in supporting or challenging one's ability to achieve and sustain health and wellbeing. Individual, family and community engagement are central to this work.

Changes in the health care environment since the 2011 report:

Since the development of the 2011 report, there have been significant changes in the health care landscape nationally. The passage of the Patient Protection and Affordable Care Act (ACA) was signed into law in March 2010 with two major aims - to expand health insurance coverage and to reform the delivery system for health care in the U.S. The law brought into motion changes that increased the number of people covered by health care insurance at the national and the local level. This was partly made possible by federal subsidies and the expansion at the state level of Medicaid programs to include coverage for adults at 138% or less of the federal poverty level. Also, young adults were allowed to be covered under their parents' coverage as dependents up to age 26.

The impacts on the healthcare system are aimed at achieving the goals of improving health outcomes, while lowering costs and improving health insurance access. Some of the strategies put into action by the ACA include: changes to the reimbursement system; linking payment to providers of health services to performance measures; changes in how health care delivery is organized, with the advent of Accountable Care Organizations intended to provide integrated comprehensive services at a set cost for a defined population, initially beneficiaries of Medicare, and later expanded to Medicaid (known as MassHealth in Massachusetts); and changing the future health care workforce through investments such as the National Health Service Corps to increase the number and distribution of primary care providers. At the time of this publication, the future of the ACA has been the topic of debate at the national level and its future is uncertain.

Socioeconomic factors and the contexts of people's lives influence their health and are critical to changing population health outcomes. Social determinants of health are increasingly part of discussions in varied service sectors committed to promoting health and wellbeing.

The passage of the Affordable Care Act triggered changes in health care delivery that increased the number of people covered by health care insurance at the national and the local level. Additionally, the ACA has impacted how the health care system interacts with communities, initiating a shift to a broader definition of population health, not focused exclusively on patients covered by a provider or insurer. (National Academies Press)

This approach to population health is emerging with more emphasis on the health outcomes of the residents in a particular geographic area. Related strategies expand expectations of who needs to be engaged in addressing the root causes of poor health outcomes, recognizing the role of multiple stakeholders such as schools, organizations in the community and business in tackling the issues that create barriers to health for all.

The City of Somerville has taken some early steps towards this expanded view of population health. Partnerships with healthcare providers such as CHA and other community providers will continue to be critical to meeting the needs of the local population and improving community health.

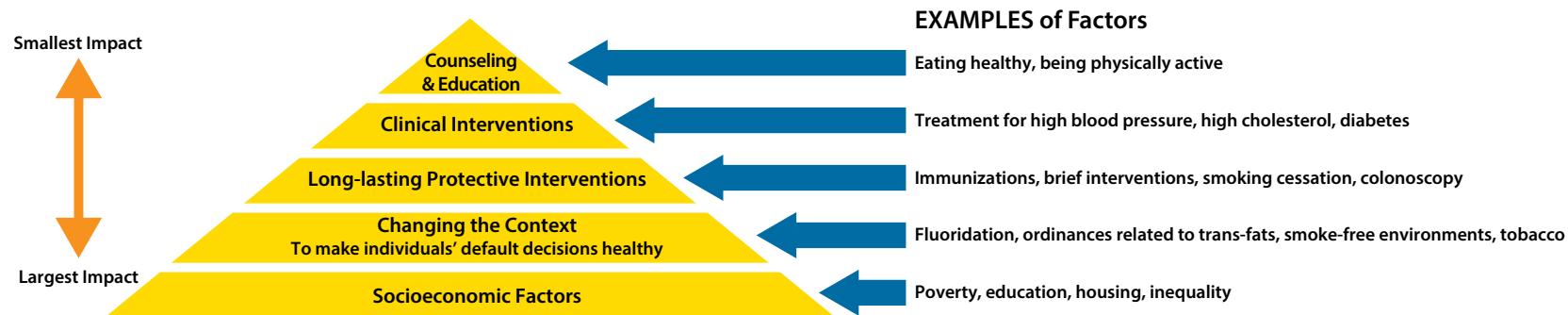
The reality of how these two approaches work together to improve health outcomes for a population, such as the residents of Somerville, is still a work in progress, yet very relevant to moving recommendations of

this report into plans of action with the necessary players and resources to best meet needs and improve community.

The Center for Disease Control (CDC) Health Impact Pyramid (Image 2) is one model that looks at multiple factors that affect health. In keeping with the estimate that only 10-20% of health outcomes are attributable to health care from the medical system, the pyramid emphasizes the greater impact of strategies that impact closer to the base of the pyramid, such as addressing socioeconomic factors. Each level provides opportunity for some impact, moving towards policy changes and investments that can impact the foundations of health and wellbeing and address the issues of inequity.

Socioeconomic factors and the contexts of people's lives influence their health and are critical to changing population health outcomes. The role of social determinants of health is increasingly part of discussions in health care systems, the education system and other service sectors committed to promoting health and wellbeing. Residents are unlikely to be able to directly control many determinants of their health such as how many sidewalks, bike paths or playgrounds, healthy food sources or major highways are in close proximity to their homes. The need for policies and programs that address both these determinants and societal level factors such as poverty and racism, requires collective action by community leaders and policy makers.

IMAGE 2: Center for Disease Control Health Impact Pyramid: Factors that Affect Health



Why the new focus on health across the life stages?

The literature related to Life Course Theory provides perspectives for exploring the health and wellbeing of Somerville residents. The Association of Maternal & Child Health Programs (AMCHP) facilitated a national effort to develop a set of Life Course Indicators (LCI). These indicators span the course of life, from prenatal onward, looking at issues that influence health outcomes including a wide range of elements beyond biological factors, expanding to include community and societal risk and protective forces, as well as policies. This approach is inclusive of the cumulative social and environmental elements across a person's lifetime of experience, providing insights into the connections between health and one's childhood experiences, as well as offering a window into the additive effect of inequities (AMCHP).

For instance, research shows that both positive and negative childhood experiences influence health throughout life. The impacts of adverse childhood experiences (ACEs) are connected to a long list of possible negative health outcomes, increasingly recognized as a public health issue (CDC). Healthy communities can support resiliency in children through nurturing relationships and by tackling systemic inequality.

The life course approach provides a way to strategize effective actions to improve health over the entire lifetime. It also promotes an integrated, holistic and innovative way to look at health and ways that a community can promote health through interventions ranging from before birth to older adults. National health data indicates that some health issues such as infectious disease management have seen improvements, but that health disparities have become persistent and have not been shifted within the present paradigm. This approach also highlights that in order to promote health and wellbeing, health care and public health need to join forces with other providers and perhaps new stakeholders to reduce health inequities through structural systemic changes in existing systems that hinder equal opportunity for optimal health for all.

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Across the life course, interventions can be specifically tailored to each age group to provide the most successful prevention approaches possible. Early prevention and intervention have become core to promoting public health. There are certain determinants of health which are risk factors and others which are considered protective factors for health outcomes. Family and community risk and protective factors can increase or decrease the odds of poor health outcomes. Risk factors and protective factors are cumulative, meaning that individuals with more risk factors are more likely to have multiple or worse negative health outcomes, while those with many protective factors are at a reduced risk for negative outcomes. Individual risk factors can have multiple outcomes. For example, an adverse experience such as the observation of or experience of abuse is associated with later anxiety as well as depression and substance abuse.

The ability to live a full life across the lifespan, beyond the absence of disease, is increasingly referred to as healthspan. The formal definition of healthspan is “the period of a person’s life during which they are generally healthy and free from serious or chronic illness”



(Macmillan Dictionary). Recommendations for community action, related to addressing health needs from a life course perspective, and to promote quality of life for all, tend to focus on the following strategies (AMCHP):

- Addressing alignment and organization and delivery of both individual and population-based health services
- Exploring linkage of health services with other services and supports such as education, social services and community support networks
- Promoting transformation of multiple environments to promote health, including social, economic and physical environments

“Knowing is not enough; we must apply. Willing is not enough; we must do.” – Goethe

Throughout the following chapters, public health data is interspersed with information available on various social factors that impact health and health equity. These include topics such as access to healthcare, education, economic stability, neighborhood and built environment and social and community context. Please note the following related to data when reading:

- Bulleted narrative related to data will be presented in sans-serif font.
- Public health data, even when available, is often on a delayed release timeline and can be outdated by the time it is officially reported, so it may tell the story of trends or health in the past better than in the present moment.
- Multiyear average estimates are utilized across the book; based on larger sample sizes they are therefore more reliable and give more precise estimates when analyzing data for smaller populations.
- When local data is not available, regional, state or national measures are utilized to better understand the topic's impact. For some data, age ranges available may not exactly correspond to the report age ranges.
- Charts depicting data are illustrative of only some of the information on any particular topic. Bullet points following a data chart are not necessarily directly related to that chart, but will be thematically or topically related. In a series of bullets, if the data source is the same, it will only be listed for the first item. In some charts, data has been rounded.

With the exception of the Demographics chapter, information is generally located in the life stage where it was seen to have the most potential impact. Please explore at least several of the life stage chapters

to gain a sense of the range of factors impacting health across the lifespan.

Health indicators that are a subset of either the Life Course indicators (LC) or the CDC Healthy People 2020 (HP2020) indicators and are often noted as such by reference numbers included in the text. These reference numbers allow those who would like to more fully explore the impact of these factors on lifelong health and wellbeing to do so with ease by reading the related national documents.

The appendices include; Appendix 1 for data sources, Appendix 2 with full citations for sources and Appendix 3 provides a glossary of related terms. Readers are also encouraged to scan the glossary before beginning to read the Report to become familiar with relevant terms and concepts. For more in-depth information on some of these topics, links are provided for further exploration. The companion electronic version of the report, to be found on the websites of the Somerville Community Health Agenda and the Somerville Health and Human Services Department, will provide hyperlinks to resources for additional knowledge and context.

A final note from the authors: Readers are encouraged to become fully engaged in their own personal health to ensure lifelong wellbeing, as well as engaging in the health of the community, to help build and sustain a great place to live, work, play, raise a family and age in place. To continue discussion on topics introduced in the report and/or to participate in action planning to implement any of the range of recommendations, please contact the Director of the Somerville Community Health Agenda at Cambridge Health Alliance or the Director of the City of Somerville's Health and Human Services Department.

Demographics

Introduction

Somerville is located directly northwest of Boston, in Middlesex County, Massachusetts. In 2017, Somerville celebrated its 175th anniversary as an independent community, having been incorporated in 1842 after first being settled in 1629 as part of Charlestown. The 2016 estimated population was 81,322, an increase from the 2010 estimated population of 75,754. Due to its size of 4.1 square miles, Somerville is the most densely populated city in New England.

The city of Somerville has one of the largest populations of young adults in the country, with 32.3% of the population between the ages of 25-34. It has a long history as a gateway city, serving as home to various immigrant populations, reflected in the community's value of diversity. This trend continues with only 75.3% of Somerville's citizens native-born in the U.S., significantly lower than the state average of 93% native-born.

Since the 1800s, Somerville has been an industrial city, which supported a densely populated community with good local jobs and influenced the housing construction and infrastructure development.

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Building on a history including brickyards and a Ford Assembly plant, Somerville is once again fostering new business and development in technology, creative arts and health care. The residential and commercial development at Assembly Row, Brickbottom, Union Square, the old Ames Envelope site and the Green line transit extension are examples of more recent economic, community and infrastructure growth.

Changes in the housing market, especially between 2011-2017, have had a big influence on demographics. Somerville has historically been an affordable place to live, with convenient access to Boston, a key factor in its early and ongoing status as a "gateway" city, attracting new residents from all over the world. As the Greater Boston area has begun experiencing increased housing costs, so has Somerville. Since 2000, single-family home sales have increased in price by 112% while median rent has increased by 43%. Coupled with rising costs, the vacancy rates of 0.3% for ownership and 2% for rental units increases the pressure on finding affordable housing in Somerville.

The rapid escalation in home values has coincided with a higher percentage of Somerville residents of greater financial means. Newcomers are buying and renting properties at prices not previously





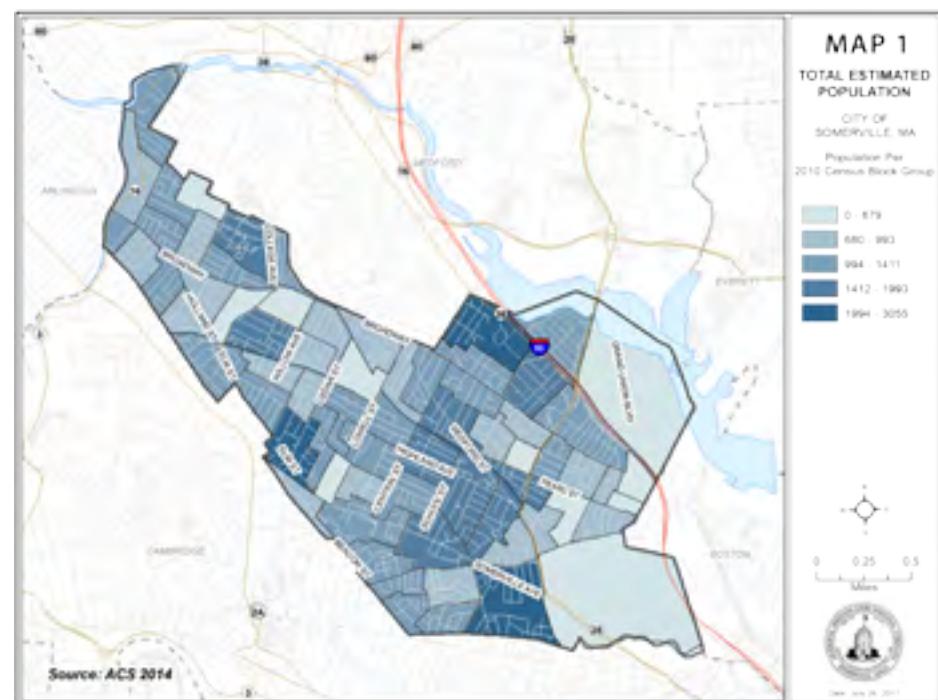
All-America City Award

The City of Somerville is known locally, regionally and nationally for its creative, innovative and data-informed approaches to civic engagement and local governance. Somerville has been recognized in 1972, 2009 and 2015 with the All-America City Award. This competitive award is given annually to ten U.S. communities by the National Civic League.



seen in Somerville, yet they devote a lower percentage of their income to housing than has been the norm in the city. The median income for Somerville, as reported in the ACS (2011-2015), is \$73,106 with 14.7% percent of people living in poverty. An estimated 22.7% of children under 18 were living below the poverty level, as were 14.2% of people 65 and over. An estimated 17% of families with children and 43.2% of families with a female householder and no husband present had incomes below the poverty level. With a limited supply of subsidized housing units for low-income individuals and families, the result of high housing costs has been a decrease in the percentage of housing available to residents (and potential residents) with moderate incomes and resources. Concurrent with these housing changes have been changes to the local retail environment, including the rise in specialty stores, restaurants, social and fitness establishments.

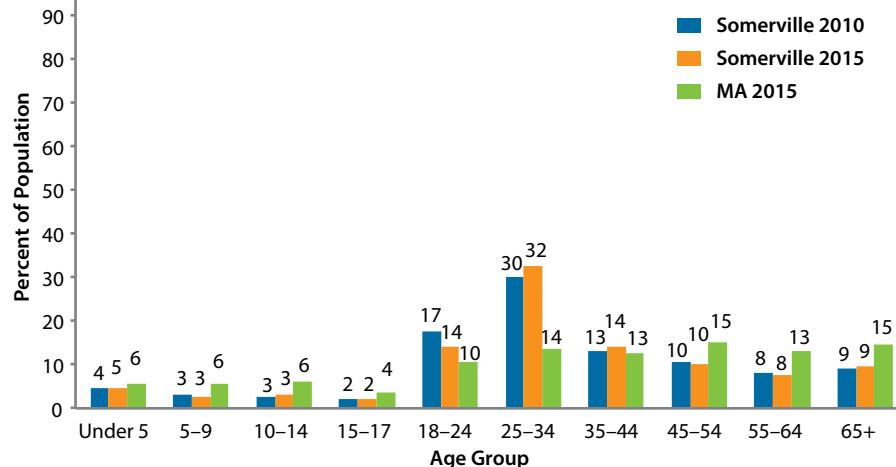
Population Data



A population density map of Somerville (Map 1) indicated the highest density was near Porter Square, Union Square and in the Mystic housing area of Winter Hill. Changes in the city since 2014, particularly in areas such as Assembly Row, where new housing units are being added, will continue to influence the distribution of the city's population.

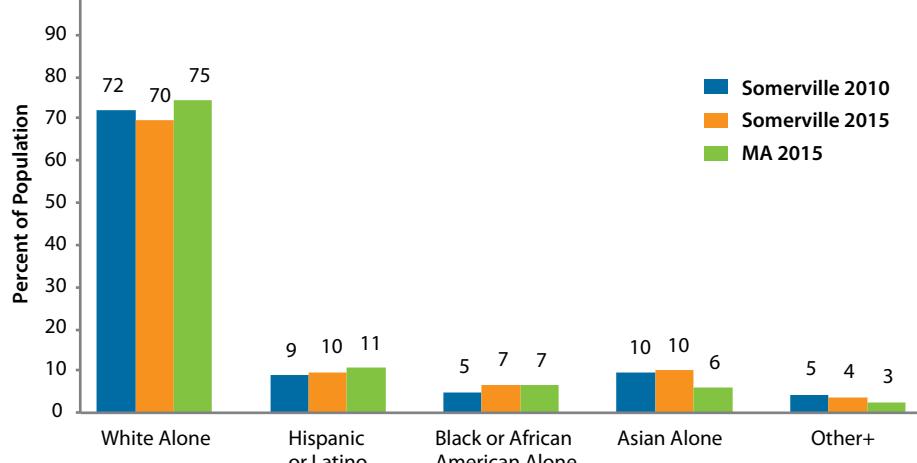
- Somerville is home to one of the largest populations of young adults in the country, with the 25-34 age group representing 32.3% of the total population (compared to just 13.6% statewide). Chart 1 shows this has increased from 2010 to 2015 (American Community Survey (ACS)).
- Reflected in Chart 1, the proportion of the Somerville population that was between the ages of 18–24 decreased by 19% from 2010 to 2015, from 17.4% to 14.1% of the total population, the largest change among all the age groups.
- Compared to the Massachusetts population, Somerville has a lower proportion of residents under the age of 18 and over the age of 45.
- Based on 2015 data, there were children under the age of 18 in 12.5% of Somerville households, with a range of family types.
- Based on the most recent ACS estimates from 2016, the population continues to increase each year, to a total of 81,322, an increase from the 2010 estimated population of 75,754.
- Between 2010 and 2015, the proportion of Somerville residents identifying as White decreased by 3%, while the proportion of residents identifying as Black increased by 39%, the proportion identifying as Hispanic or Latino increased by 10% and the proportion of those identifying as Asian increased by 5% (American Community Survey).
- The foreign-born population of the city as of 2015 was 24.7% of the estimated total. The top five countries of birth for foreign-born Somerville residents in 2015 were Brazil, Portugal, China, India, and El Salvador.

CHART 1: Somerville Population by Age Group (2010 and 2015)



Sources: Somerville and MA ACS (5-yr estimates)

CHART 2: Diversity of Somerville Population (2010 and 2015)



Other+ includes: American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, and Two or More races

Sources: Somerville and MA ACS (5-yr estimates)

CHART 3: Leading Languages Spoken at home
(Somerville and MA 2015)

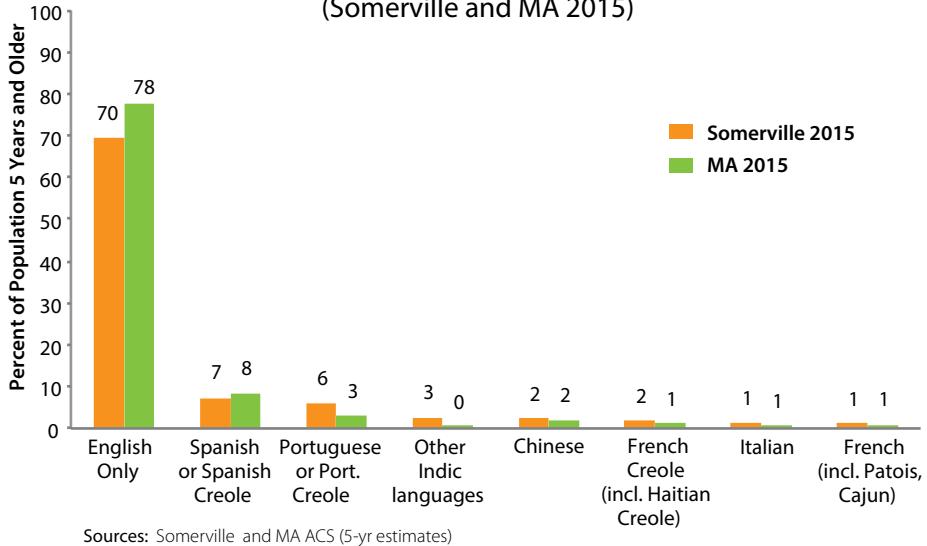
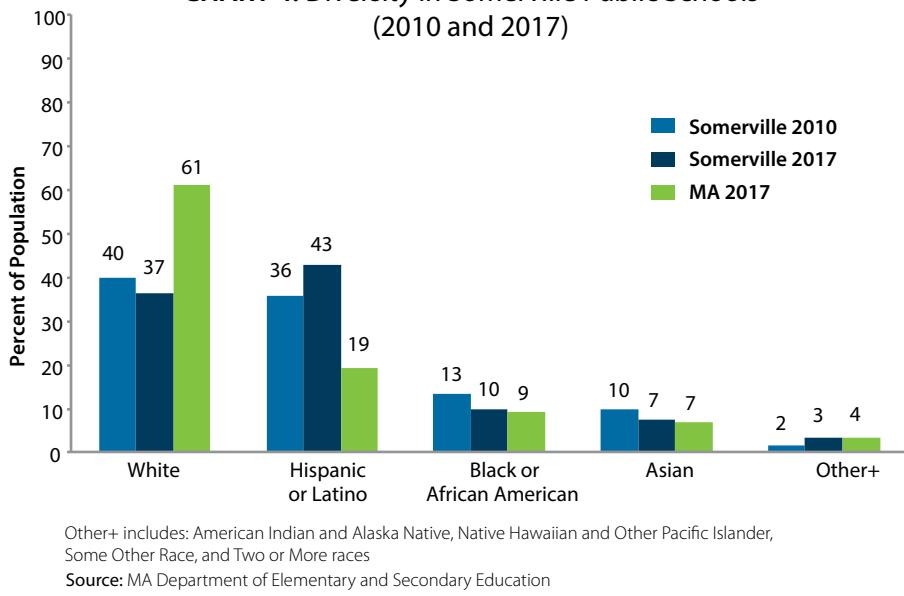
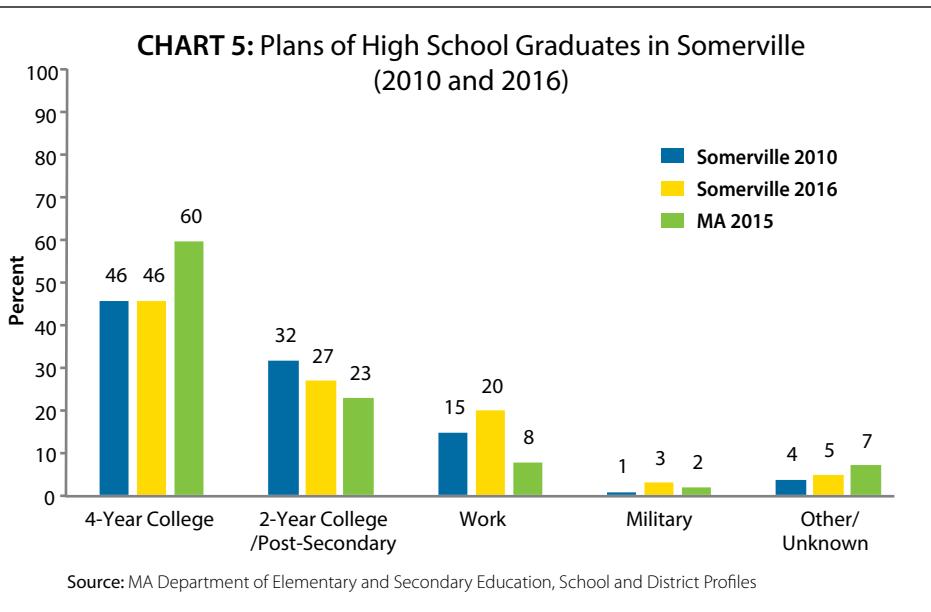


CHART 4: Diversity in Somerville Public Schools
(2010 and 2017)

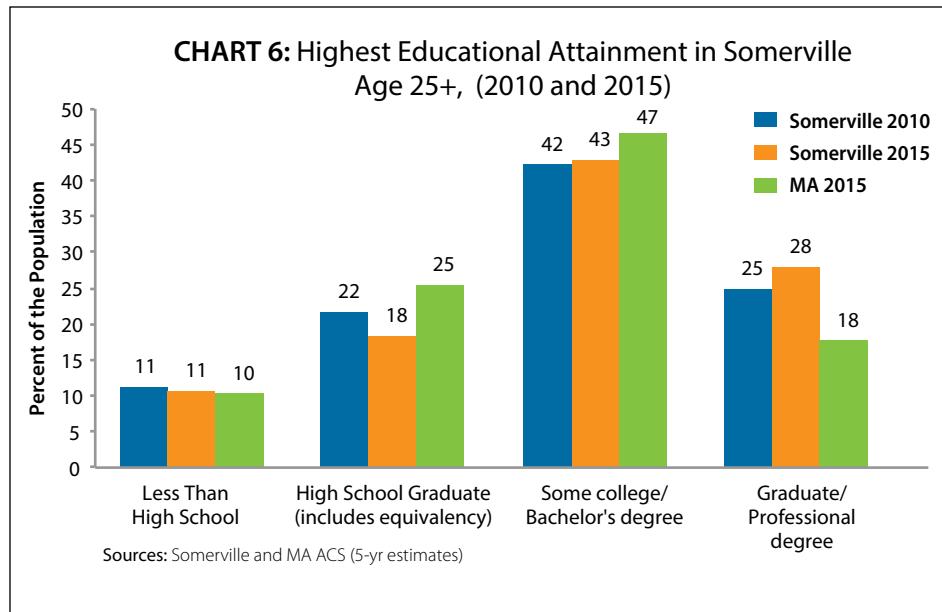


- Generally, Somerville has a greater diversity of languages spoken at home than the rest of the state. Spanish and Portuguese are the leading non-English languages spoken in Somerville as seen in Chart 3. Since 2010 the percentage of Somerville residents speaking Spanish and Portuguese at home has shown some decrease (American Community Survey).
- Chart 4 highlights the demographics of the Somerville school population, dramatically different than the overall city population. The White population in Somerville Public Schools was 37% in 2017, with a rise in the Hispanic/Latino population to 43%, much higher than the state level of 19% (MA Department of Elementary and Secondary Education 2017).
- Of the 4,931 students enrolled in the Somerville Public School System, 60% are designated as “high need” (including a number of variables), 39% are economically disadvantaged, and 49% speak a language other than English at home.
- Compared to Massachusetts’ students as a whole, Somerville students are much more racially and ethnically diverse.
- According to Somerville Public Schools, over 51 languages are spoken in students’ homes. Spanish is the most common non-English language, spoken at home by 27% of students in 2016, followed by Portuguese (9.3%) and Other Language (12%) (Somerville Public Schools 2016).
- During the 2016 school year 19% of the students were identified as English Language Learners (MA Department of Elementary and Secondary Education 2017).



Education

- Chart 5 shows no change in the percent of Somerville high school students planning to attend a 4-year college upon graduating between 2010 and 2016; however, fewer students planned on attending a 2-year college in 2016 than 2010, opting to enter the workforce or join the military instead (MA Department of Elementary and Secondary Education 2010 and 2016).
- Compared to Massachusetts, fewer Somerville graduates plan to pursue a 4-year degree. More Somerville youth are opting to attend a 2 year-program, enter the work force or join the military.
- The percentage of residents who are high school graduates or higher is 89.3%, while 10.7% of Somerville residents over the age of 25 do not have a high school diploma or equivalent (American Community Survey).
- Fewer Somerville residents than Massachusetts residents reported their highest education as some college or completion of a bachelor's degree,



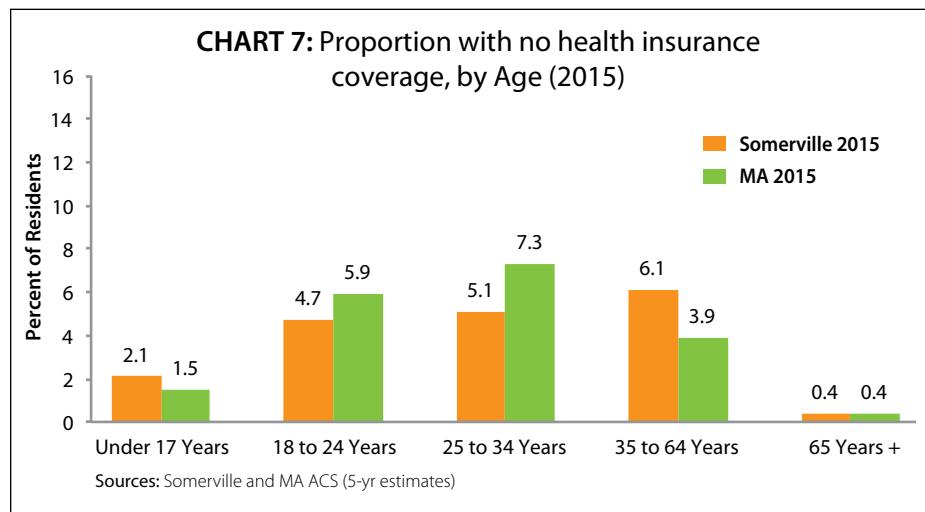
as seen in Chart 6, yet the percentage of Somerville residents 25+ who obtained a graduate or professional degree by 2015 was notably higher than the state percentage.

- The percent of the Somerville population 25+ who had obtained a graduate or professional degree rose by 12% between 2010 and 2015, while the percent who did not pursue some college after graduating high school (or obtaining an equivalent degree) decreased by 15%.

In Somerville, 8% of residents report having a disability, defined as a physical or mental impairment that has a substantial and long term adverse effect on the ability to carry out normal day to day activities. The likelihood of having a disability varies by age; 3% of people under 18 years old, 5% of people 18 to 64 years old and increasing to 38% percent of those 65 and over (ACS).

Access to Health Care

Overall, Somerville residents have a high rate of health insurance coverage. The Affordable Care Act provided additional options, though the future political and financial sustainability of those options is unclear at the time of this publication. MassHealth, the Massachusetts Medicaid program, provides health insurance coverage for low-income individuals, including children, pregnant women, individuals with disabilities, and seniors. Health Safety Net covers some healthcare for uninsured residents.



Health Insurance Coverage

- In Somerville, as of 2015, residents 35-64 were the least likely to have health insurance, with 6.1% having no health coverage, higher than the state level for this age range, as in Chart 7 (American Community Survey).
- Overall, the rates of health insurance coverage have improved, though there are still residents who are uninsured. Slightly fewer Somerville residents of all ages had some health coverage than MA residents (95.5% with coverage in Somerville versus 96.4% covered in Massachusetts).

Economic Stability

In the decade between 2005 and 2015, Somerville experienced more job growth, 24.5%, compared to 12.2% in other cities in the Metro North Boston area. Somerville continues to have one of the lowest unemployment rates in the Boston area, according to the Executive Office of Labor and Workforce Development. Somerville's unemployment rate is consistently below the Massachusetts and national rates, and the spread has increased over time. The number of jobs in Somerville has more than recovered after falling during the recession. Weekly wages are also on the rise. Recent development in Somerville has provided new economic growth.

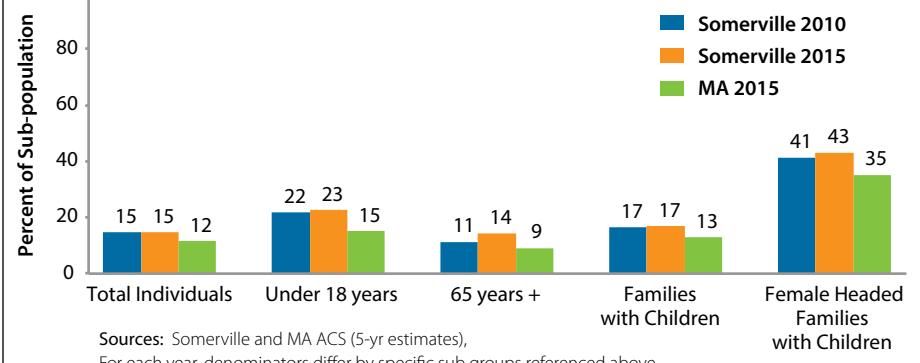
A recent study by the Federal Reserve Bank of Boston noted that over 80% of Somerville residents with jobs do not work in Somerville. Nearly 30% commute to Boston, and just over 20% work in Cambridge. In a draft accessed in July 2017 of the Community Action Agency of Somerville's 2018-2020 Community Assessment Report and Strategic Plan (CARSP), it was noted that underemployment is a major challenge for low-income Somerville residents and that many are unemployed or underemployed because of a need for education or training. This is particularly true for those who do not speak fluent English.



Poverty Data

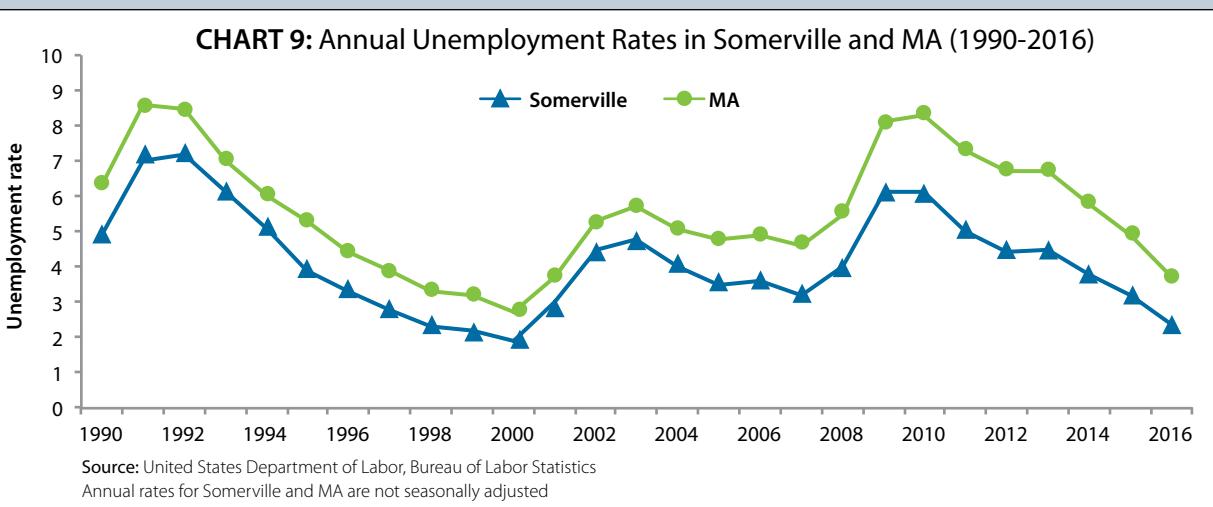
- Somerville residents 65 years or older saw the highest increase in poverty between 2010 and 2015, though still lower than the poverty rates for residents under 18 years, families with children and female-headed families with children, as seen in Chart 8 (American Community Survey).
- The poverty rate overall in Somerville stayed the same between 2010 and 2015 at 14.7%. The poverty rate in Somerville is higher than in MA overall.
- State data from 2016 related to determining the SNAP food gap, based on a calculator from the Food Bank of Western Massachusetts, indicates that of Somerville residents who had MassHealth coverage, 54.7% lived in zip code 02145 (eastern side of the city), 27.2% in 02143 (central) and 18% in 02144 (West Somerville).
- According to the ACS 2011-2015 five year estimates, the Median Household Income in Somerville was \$73,106. For 2006-2010, the Median Household Income was \$61,731 (in 2010 dollars) or adjusted for inflation, 2010 Median Household Income was \$67,098.80 (in 2015 dollars).

CHART 8: Trend in Poverty Rate for Somerville Residents, by Subgroup (2010 and 2015)



- Of individuals identifying as “White alone”, 11.8% were living in poverty, compared to 19% of Asians, 26% of Hispanics/Latinos, and 36.6% of African Americans, based on data available through 2015.
- Female-headed families with children are disproportionately impacted, with the highest rates of poverty at 43.2% based on 2015 data, a 2.6% increase since 2010 and consistently higher than the state rate.

CHART 9: Annual Unemployment Rates in Somerville and MA (1990-2016)



- In 2016, the unemployment rate in Somerville was 3.7%, the lowest it has been since 2000. Since at least 1990, the unemployment rate has been lower in Somerville than in MA, but has followed a similar trend (U.S. Department of Labor).

CHART 10: Trend in Median Single Family Home Selling Price (2008-2014)

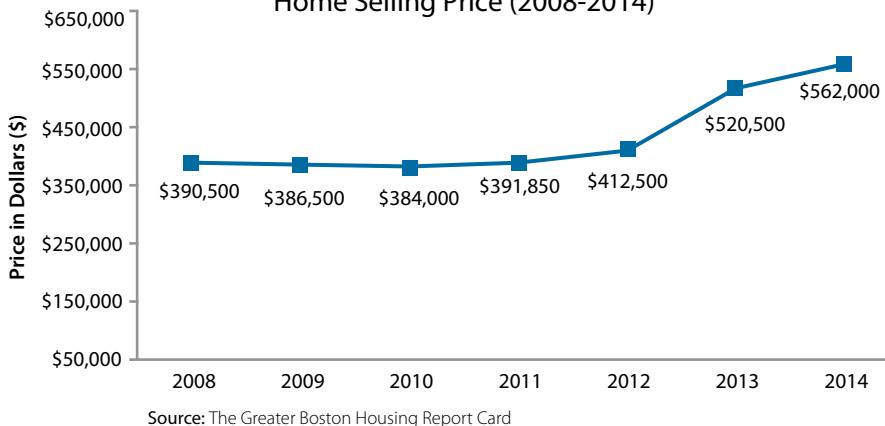
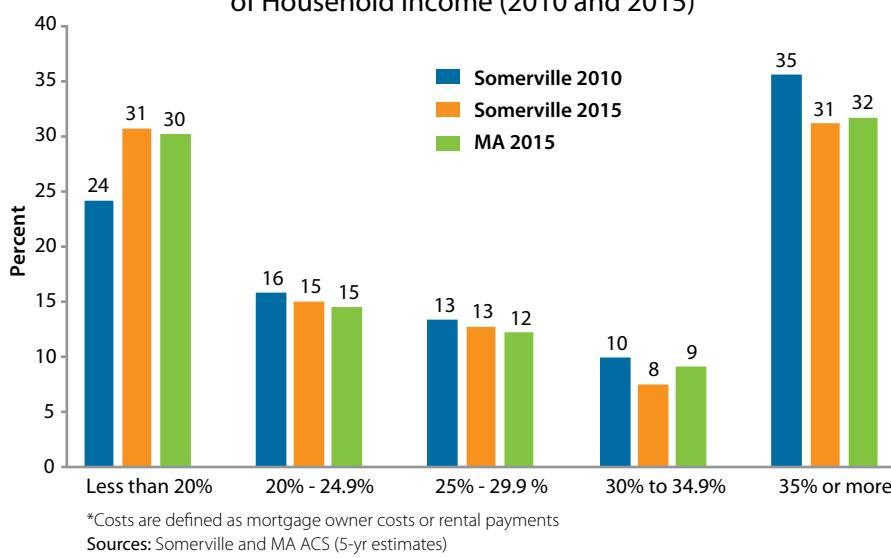


CHART 11: Somerville Housing Costs* as a Percentage of Household Income (2010 and 2015)



Housing/Housing Security

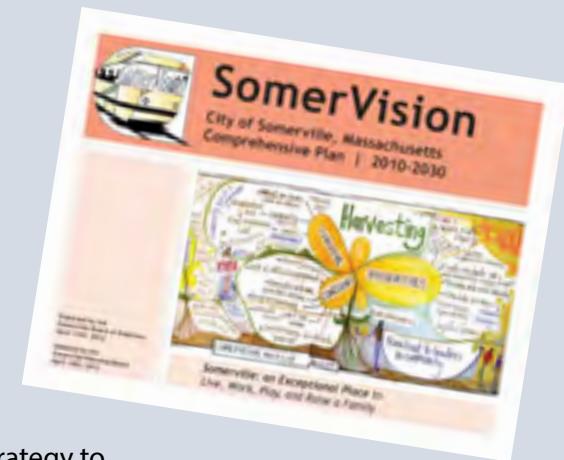
Somerville has 33,720 housing units, 65.2% of which were built prior to 1940. Rental units comprise 66% of the units; with 34% of housing units occupied by the property owners. According to the Assessor's classifications for housing structure types, as of Nov 2016, there were: 2,347 single families, 5,119 condos, 5,140 two-families, 2,305 three-families, and 663 buildings with 4+ apartments. There are 3,430 designated affordable units in Somerville. Of these, 112 are for homeowners, with the remaining 3,066 available as rental units. Low and moderate income Somerville households are challenged to affordable rental units that are of sufficient size for families. Extremely low vacancy rates also make finding housing more difficult.

- The average single-family home sale price in Somerville was similar for all years between 2009 and 2012, but then began to increase rapidly. In 2014, the median home selling price was \$562,000, a 44% increase from 2008 (The Greater Boston Housing Report Card 2009, 2010, 2011, 2012, 2013, 2014-2015).
- Historically, since 2000, single-family home sales have increased in price by 112%. Median rent has also increased by 43% since 2000.
- From 2010 to 2015, the Somerville housing cost as a percentage of household income became more similar to the overall MA housing cost as a percentage of household income. This shift may reflect the increase in median income and the wealth gap, partially indicated by the higher numbers at the low and high end of the scale in the above chart (American Community Survey).
- As reported in the Somerville Housing Needs Assessment, 39.1% of renter households in Somerville were rent-burdened, defined as households paying more than 30% of gross income towards housing. Just over thirty eight percent (38.1%) of owner households were cost-burdened.



SomerVision

In 2012, residents and City staff completed a three-year public process resulting in SomerVision, a comprehensive planning document that sets a blueprint for a 20-year strategy to make Somerville an even more exceptional place to live, work, play, raise a family, and grow older.



Prenatal and Early Childhood

Introduction

The health of a mother prior to pregnancy, defined as maternal health, along with her access to early and adequate prenatal care are important to the life long health trajectory of the child. Scientific evidence continues to reinforce the early years as critical to setting the foundation for health and wellbeing throughout life.

Access to health care for infants, toddlers and their caregivers including mental and dental health, helps support normal development and growth. Limited healthcare access, life stressors and environmental factors such as exposure to secondhand smoke can play a role in influencing the physical and mental development in a child's lifespan. Early screening, referrals and services are pivotal to ensuring that every child has healthy early childhood experiences and equitable access to care. Quality, affordable child care provides grounding for early childhood education and allows parents to participate in the labor force. It also

prepares children for kindergarten entry with the physical, social and behavioral skills necessary to thrive.

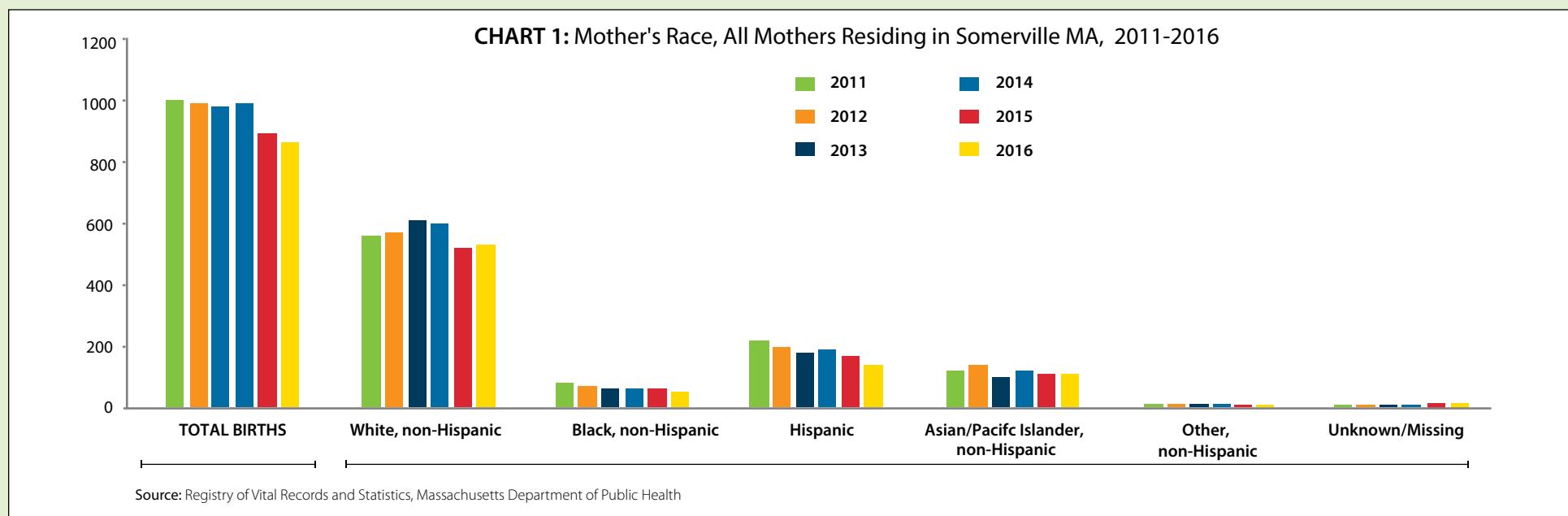
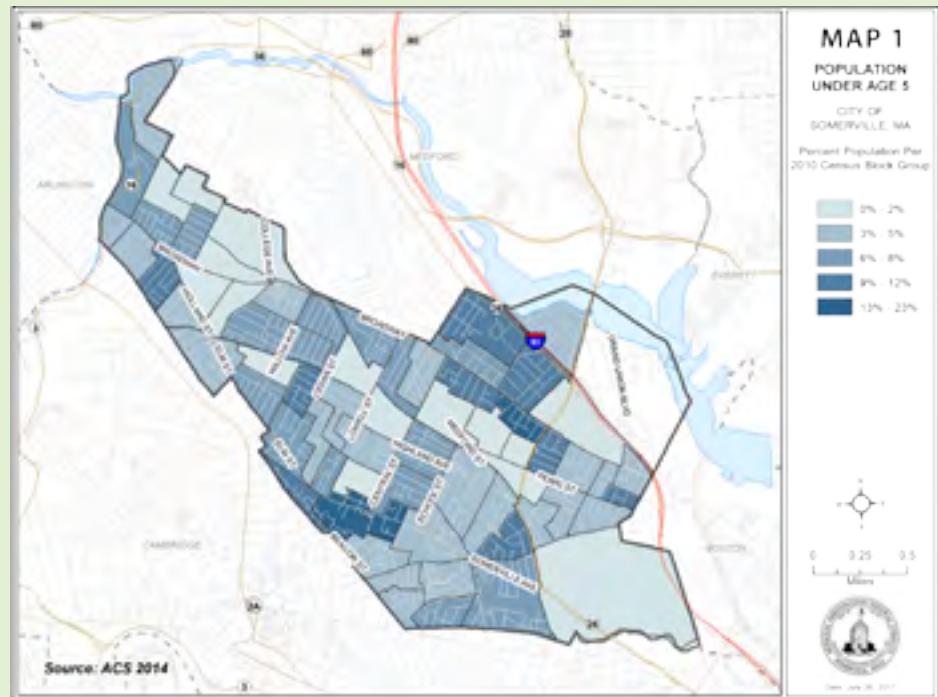
Work by Harvard's Center on the Developing Child has correlated resiliency with the prevalence of positive experiences, which can reduce effects of trauma, and as a predictor for stability in adulthood. This research indicates that even one caring, trusted adult who provides a safe haven in a child's early life can greatly improve the odds a child can build resilience and thrive. For a child experiencing significant levels of stress, life can be overwhelmingly difficult. An adult buffer can help mitigate the impacts of persistent stress levels that can become toxic, impacting the developing brain, normal growth and learning. Similarly, social networks can support families with young children by providing insights and guidance on normal development and coping mechanisms. Moreover, nurturing relationships and family friendly social networks can provide the security of having a safety net of support - bringing to life the old adage that "it takes a village to raise a child."

"If we want to shape the future, to truly improve the world, we have 1,000 days to do it, mother by mother, child by child, for what happens in those 1,000 days through pregnancy to the second birthday determines, to a large extent, the course of a child's life, his or her ability to grow, learn, work, succeed and by extension, the long-term health, stability and prosperity of the society in which that child lives."

—Roger Thurow, Author of "The First 1,000 Days: A Crucial Time for Mothers and Children and the World"



Children birth to 4 years of age comprised 4.8% of Somerville's total population according to American Community Survey's most recent 5-year averages, a 9.1% increase since 2010.



Demographics, age specific

Children birth to 4 years of age comprised 4.8% of Somerville's total population according to American Community Survey's (ACS) most recent 5-year averages, a 9.1% increase since 2010. In the map to the left, ACS data indicates the distribution of children age birth to 4 across the city, with the largest density in the areas near Union Square and East Somerville/Winter Hill.

Prenatal Care and Birth

In this report, local data on births refer to women living in Somerville at the time they gave birth, regardless of where the child was born. Some specific data sets from 2010-2016 were available from the state as well as from a comprehensive state report on 2015 data, released in March of 2017 (MA DPH, Registry of Vital Records and Statistics, Bureau of Health Statistics, Research and Evaluation and MA Births 2015 State Report). The number of births in Somerville increased by 15% from 2004 to 2014, with 849 births in 2004 to a high of 978 in 2014. Rates decreased in 2015 (876) and in 2016 (848) (MA DPH, Registry of Vital Records and Statistics). The vast majority of births to mothers residing in Somerville occur in the young adult age span of 25-40 years (MA DPH, Registry of Vital Records and Statistics).

- In 2016, of the total births, 61.6% of Somerville births were to mothers who identified as White, non-Hispanic, 16.2% Hispanic/Latino, 13.3% Asian, and 5.7% Black, non-Hispanic (MA DPH, Registry of Vital Records and Statistics, Bureau of Health Statistics, Research and Evaluation).
- Of the total Somerville births where only the mother is listed on the birth certificate, there has been a decrease from 58 in 2010 to 38 in 2016.
- In 2015, over one fifth of mothers were unmarried.

- Between July 2015 and June 2016 210 births out of a total of 1,151 births at CHA's Cambridge Hospital and Birth Center were to women living in Somerville. This represents 18.2% of all births at CHA and roughly a quarter of total Somerville births. For the same time period in 2016-2017, there were 182 births at CHA to women living in Somerville, representing 15.5% of total births at CHA and approximately one fifth of total Somerville births.



Preterm (LC-55) and low weight births are national indicators of maternal and child life course health. Preterm refers to babies born 3 or more weeks early or less than 37 weeks gestation. Low birth weight refers to less than 5.5 pounds at birth, which is more common in babies born prematurely. Local data was not available on multiple births, which may result in lower birth weights and are more prevalent in mothers who have received fertility treatments. The state rate in 2015 for fertility enhancing drug use was 13.4% of total births, with multiple births higher in mothers over 35 statewide.

- In 2015, the percentage of children who were born premature was 10.3% in Somerville (90 of 876 births). In MA, the rate was lower at 8.4% in the same year. Of Somerville teen mothers, ages 15-19, 8.3% of their babies were born prematurely, lower than the overall city and state levels (MA DPH, MA Births 2015).
- In 2015, 10.4% of all births to Somerville mothers (91 out of 876) were reported to be low birth weight. The Massachusetts low birth rate for all births in the same year was lower at 7.8%.
- Of teen mothers, ages 15-19, the low birth weight rate was 16.7% for Somerville, higher than the 9.1% for the state.

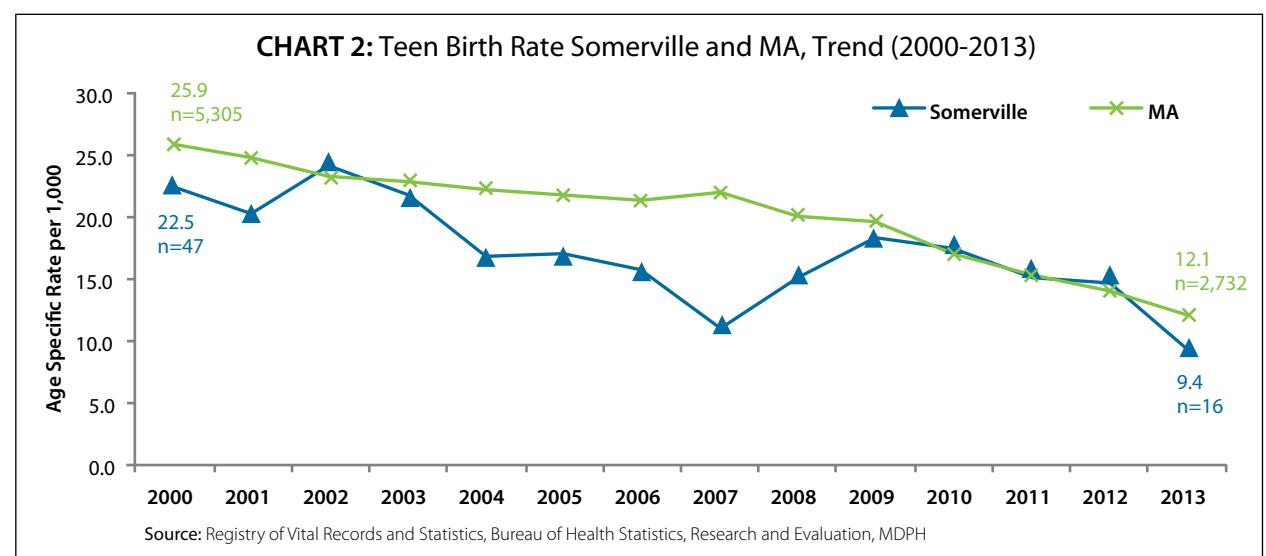
Adequate prenatal care helps to insure healthy birthweights and establish the foundation for future wellbeing. The term is defined by what is called the Kotelchuck scale, measuring if prenatal care was initiated by the 4th month of pregnancy and that 80% or more of expected prenatal visits were received; it does not refer to the quality of care received. The measure is based on reporting from Massachusetts hospitals where births occur.

- The Massachusetts Births 2015 Report indicated that 87.1% of all mothers residing in Somerville at the time of their child's birth received adequate prenatal care, an improvement from prior years (MA DPH, MA Births 2015).
- In 2015, 27.3% of Somerville mothers' prenatal care was provided by public health insurance, compared to 37.6% statewide. This was a decrease from the Somerville percentage of 30.8% in 2012, when the state percentage was 39.3%.
- Statewide 2015 data indicated that 66.7% of Somerville teen mothers under 18 were reported to have received adequate or better prenatal care. Teen mothers in Somerville had consistently lower rates of adequate prenatal care over most of the last two decades, relative to other age groups (MA DPH, Registry of Vital Records and Statistics).

Based on 2010-2013 available data, mothers in Somerville were reported to have received adequate prenatal care at rates higher than statewide. In the same period Black, non-Hispanics received the lowest level of prenatal care among Somerville mothers, however it was still higher than the state levels (MA DPH, Registry of Vital Records and Statistics). In Massachusetts as a whole, there was a steady decline in adequate prenatal care for all races between 2012 and 2015 (MA DPH, MA Births).

Reducing the rate of fetal and infant mortality (death within the first year of life) (MICH-1) has been a prime driver in maternal and child health efforts nationally. This includes deaths due to Sudden Infant Death Syndrome (SIDS), sometimes known as crib death, defined as "unexplained death, usually during sleep, of a seemingly healthy baby less than a year old." Babies under the age of one should sleep on their back at all times, without blankets or toys, on a firm surface to reduce the risk of Sudden Infant Death. In 2012, Somerville's infant mortality rate was 2.1 deaths per 1,000 births, less than half the infant mortality rate of Massachusetts (4.3 deaths per 1,000 live births) in the same year. The infant mortality rate in Somerville has been, on average, lower than the state since 2000 (MA DPH, Registry of Vital Records and Statistics).

- According to Chart 2, since 2000, births among teens ages 15-19 have overall declined in both Somerville and Massachusetts. After a brief rise in 2007-2009, Somerville birth rates once again declined to 9.4 per 1,000 live births to teens, or 16 births by 2013 (MA DPH, Registry of Vital Records and Statistics).



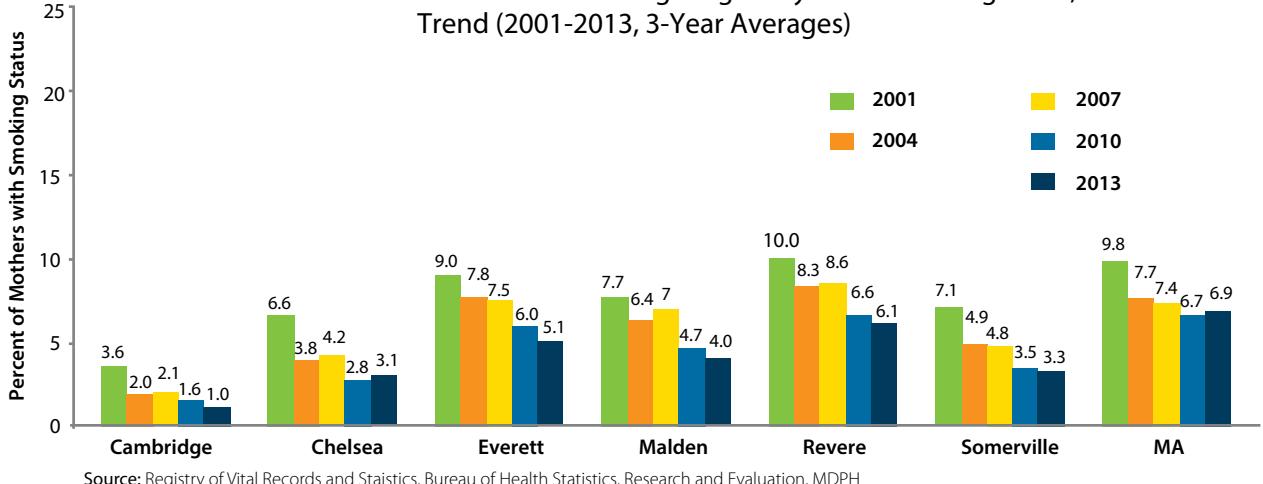
- The Massachusetts Birth 2015 Report reveals the teen birth rate in Somerville declined even more, to 7.0 per 1,000 live births or 12 babies born to teens ages 15-19 in 2015 (5.5 per 1,000 births) (MA DPH, MA Births 2015).
- The Massachusetts state report for 2015 reported that 58.3% of births to teen mothers in Somerville were Hispanic/Latino, compared to 8.35% White and 33.3% Black.
- Teen pregnancies among Somerville high school students were highest among Hispanic/Latino students in both 2014 and 2016. Relatedly, Hispanic/Latino students self-reported in the Somerville High School Youth Risk Behavior Survey (YRBS) that, in those same years, 4.7% (2014) and 2.1% (2016) had carried a child or gotten someone else pregnant (Somerville HS YRBS 2014 and 2016).

Stressors during Pregnancy (LC-56) can impact development in utero, as well as after birth. Maternal psychological stress triggers a hormonal response that increases the risk of preterm birth and which may also put a child at a higher risk for heart disease and hypertension later in life. The impact of stress on a mother can be passed between generations,

as a person who was born preterm is considered to be more likely to give birth preterm, according to the Association of Maternal and Child Health Programs. While some stressors can be extremely personal, like the death of a relative or loss of a job, others are systemic or physiological. For example, the Great Recession from 2007 to 2009 was a burden to many expecting mothers, and those in Somerville were no exception. More recently, expecting mothers may be concerned about immigration status, job security, or access to health care. Experiences of racism and inequity are also particularly detrimental to the health of an expecting mother and her baby.

During the Zika virus scare in 2015-2016, there were concerns at the federal and state level about travel to areas with reported incidence of Zika. The World Health Organization declared a global health emergency and the U.S. Center for Disease Control issued travel warnings for pregnant women, or those of child-bearing age who might plan to become pregnant. Maternal stress caused by lack of clear information and fears heightened by media coverage were reported by staff in clinical and service settings working with local expecting mothers at the time.

CHART 3: Mothers who Smoked during Pregnancy in Surrounding Cities, Trend (2001-2013, 3-Year Averages)



As depicted in Chart 3, smoking rates among pregnant women in all surrounding cities declined markedly between 2001 and 2013, to percentages generally lower than the state (MA DPH, Registry of Vital Records and Statistics).



Diabetes during pregnancy (LC-49) is a stressor for both mother and baby, whether a pre-existing condition or developing during pregnancy. According to the 2011 MA Pregnancy Risk Assessment Monitoring System (PRAMS) report, about 2% of MA mothers had type 1 or 2 diabetes prior to becoming pregnant. More recent state data from 2015 indicates that 4.7% of pregnancies in Somerville resulted in gestational diabetes (MA DPH, MA Births 2015).

Smoking during pregnancy can increase the risk of preterm labor and low birth weight. Exposure to secondhand smoke is also one of the life course indicators for future health. The percentage of infants whose mothers smoked during pregnancy in Massachusetts has declined steadily for decades to a 2015 statewide level of 5.5%; with higher rates in expecting mothers who were White, non-Hispanic (MA DPH Registry of Vital Records and Statistics). Recent research indicates the remaining population that smokes has been persistent, particularly in conjunction with mental health issues. A new study indicates that smoking rates remain higher in lower income households (Cigarette Smoking, CDC, 2017). Smoking cessation campaigns and no-smoking policy changes have reduced smoking rates. Local policies include Somerville public housing becoming smoke-free in September 2016.

Protective Factors

Breastfeeding naturally supports early nutritional needs adding protection against infectious diseases and childhood obesity. Increasing the proportion of infants who are breastfed is important to improving the health of the next generation and is one of the Maternal and Child Health indicators. It is a recommendation of the American Academy of Pediatrics (AAP) that babies be exclusively breastfed for the first 6 months of a child's life (AAP, 2012). Currently, breastfeeding support (LC-04) is measured nationally by the percentage of babies born in Baby Friendly Hospitals that elect to follow ten "Steps to Successful Breastfeeding" (www.babyfriendlyusa.org). Locally, the CHA Cambridge Birth Center, Boston Medical Center, Melrose-Wakefield and Mass General have this certification. CHA operates the local WIC program in Somerville, which provides extensive breastfeeding support. The City of Somerville is breastfeeding friendly, offering lactation spaces at City Hall and the Annex buildings for staff and visitors. For Somerville new mothers, the intention to breastfeed, based on response at time of birth, varied by age of mother with lower rates for teen mothers (78.6%) and higher rates for mothers over 30 years (94.3%) in 2011-2013. Data on how many Somerville mothers actually initiated or continued is not collected (MA DPH, Registry of Vital Records and Statistics).

There can be many barriers to women initiating and maintaining breastfeeding, including current federal employment policies in the U.S. that do not provide the type of paid time off for new moms found commonly in European countries. This lack of time off requires many mothers to return to work soon after birth, making it even more challenging to breastfeed. Workers at higher wage jobs are more likely to have paid maternity leave which allows for more opportunity to breastfeed. Not all civilian workers in the U.S. have this benefit, one that has also been demonstrated to promote bonding between parent and child, an experience key to getting a healthy start. Taking unpaid leave is not a viable option for many and even then, the Family and Medical Leave Act which was established to help protect the right of unpaid time to care for family members, is only accessible to 60% of American

workers as there are limitations in the application of the regulations to all work settings (Desilver, 2017). The needs of lactating mothers are also more likely to be provided for in work settings that have higher paying jobs and less likely in minimum wage work environments.

Access to Health Care

Health Insurance Coverage

In 2015, only 1.1% of Massachusetts children did not have health care insurance coverage. At that time, over 355,000 low income children in the state were covered by Medicaid (The Kaiser Family Foundation, 2015). MassHealth is the Massachusetts Medicaid program, providing health insurance coverage for low income individuals, including children, pregnant women, individuals with disabilities, elderly parents and other adults.

Primary Care Provider

Kindergarten registration requires a pre-enrollment physical, another important opportunity for parents or guardians to connect with a primary care provider about their child's growth and development. In 2016, CHA was the primary medical provider for 1,440 Somerville children under the age of 4. CHA is a safety net hospital, meaning that it provides care for those who are low income, uninsured or who might otherwise have barriers to health care.

Immunizations

For newborns, breast milk can help protect against many diseases because it contains antibodies passed from the mother directly to the infant. If breastfeeding is not an option, and as children age, vaccines can help protect babies and small children from disease and are important public health tools available for preventing disease. Vaccinations not only protect children from developing serious diseases but also protect the community by reducing the spread of infectious disease.

The Somerville Hub

The Somerville Hub, initially developed as an online resource for parents and guardians of young children was expanded to include resources from early childhood through the teen years. It includes information on childcare options, as well as downloadable resources such as the Shape Up Under 5 materials related to Eat, Play and Sleep tips for children under 5 and their caretakers. Information on how to access Somerville programs, family services and family-friendly places in the city is also available. Walk-in service is available at 42 Prescott Street or by calling 617-625-6600 x6965. <http://somervillehub.org>



Immunizations are given on varied timelines, starting at birth and continuing throughout one's life. The Centers for Disease Control and Prevention (CDC) has guidelines for when vaccines be given to children during infancy and early childhood. Well-child visits with a child's medical provider are spaced at appropriate intervals to support the immunization schedule, eventually transitioning to annual visits.

WIC and dental access program



The CHA Cambridge/Somerville Women, Infants and Children (WIC) Program recognized that parents were waiting too long to take their children to the dentist for a check-up. Some parents don't understand the importance of early dental care, and others

don't have the resources to see a dentist. Starting in July, 2017, the WIC Program partnered with Brian Swann, DDS, MPH, Chief of Oral Health at CHA to provide free dental screening for WIC families at the Somerville WIC office. This clinic, staffed by Cambridge Health Alliance/Harvard School of Dental Medicine residents, provides all family members early screening, referrals and important education about dental health and its impact on overall health.

Children age four or older who are in daycare, preschool or kindergarten must have proof that they have received a booster dose of Polio-virus vaccine (IPV), two age appropriate doses of Measles, Mumps, Rubella vaccine (MMR), three doses of Hepatitis vaccine (HBV), two doses of Varicella (chicken pox) vaccine, and a booster dose of Diphtheria, Tetanus, Acellular, and Pertussis vaccine (DtaP). The Kindergarten immunization rate for Somerville in 2016-17 was 97.7%, based on data collected by the public schools.

Oral Health

The most common infectious disease of early childhood is dental caries, or tooth decay. Early childhood caries are caused by a bacterial

interaction with sugary foods and the enamel of a young child's teeth. The effects tend to be most prevalent among children without early and consistent access to preventative dental health care. The health impacts range from the need for dental surgery to negative effects on diet, sleep, and learning. Some studies indicate that the incidence of dental caries in young children, 2-5 years of age, may be as high as a quarter of all children (Berkowitz, 2003). Preschool programs, such as Somerville's Head Start, promote early dental hygiene and care with young children and their parents through screening and follow-up.

Behavioral and Mental Health

Early Prevention

Prenatal to early childhood is a vital life stage, as the brain develops more neurological synapses and connections than at any other time in life. The important early phases of language acquisition are supported by the creation of these multiple synapses, which create the neural pathways and interconnections needed to develop language and other important skills acquired early in life.

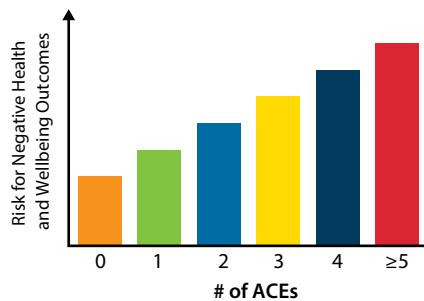
Adverse childhood experiences (ACEs) are stressful or traumatic events in a child's life. When children are exposed to chronic stressful events, their brain development can be disrupted. As a result, the child's cognitive functioning or ability to cope with negative or disruptive emotions may be impaired. There are numerous factors that constitute ACEs and have been widely studied (Substance Abuse and Mental Health Services Administration, 2017). The list includes:

- physical, sexual, or emotional abuse
- physical or emotional neglect
- victim of or witness to violence at home or in neighborhood
- mental illness or substance misuse within the household
- parental separation or divorce or an incarcerated household member
- unfair treatment due to race or ethnicity

Image 1: Lasting Effects of Adverse Childhood Experiences (ACEs)

ACEs can have lasting effects on...

- HEALTH**
(obesity, diabetes, depression, suicide attempts, STDs, heart disease, cancer, stroke, COPD, broken bones)
- BEHAVIORS**
(smoking, alcoholism, drug use)
- LIFE POTENTIAL**
(graduation rates, academic achievement, lost time from work)



As shown in Image 1, research indicates that higher prevalence of ACEs (LC-02) can be associated with higher risks for health issues later in life such as risky health behaviors, chronic health conditions, limited life potential and earlier death. Communities can help support safe, stable, nurturing relationships and proactive environments to protect children from maltreatment and promote a context in which they can thrive.

Enhancing protective factors can positively influence a young child's development and can mitigate the effects of ACEs. Successful early child development includes gaining the ability to understand and manage emotions, to interact well with others, to share, to follow directions, to recognize "right" and "wrong" and to demonstrate imaginative play, skills critical to positive outcomes at any age. Development of self-regulation skills has lifelong benefits. Programs such as Al's Pals or Second Step are used by a number of Somerville preschool providers, including the public schools, to help build these crucial skills and to develop a culture of understanding and caring. A preventative measure for overall childhood health is to educate the public, providers and parents on the importance of developmental milestones, helping set children on a successful and healthy lifelong path.

Early and periodic screening (LC-19) can help identify risk factors and developmental delays early in life, increasing the likelihood of key interventions during a child's formative years. Most children have regular well child visits with a Pediatrician or other Primary Care Provider, where screenings are done regularly in the health care office. For instance, children ages Birth to 5 seen at CHA for well child care are screened at each visit with a validated behavioral/developmental screener called the Parents' Evaluation of Developmental Status (PEDS). In addition, all children are screened using a validated tool for Autism Spectrum Disorder, the Modified Checklist for Autism in Toddlers (M-CHAT), at 18 and 24 months.

Results from these screening tools, combined with clinician concern or specific medical diagnoses (e.g., prematurity) result in referrals to an Early Intervention (EI) program in the 0-3 age group, or income eligible programs such as Early Head Start. For 4-5 year olds, the same process results in a referral to the Somerville Public Schools for an educational evaluation and Individualized Education Plan (IEP), according to federal and state policies that support children who have special learning needs. Early Intervention services for 470 Somerville children in 2016-2017 were provided by two local providers, the Guidance Center/Riverside and Eliot. Such services are provided largely in the family's home, offering developmental supports through professionals such as Speech, Physical or Occupational Therapy and Social Work.

In the community, the Somerville Family Learning Collaborative (SFLC) provides free developmental screenings for children 1 month to 5 years, using the "Ages and Stages" system. This SFLC program also offers resources and strategies to support families in becoming their child's first teacher. For children over 3, the Somerville Public Schools provides screening and assessment when it is suspected that a child may have a disability that would interfere with participation in regular education programs, in accordance with the federal Individuals with Disabilities Act (IDEA 2004) and state regulations on Special Education 603 CMR 28.00.

Postpartum Depression

The MA Department of Public Health collects data on postpartum depression, defined as “clinically significant physical, emotional and behavioral changes presenting in childbearing women following delivery.” It can manifest in the form of anxiety, depression, despair and/or somatic symptoms that persist for a minimum of two weeks. Data shows that nationally, nearly 1 in 5 women will experience depression or anxiety in pregnancy or postpartum. Higher prevalence has been noted in unmarried mothers or those with less than a college education. In Massachusetts, MotherWoman is a nonprofit, with local branches in the state working to support moms, build community safety nets and promote related public policy, such as the 2017 MA Pregnant Workers Fairness Act: Eliminating Pregnancy Discrimination.

Reporting from CHA to the Massachusetts Department of Public Health in 2016 indicated that of the total of 865 women from the area who had postpartum visits at CHA, 93.2% were screened for postpartum depression and 4.6% screened positive, indicating the need for further investigation and/or treatment.

Substance Use Disorder/Addiction

Public health literature draws linkages between adverse childhood experiences and the incidence of mental health issues, such as depression, and substance use disorders later in life. Recommendations for prevention focus on helping children develop social/emotional awareness and coping skills early in life as a means of reducing future risky behaviors such as substance use.

Directly addressing parents’ substance use can have positive impacts for children. Local programs such as CASPAR’s New Day program and the Parenting Journey’s Sober Parenting program strive to provide supports for pregnant women and new moms or for parents who are actively working towards recovery, therefore also supporting the future health of their young children. Research findings encourage an increased

focus on identifying pregnant women at risk for alcohol and/or other substance use or depression and connecting them to treatment and other services.

Physical Health and Development

As children grow, opportunities to play help build social-emotional skills and establish lifelong habits of healthy eating and physical activity. Play and exercise build strength in large muscles necessary for activities such as running, core muscles that help sustain postures required to sit in a chair and small muscles like those that are used to hold tools to draw, write and manipulate small objects. Somerville has a wealth of parks and opportunities for children to play, though the utilization of these recreational opportunities may not be universal. Active play time for some young children is limited by factors such as parents’ work hours or immigrant families’ fears of safety in public settings. “Small Steps: Eat, Play, Sleep” is a local effort to promote lifelong habits of healthy eating, physical activity and adequate rest, geared to children Birth to 5. Free resources with evidence-based suggestions for eating, playing, sleeping and reducing screen time are provided for Birth to 9 months, 9 months to 3 years and 3-5 years, all available for download online at the Somerville Hub.



Obesity

Childhood Obesity (LC-32A) is closely linked to physical health and has social-emotional implications such as increased risk for bullying and decreased social interactions. Massachusetts data from 2014, specific to 2-4-year-old WIC participants, reported 16.6% of children in the program were obese, with improvement noted in the past decade with rates leveling off or slightly decreasing (The State of Obesity, 2016).

- Between 2013-2015, of the 1,101 CHA patients aged 2-5 years who lived in Somerville who had an office visit with a body mass index (BMI) measurement, 32.2% of the children were overweight (BMI percentile \geq 85% and <95%) or obese (BMI percentile > 95%) (CHA).
- Of these, the percentages for overweight/obese were highest for children whose records indicated ethnicity as Portuguese/Azorean (63.6%), Latino -Central American/Mexican (46.6%), Other Latinos (40.5%) and African American (38.5%).
- For obese children aged 2-5, 15.2% of the total, the highest percentages were 25.7% in Latinos from Central America/Mexico, 20.4% of Latinos from the Caribbean, 17.5% of Other Latinos, and 17.2% of African American children.

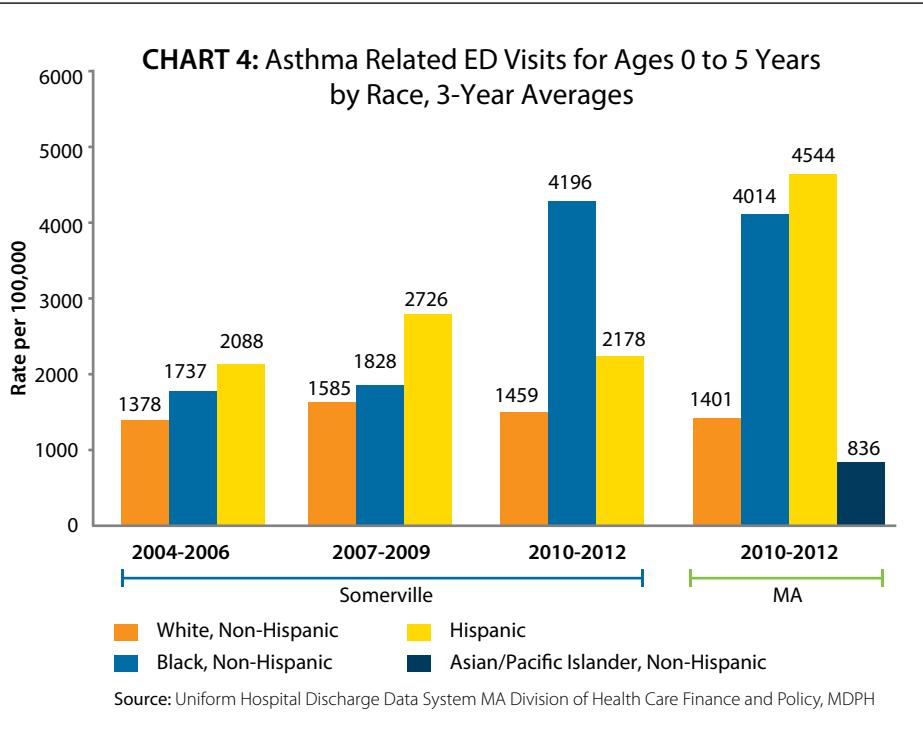
The American Academy of Pediatrics (AAP) recommendations for beverages for toddlers and preschool age do not include fruit juice or sugar sweetened beverages (AAP, 2017). Further research indicates that beverages consumed during pregnancy also have an impact. A recent study showed that children of mothers with a higher consumption of sugar sweetened beverages during the second trimester of pregnancy had higher obesity levels, even when controlling for children's intake (Gillman et al., 2017). Each additional serving per day for a mother, during pregnancy, appeared to account for $\frac{1}{2}$ pound of additional weight by age 8. A report in the International Journal of Epidemiology implicated diet or artificially sweetened beverage consumption by pregnant women with gestational diabetes as potentially linked to the 50% higher



risk of being overweight or obese for their children by age 7, in comparison to those born to mothers with gestational diabetes who drank water instead of diet beverages (Zhu et al., 2017).

Sleep and Screen Time

Babies and toddlers need lots of sleep: 12-16 hours per day before the age of 1 year, 11-14 hours including naps from 1-3 years and 10-13 hours from 3-5 years (Paruthi et al., 2016). In addition to suggestions for developing healthy sleep habits, guidelines for making decisions related to exposure to screen time are important for the parents of very young children. The proliferation of smartphones, tablets and multiple viewing options has increased the time children spend looking at electronic devices. The American Academy of Pediatrics recommends that screen time should be avoided for children under 18 months (with the exception of video-chatting). Parents of children 18-24 months of age are encouraged to limit screen time and to be present with the child. From 2-5 years, the suggested limit is 1 hour per day of "high quality programming" (AAP, 2016). Tools such as the Family Media Plan online toolkit can help families to set healthy media habits early in life.



Respiratory Health

Utilization of emergency department visits for asthma (LC-38) is another early childhood health indicator. Improving asthma management is focused on reducing critical episodes that require emergency care. The Canadian Childhood Asthma Primary Prevention Study utilized an intervention that included reduction of home allergens and environmental tobacco smoke prenatally, encouraged breastfeeding, and home interventions prior to birth that tracked a birth cohort for 7 years, finding significantly less asthma diagnosis and or related symptoms (Chan-Yeung, et al.).

- Based on the data in Chart 4, an average over the period of 2010-2012, asthma related emergency department visits for Somerville children under 5 were highest for Black children, almost double the rate for

Hispanics/Latino and three times the rate for White children. Data on Asian/Pacific Islander, non-Hispanic was not available for Somerville indicating lower than reportable levels (MA DPH, Uniform Hospital Discharge Data System, Massachusetts Division of Health Care Finance and Policy).

- Reflected in Chart 4, there was a decrease in the rate of asthma related emergency department visits by young Hispanic/Latino children between 2007-2009 and 2010-2012.

Education

A mother's education level at birth is a health indicator (LC-21) for the child in later life, with links to socioeconomic position throughout early childhood. Between 2010 and 2016, the percentage of births to Somerville mothers with some post high school level education increased from 32.3% to 44.8%, while the percentage with less than a high school or high school only education background decreased from 31.4% to 12.8% (MA DPH, Registry of Vital Statistics).

Early Childhood Development (EMC-1) objectives for young children include increasing the proportion of children who are ready for school in all five domains of healthy development: physical development, social-emotional development, approaches to learning, language and cognitive development. The Somerville Public Schools, in collaboration with community partners, are working toward a strategic continuum of early childhood education services. A multi-sector Early Education Steering Committee helps guide the movement towards universal Kindergarten readiness. This includes attention to issues including systemic equity, access, multilingual capacity and culturally responsive teaching, community engagement and support and high quality educational programming.

In Somerville, there are a range of programs aimed at early learning opportunities, such as the following:

- Head Start, offered by the Community Action Agency of Somerville, provided services for 195 children ages 3-5 in 2016-2017.
- SomerBaby's goal is to welcome new babies to Somerville. The pilot City program provided welcome baby bags, useful baby supplies, community resources, and a home visit for up to 100 new parents in the city in the first year, in collaboration with local providers.
- The Riverside Somerville Early Head Start program served at least 107 children in 2016-2017.
- The Parent Child Home Program of Somerville Family Learning Collaborative (SFLC), a home visiting program with a goal of preparing children to enter school "ready to learn," served 41 children in 2016-2017. Parents learn to promote language and literacy development skills during these home visits. This program is particularly focused on serving families that may be dealing with multiple factors such as poverty, language barriers or other forces that can impede a child's normal development.
- The Informal Providers Home Visiting Program served another 65 children.
- The Somerville Family Learning Collaborative (SFLC) Playgroups served 570 families in 2016-2017.

Additional initiatives in the city are focused on fostering early development and learning. Increasing the proportion of parents who use positive communication with their child (EMC-2.2) and who read to their young child (EMC-2.4) are goals of programs like Project READ at CHA and the SFLC Family Talk Somerville campaign launched in Fall 2017. Such efforts promote "Serve and Return" interactions, those back and forth exchanges between a young child and caring adults that facilitate neural development leading to language and other learning.

Quality and affordable child care and preschool have been consistently identified as a top priority for Somerville parents and children. Afford-



Massachusetts had the highest cost of infant and toddler care in the U.S., according to a Child Care Aware 2015 report (Parents and the High Cost of Child Care, 2015), with full time care often rivaling or exceeding the amount families pay for housing.

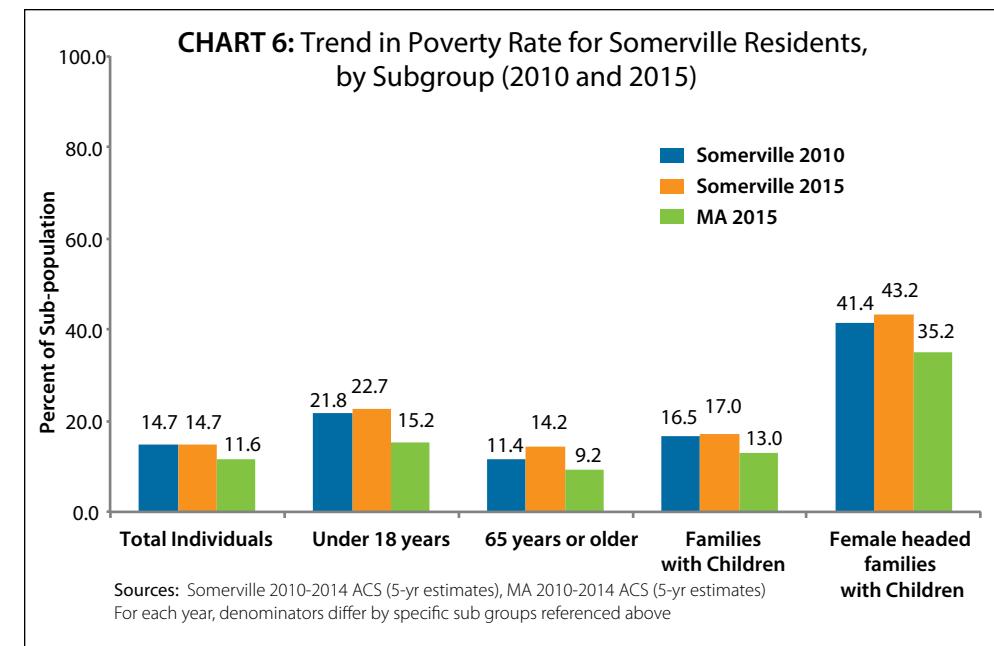
ability is a challenge for many families, as can be finding programs that provide care for the hours that working parents need to make an income to support their family. Somerville has seen an increase in center-based child care businesses in the city, with a range of affordability. Another option is family based childcare, both formal and informal, offered in a provider's home. Family based childcare arrangements expand the local capacity to address the diverse language, cultural and scheduling needs of families. In the 2016-17 school year, 93% of young children had early education and/or care experiences outside the home before entering Somerville Public School Kindergarten. More detailed information about the range of childcare options for Somerville families is available at the Somerville Hub.

Economic Stability

Research shows a direct correlation between low income and low birth weights in the U.S., compared to the United Kingdom, Canada and Australia. The impact in the U.S. was more pronounced than in other countries, which all have stronger national government support for healthcare (Martinson and Reichman, 2016). Income distribution is an area which has seen significant change in the country, and locally, over the past decade, with more economic growth for the wealthy. In 2017, the poverty threshold was \$24,600 for a family of four (US Census Bureau, 2017). This is the minimum income that the federal government considers necessary to meet basic needs and is adjusted for family size to determine poverty rate. The official poverty definition refers to money income and does not include noncash benefits such as subsidized housing, health care or Supplemental Nutrition Assistance Program (SNAP). Significantly for Somerville and the region, it is not adjusted based on geographical variations in cost of living. U.S. data from 2011-2015 for Somerville indicates the overall poverty rate was 14.7% (American Community Survey).

According to ACS 2011-2015 five year estimates, the Median Household Income in Somerville was \$73,106. For the five years prior, the Median Household Income was \$61,731 (in 2010 dollars). Adjusted for inflation, 2010 Median Household Income was \$67,098.80 (American Community Survey). Chart 6 is repeated from Demographics, as poverty is such a critical issue impacting early development.

- 43.2% of Somerville female-headed families with children and with no husband present were living in poverty, a 2.6% increase since 2010, consistently higher than the state rate.
- 22.7% of Somerville children under 18 were living in poverty as of 2015, an 8.2% increase since 2010 and higher than the state rate of 15.2%



Housing

Safe, affordable and accessible housing is increasingly a more challenging goal to achieve in Somerville. The population has shifted as both rents and the cost of purchasing a home have risen dramatically over recent years. Stable and safe housing is a strong facilitator of childhood health and wellbeing. According to the SomerVision Comprehensive Plan, over 60% of the Somerville housing stock was constructed prior to 1940, posing higher risk for environmental safety concerns such as lead and state of disrepair or aging systems as the housing stock gets older. Also, the number of units that can support families has shifted over the past decades with the rise of condominium conversions and few new units being constructed with 3 or more bedrooms, adequate for larger families.

Somerville has two public housing locations for families and individuals, both federal and state funded, at Mystic View and Clarendon Hill. For Senior and Disabled Housing, there are nine public housing locations in Somerville. Staff from local agencies report that families are doubling up and becoming overcrowded in order to afford to remain in Somerville.

According to the City of Somerville's 2015 Sustainable Neighborhoods report, the 40R statute is being utilized to require that at least 20% of all housing units developed in the city's overlay district be affordable to households below 80% of area median income (AMI). With the City's SomerVision Comprehensive Plan for 6,000 new housing units by 2030, this would equate to an additional 1,200 permanently affordable units in the city.

Employment and Living Wage Jobs

Increasing costs of housing, as well as health care and child care, have outpaced increases in income over the past decade. Paid parental leave policies can provide a brief respite for new parents, yet many parents have no paid time off when a child is born. Infant care is very challenging to arrange and afford for many families, requiring creative

juggling, often engaging several generations and a patchwork of arrangements. The state of Massachusetts has passed a Pregnant Workers Fairness Act that support protective factors for the future health of today's young infants. The Act requires "reasonable accommodations" for pregnant women, time off after childbirth and accommodations to support breastfeeding.

- According to the 2017 Living Wage Calculator, to support a family of two adults and two children at a living wage in the Boston-Cambridge-Newton metropolitan area requires two adults making \$17.27/hour each.
- Massachusetts had the highest cost of infant and toddler care in the U.S., according to a Child Care Aware 2015 report (Parents and the High Cost of Child Care, 2015), with full time care often rivaling or exceeding the amount families pay for housing.
- Full day tuition for center-based care in Somerville averages \$25,000 for infants and \$16,000 for preschool age children.



Food Security

Food Security (LC-09) is increasingly recognized as a positive predictor of healthy child development. Food insecurity in the home is acknowledged as an indicator of potential risks. The Massachusetts statewide level of food insecurity was reported at 9.6% as of 2015, but was 19.9% for households with children under 6 years old, according to Project Bread. Early nutrition is critical for setting a foundation for life-long health and learning. Before birth, the mother's diet influences the development of the unborn child, including neurodevelopment. In young children, nutrients and minerals provide the fuel for the growing brain, which is rapidly developing in this life stage. The study of epigenetics looks at how the expression of an individual's genes are impacted by external factors. Research indicates that factors such as mother's diet and nutrition during pregnancy and her weight status can impact future health outcomes over generations.

Financial stressors make it more challenging to support a diversity of foods in a child's early years, potentially limiting food options. Programs like WIC provide nutritional counseling and access to healthy foods and assistance with breastfeeding to address the income inequities that can lead to disparities in development in early childhood. WIC has been shown to be a cost-effective strategy to address both immediate nutrition needs of children as well as to impact later health and academic achievement (Carlson and Neuberger, 2017). Massachusetts Pregnancy Risk Assessment Monitoring System (PRAMS) data, though the most recent data is from 2011, demonstrated at that time the highest usage of WIC at the state level was among mothers under 20 years old (90.4%), living at or below 100% of the federal poverty level (86.9%), with less than a high school education (81.9%), on Medicaid (81.3%), unmarried (80.3%), Hispanic/Latino (79.7%), or born outside the US (56.7%) (MA PRAMS, 2011).

- In 2016-2017, CHA piloted the use of a validated food security screening tool, the Hunger-Vital Signs, at Somerville Pediatrics. An average of 20-25% Somerville children's households met the criteria for food insecurity during the pilot. In addition to immediate resources, referrals were

made directly to Project Bread's hotline service for follow up phone calls to connect families to available resources, including SNAP benefits (CHA).

- WIC Nutrition Services (LC-18), are provided locally by CHA through Somerville and Cambridge offices. The WIC Somerville case load as of June 14, 2017, was 1,834. Massachusetts data on pregnant mothers from 2015 indicates that statewide, 33.8% received WIC supports during their pregnancy. Of those, 72.5% were Hispanic/Latino, 61.9% Black, 24.9% Asian and 18.9% White (MA DPH, MA Births 2015).
- The statewide calculator for SNAP gap estimates that as of 2016 data, 61% of those who are income eligible for SNAP in Somerville are not accessing these available financial benefits. Various reasons for this gap include the fear of accessing government resources, which also impacts WIC participation for families with young children (Food Bank of Western MA, 2017).

Natural and Built Environment

Neighborhoods that are usually or always safe, as well as neighborhoods that are supportive, are two of the National Survey of Children's Health set of indicators. From 2010-2012, Massachusetts was on par with the national data sets for these indicators.

Somerville data indicates that overall crime decreased, with 739 arrests in 2016 compared to 967 in 2010 (Somerville Police Department).

Transportation

Attention to walkability, increasing safety and public mobility access for young families is part of the overall city approach to making sure that Somerville is a great place to live, work and raise a family. In collaboration with local organizations and the City, WalkBoston created a number of walking maps and a map of parks to inspire residents to get out and explore nearby resources across the city by foot or by bike.

According to the 2012 SomerVision Comprehensive Plan, 30% of Somerville commuters utilize public transportation. Increasingly, young

families are attracted to Somerville for its rich mix of bike and pedestrian infrastructure and public transit that can reduce the need for car travel for the able bodied. The extension of the MBTA Green Line and the Community Path will provide additional transit options, bringing the transit network close to home for 85% of city residents.

Access to Nature and Open Space

As the positive social, emotional and health benefits for children connecting to nature become better recognized, communities like Somerville make efforts to address related challenges in the urban environment. There are 32 playgrounds, including tot lots, in the City, as part of the overall open space resources. Neighborways is a community based initiative reclaiming neighborhood street space to facilitate safe fun for all ages, with an emphasis on the younger generation. The Somerville Recreation Department and sports leagues increasingly offer organized outdoor time opportunities for all ages of children.

Environmental Health

The drinking water supply for Somerville is provided through the Massachusetts Water Resources Authority (MWRA) system, which also provides the sewage disposal systems. The drinking water is sourced from Quabbin Reservoir in Western Massachusetts, traveling through a series of tunnels and pipes, including treatments such as added fluoride, along the way. The water is tested regularly, and results are publicly available. The incidence of contaminated water in Flint, Michigan in 2015 raised public attention to safe drinking water issues. In Massachusetts, some residences still have old pipes, containing lead, so it is recommended to let water run a few minutes to flush the pipes before collecting water for drinking or cooking.

Lead poisoning has declined in the United States in recent decades due to efforts to increase awareness, reduce exposure and lead contamination and screening policies. Children are exposed to lead by inhaling



lead dust, eating soil or paint chips that contain lead or drinking contaminated water. Lead is not easily absorbed through the skin. The cases of elevated blood lead levels among children in Somerville have declined from 5.17% in 2001 to 1.01% in 2013 (three-year average estimates) (MA DPH, Registry of Vital Records and Statistics). In Somerville, 57 units of Somerville housing have been de-leaded since 2012, with financial assistance through city grant funding from the federal government. Somerville was awarded continued funding to support lead abatement in 2017.

Poor air quality can cause high blood pressure and other health issues among pregnant women as well as low birth weight, premature births, and behavioral problems for young babies. Living within 100 feet of major highways can have negative health impacts, such as asthma, due to air pollution. Overall, children are more vulnerable to such pollutants in the environment. Locally, Tufts University has partnered with local activists and the City to better understand where and when the impacts from Route 93 are the greatest and has explored ways to mitigate the exposures to ultra-fine particles as part of the Community Assessment of Freeway Exposure and Health Study (CAFEH).

Climate Change

The global increase in number of days per year that qualify as heat waves has special implications for very young children.

Young children are more vulnerable to extreme heat, poor air quality and insect-borne diseases. One reason for this is their limited ability to communicate when overheating or when left in dangerous situations; each year in the U.S., close to forty children die from heat exposure, typi-

Insect-borne diseases, such as Lyme disease and West Nile virus, are on the rise in Massachusetts (MA DPH).

cally in cars (Willingham, 2017). In addition to greater physical frailty, children are less self-sufficient, more reliant on adults for transportation and other needs and less likely to cope emotionally during a disaster or climate event. These impacts on children often have a ripple effect on families and economics. If school is closed or daycares are unable to function due to weather, parents need to find alternative childcare options. This may impact the ability of parents to go to work and, therefore, impact the family's income, as well as the productivity of the businesses where parents are employed.

Insect-borne diseases, such as Lyme disease and West Nile virus, are on the rise in Massachusetts. Research indicates that increases in temperature linked to climate change are projected to cause a correlating increase in the risk of insect-borne diseases. Lyme disease can reportedly also be transmitted to children in utero or through breastfeeding. Impacts to children's health can include a wide range of ongoing physical, behavioral and cognitive problems.

Social and Community Context

Social and community supports are integral to health and wellbeing, from when parents are expecting a child, through the growth and development of that child and into adulthood. The World Health Organization defines a healthy community as, "... one that is continually creating and improving those physical and social environments and expanding those community resources that enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential."

Race

The prenatal period is an especially vulnerable time for women and babies of color. Experiencing stress uniquely tied to racial discrimination and/or lacking access to culturally responsive health care and other core service needs during pregnancy poses health risks to both mother and

baby over the short and long term. According to the 2011 Massachusetts Pregnancy Risk Assessment Monitoring System Report (PRAMS) report, overall, about 3% of Massachusetts mothers reported “feeling stressed due to their race/ethnic background,” 3% of mothers reported “feeling emotionally upset as a result of how they were treated by others,” and about 3% reported “experiencing physical symptoms related to treatment based on their race/ethnic background.” Minority mothers reported more negative experiences due to racism.

Research in recent years is suggesting that intergenerational stress can negatively affect the health of newborn babies, based initially on empirical evidence from Holocaust survivors. This work is based on genetics, environment, parenting, and social learning, and is demonstrating that stress can cause detrimental biological changes across generations as transmitted via gametes, the gestational uterine environment, and early postnatal care (Bowers and Yehuda, 2017).

Social Safety Network/Social Support

Social supports and resultant safety networks can generate from varied sources. Extended family and/or close friends may offer companionship, wisdom, solace and assistance. There has been a rise of “blended” families, with adults bringing children into the home from different marriages, and grandparents living with younger generations or, in some instances, raising grandchildren on their own. For some families with young children, a faith-based community may provide both spiritual and social supports. For others, support may manifest through virtual communities. One local media venue, the SomervilleMoms listserv, has grown since forming in 2003 to include almost 5,000 members, providing a forum for sharing parenting topics, with a Somerville focus.

Literature raises the concern that social media connections may not be protective against social isolation. Interventions such as home visiting programs have been demonstrated to help support new parents, connecting them to resources promoting positive parenting and child development.



Social media

Family service providers report high usage of screen time and social media by parents/guardians and a rise in screen time for infants and toddlers, which the providers observe as changing the levels of direct interaction between children and adults. Initiatives such as the Talk Time campaign launched in Fall 2017 are geared to promote authentic interaction between parents and children as an alternative to screen time while building protective emotional connections and promoting early literacy.

Strategies for creating social media plans and screen-free times for adults as well as children can help promote greater interpersonal interactions and connections. Social media can have positive impacts on building community connections, essential to creating social networks and support systems.

Violence

Abuse or a history of domestic violence in the home of a young child is one of the adverse childhood experiences that has been shown to increase risk for health and wellbeing in later life stages. The Somerville Police Department tracks how many domestic assault calls involve youth. From 2010-2016, the range varied from a low of 13% in 2010, to a high of 25% in 2013 and was most recently at 18% in 2016, which equals 35 cases in 2016 that involved youth (of any age).

Community Engagement

Parents of young children benefit from meeting with other parents, especially as many of them do not have the close familial support that past generations took for granted. Some families do have grandparents nearby, who can assist with childcare and child rearing. Opportunities such as programming for children at the public library or SFLC Playgroups and Parent Groups provide positive development time for infants and toddlers, while also creating community for parents.

Another important aspect of the work of the Somerville Family Learning Collaborative is leadership development for parents and guardians. These opportunities include skills building on how to advocate for your child, English as a Second Language classes, and parent forums. A number of community organizations, such as Parenting Journey, Mystic Learning Center and The Welcome Project also offer opportunities for parents to be actively engaged in learning about and promoting their own health and wellbeing as they also facilitate the positive development of their children.



Recommendations for Prenatal & Early Childhood

Birth-Age 4

■ Increase access to health promoting resources for all women of child-bearing age, new parents, infants and toddlers

- Increase percentage of all pregnant women receiving early and adequate prenatal care, specifically engaging pregnant teens
- Reduce teen pregnancies with sensitivity to culturally diverse norms
- Support programs, policies and language that recognize the vital role that fathers and male role models have in children's and families' lives



■ Create lifelong habits to promote mental and behavioral health and prevent Adverse Childhood Experiences.

- Identify, engage and support parents with depression, with an emphasis on postpartum depression
- Provide professional development for childcare providers on how to enhance protective factors that positively influence a young child's development and mitigate risk factors

- Convene Prenatal Early Childhood forum to integrate services of health, non-profit, school and clinical providers
- Increase early screening and referral to Early Intervention and connection to supportive community resources, for all families

■ Facilitate a community with strong social networks and support systems

- Improve access to quality, affordable child care for all; define community standards
- Explore policies to support equitable family leave
- Bring to scale and sustain culturally and language appropriate home visiting program for all newborns and their parents
- Increase knowledge and skills to promote positive child development and build social networks for caregivers

■ Create lifelong habits to promote physical health for all children

- Promote and adopt policies related to evidence-based strategies to facilitate children being ready for kindergarten
- Utilize the Shape Up Under 5 campaign materials to inform a community wide approach to healthy eating, physical activity, sleep and screen time
- Raise awareness and utilization of the City's lead abatement programs
- Identify links between built environment and housing with respiratory health/asthma prevention for young children



School Age/Adolescent

Introduction

Following the earliest years of life, the time between the ages of 5–18 years continues to be a period of rapid growth and development. Coinciding with grades K-12 in the public school system, this life stage is exciting and ever-changing. As a result of both the growth and developmental changes within the brain, children and teenagers experience transformative increases in multiple capacities. These changes impact fine and gross motor skills, cognitive abilities to process and respond to information and awareness of and ability to engage with the world around oneself. Even in the presence of adversity, children and adolescents often flourish. This is a testament to the resiliency of youth and a reminder of how much is at stake in supporting the positive development of the next generation. Moving into the pre-adolescent and adolescent years is also when much of individuals' sexual maturation occurs. Experiences during this life stage are both informed by the early years and often predictive of later years.

As children and teens continue the journey begun at birth toward greater independence, good health provides them with the confidence and ability to take appropriate risks, experiences essential to growth and development. Having safe, enriching places to be with their families and

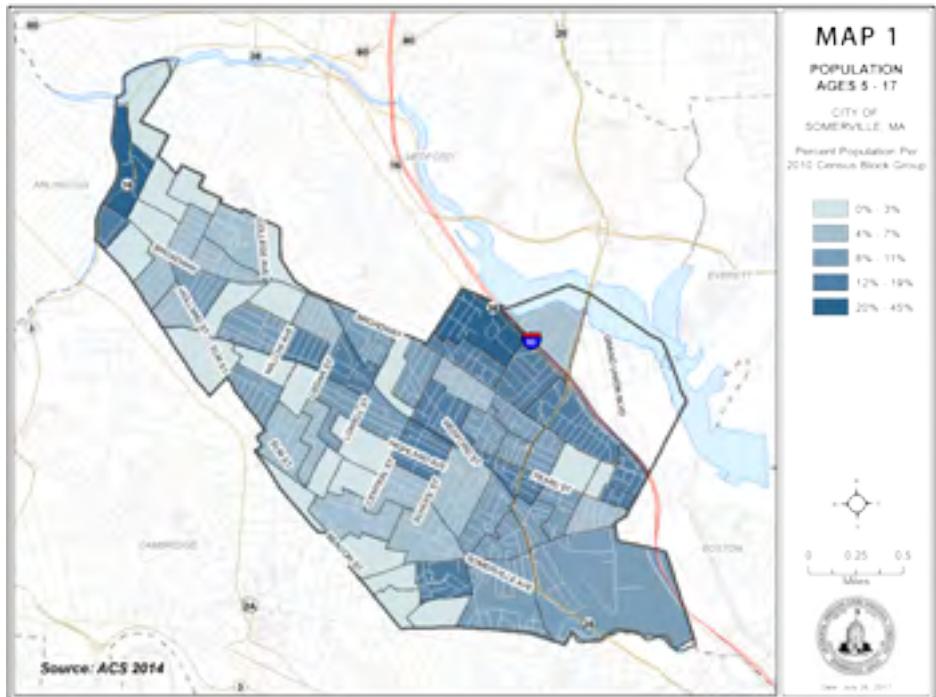
Coinciding with grades K-12 in the public school system, this life stage is exciting and ever-changing. As a result of both the growth and developmental changes within the brain, children and teenagers experience transformative increases in multiple capacities.

also without their primary caretakers continues to be very important, as risks for accidents, injuries and abuse (at one's own hand or that of others') remain high during these years.

For many, the school age years mark the beginning of spending greater amounts of time with people outside of immediate family, offering opportunities for new challenges and new risks. With school, friends and the community taking on larger roles in shaping these young people's experiences, wholesome and safe social and built environments are integral to child and teenage health and wellbeing. Access to health care of all kinds (preventative, primary, emergency, dental and behavioral) supports and reinforces messages and modeling youth are receiving and helps to ensure positive development. These diverse forms of support also play key roles in helping children and teens practice habits that can influence health and wellbeing through the rest of their lives.

Given that having success in academic realms such as literacy and numeracy are key indicators of later self-sufficiency, wellbeing and behaviors that contribute positively to society, the school age years are optimal ones to highlight various ways that health, education and social interactions intersect.



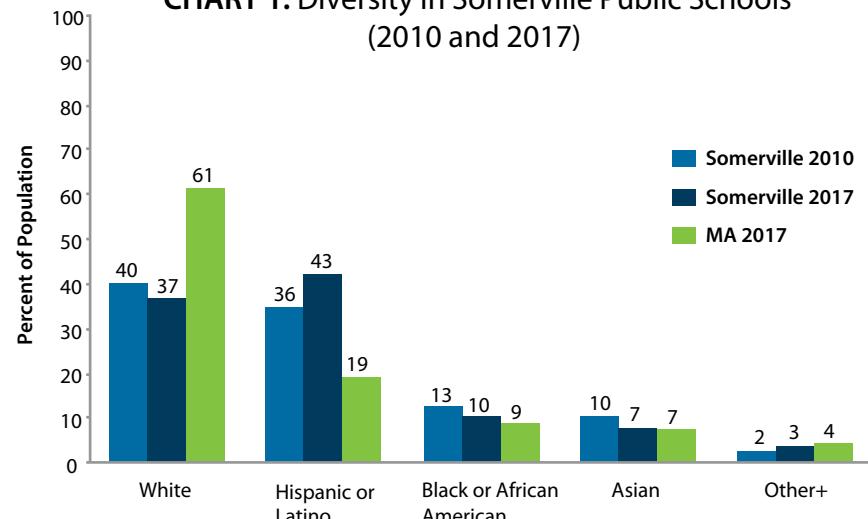


Demographics, age specific

According to 2015 U.S. data, 2.8% of the city population was 5-9 years, 3% was 10-14 years and 4.8% was 15-19 years (American Community Survey). As indicated on the map, the highest concentration of youth (5-17 years) is found in census blocks where family public housing is located. A number of census blocks have less than 3% of their population in this life stage group.

The racial/ethnic demographics of the Somerville school age population are more diverse than the overall population in the city. The capacity of local service organizations to meet changing language and cultural needs is compounded by the growing disparity in wealth. This can impact the perception of need in a community like Somerville, at the same time that the support needs for some residents are on the rise. Chart 1 above is repeated from the Demographics chapter, due to its relevance to the school age experience in Somerville.

CHART 1: Diversity in Somerville Public Schools (2010 and 2017)

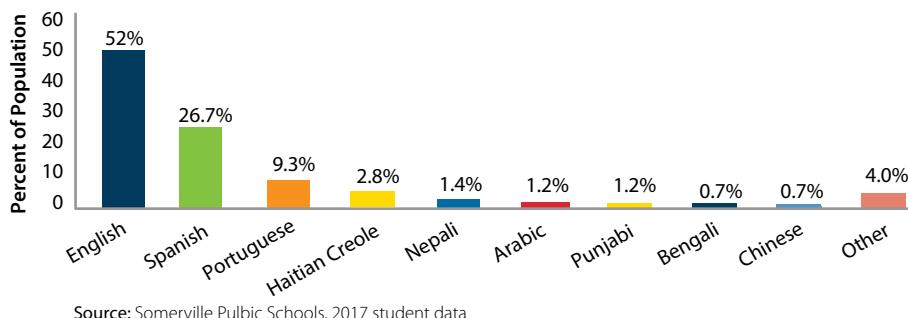


Other+ includes: American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, Some Other Race, and Two or More races

Source: MA Department of Elementary and Secondary Education

- According to Chart 1, between 2010 and 2017, the Hispanic/Latino student population increased from 36% to 43% to become the largest ethnic group in Somerville Public Schools (Massachusetts Department of Elementary and Secondary Education (MA DESE)).
- Additional data, not reflected in Chart 1, shows that the English Language Learners population in Somerville grew from 16.0% in 2010 to 19.2% in 2017, compared to 9.5% of MA students in 2017. The percentage of Somerville students' whose first language was not English, at 49.3%, was more than double the percentage at the state level (20.1%) in 2017.
- Chart 2 reflects languages spoken at home for all Somerville Public School students (Somerville Public School 2017 student data). High School specific data shows that Spanish is the most common non-English language, spoken at home by 26% of the High School students in 2016, followed by Portuguese (10%) and Another Language (10%) (Somerville High School (HS) Youth Risk Behavior Survey (YRBS), 2016).

CHART 2: Somerville Public School Students Languages Spoken at Home



- The Massachusetts Department of Elementary and Secondary Education (DESE) reports that 21.7% of Somerville students had a disability in the 2016-17 school year, compared to 17.4% at the state level. Students with disabilities may be living with a range of limited abilities including mobility, hearing, or vision impairment, learning disabilities, chronic health disorders, psychological disorders, autism spectrum disorders and more (MA DESE).
- Moreover, additional DESE data shows that 60.2% of Somerville students were classified as high needs in the 2016-2017 school year, higher than the 45.2% state average. A high needs classification includes students with disabilities, English Language Learners, students who are homeless or in the foster system, those who perform far below grade level and students who otherwise are in need of special assistance and support (MA DESE and U.S. Department of Education).

Access to Health Care

Health Insurance Coverage

Nationally, 6.1% of adolescents age 12-17 do not have health insurance coverage (Centers for Disease Control, 2017). The Healthy People 2020 (HP 2020) national target is 100% of Americans having insurance coverage. U.S. census data from the 2010-2015 ACS 5-year estimates,

indicates that in Somerville, 2.1% of children under 18 did not have health insurance. Somerville Public School (SPS) data indicates that, in 2016-2017, 14% of students did not have health care coverage at the time of enrollment into the schools. Of those with health insurance, 45% had coverage from MassHealth and 40% had private care coverage. Students and families enrolling in Somerville Public Schools are provided assistance with identifying and securing health care coverage. Health insurance provides a financial safety net for emergency situations and allows individuals to seek regular, primary care, which is essential for early identification, prevention and management of many long-term chronic illnesses.

Primary Care Provider

A national indicator for school age health is the proportion of children and youth who have a specific source of ongoing care (AHS-5.2). Based on 2015 data, 95.6% of youth across the U.S. have a specific source of ongoing care, approaching the 2020 target of 100%.

Those who do have access to a primary care provider should have an annual checkup. HP 2020 aims to increase the proportion of adolescents who have had a wellness checkup in the past 12 months (AH-1) to at least 75.6%. By 2015 that goal had already been surpassed as nationally, 79.5% of adolescents were reported to have had a wellness checkup in the last year. An option for Somerville students age 12 and above is the CHA Teen Connection, providing a range of clinical services for students at the school-based clinic within Somerville High. For some students, this center can serve as their medical home.

- As of 2015, CHA was the primary care provider for 3,270 of Somerville school age children 6-18, potentially representing health care coverage for over 65% of Somerville Public School students.
- In Somerville, the rate for wellness visits is higher than the national rate. In 2015, 91.6% of middle school students self-reported having had a checkup in the last year, and in 2016, 93% of high school students reported the same (Somerville MS and HS YRBS).

On average 92.4% of Somerville Public School students have full compliance with immunizations.

Immunizations

Up to date vaccinations help prevent the occurrence and spread of childhood diseases. Routine vaccinations are also an indicator of health access among youth, and the HP 2020 goals state a desire to increase routine vaccination coverage levels for adolescents (IID-11). In Somerville, like most communities, parents are required to provide documentation that their school-aged children have received required vaccinations before starting school. This includes children who attend public schools or state-licensed child care centers, family day care homes and developmental centers (and some private schools). Based on the guidelines of the Center for Disease Control (CDC), schools must enforce immunizations requirements, maintain records on all enrolled children and submit reports to the state health department. Children who have not received all required vaccinations or a valid exemption may be prohibited from attending school.

CDC vaccination guidelines include: Poliovirus vaccine (IPV), two doses of Measles, Mumps, Rubella vaccine (MMR), three doses of Hepatitis vaccine (HBV), two doses of Varicella (chicken pox) vaccine, and a booster dose of Diphtheria, Tetanus, Acellular and Pertussis vaccine (DtaP). In addition, children who are 11 or older and are entering the sixth grade must have proof they have received all of the above, and additionally at this age, children also need proof of receiving the meningococcal (meningitis) vaccine and the Tetanus Diphtheria Acellular Pertussis vaccine (Tdap).

On average 92.4% of Somerville Public School students have full compliance with immunizations and physicals. The rate of compliance can vary throughout the year as immunizations are time sensitive.

Oral Health

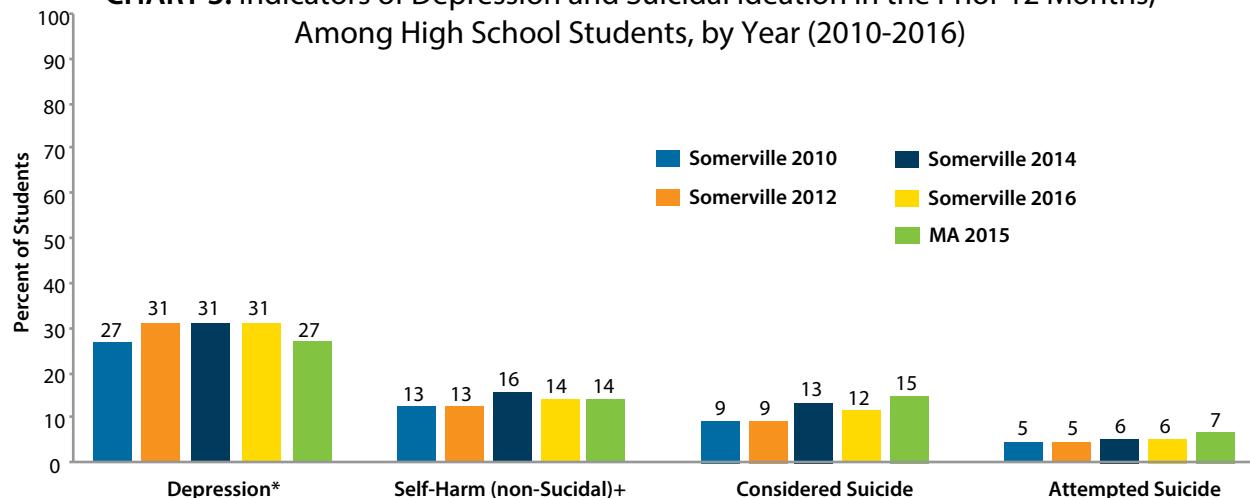
The Healthy People 2020 goals related to dental health care access (OH-7-9) include: 1) Increasing the proportion of children and adolescents who have access and used the oral health care system in the past year, 2) increasing the proportion of low income children and adolescents who received any preventive dental service during the past year, and 3) increasing the proportion of school-based health centers with an oral health component. Dental health access is challenging; even when insurance coverage is technically available, such as through MassHealth. Accessing services is very limited and often prohibitively expensive. In response to specific oral health needs identified in the High School, CHA's Teen Connection is partnering with SPS, Forsyth Institute, CHA Dental Services and Harvard Dental School to offer screenings, treatments, referrals and navigation support for more complex dental needs.

- In 2015-2016, 844 Somerville Public School students were referred by the school nurse to a pro-bono dental provider to receive dental screenings at the school, and when possible, sealants. Of these, 13% or 113 students had dental needs that required additional treatment (Somerville Public Schools).

Behavioral and Mental Health

The Association of Maternal and Child Health Programs identified depression among youth (LC-42) as an indicator for assessing adolescent wellbeing. A related behavioral health indicator is the suicide attempt rate among teens, and the Healthy People 2020 goal includes reducing suicide attempts by adolescents (MHMD-2 and LC-45). The national target for 2020 is that less than 1.7% percent of high school students attempt suicide and require medical attention as a result. Unfortunately, the percentage has increased to 2.8% nationally in 2015. Somerville does not have a measure of suicide attempts which require medical attention, but in 2016, 5.5% of high school students self-reported having attempted suicide, an increase since 2012 (4.5%) (Somerville HS YRBS).

**CHART 3: Indicators of Depression and Suicidal Ideation in the Prior 12 Months,
Among High School Students, by Year (2010-2016)**



Sources: Somerville High School (HS) Youth Risk Behavior Survey (YRBS) and MA HS YRBS

* Defined as feeling sad or hopeless almost every day for at least 2 weeks in a row

+ MA self harm data is reported for 2013

The Association of Maternal and Child Health Programs identified depression among youth (LC-42) as an indicator for assessing adolescent wellbeing.

- According to Chart 3, in 2016, 31.2% of Somerville high school students felt depressed, defined as feeling sad or hopeless almost every day for two weeks or more in a row, at some point during the prior 12 months (Somerville HS YRBS 2016).
- Additional high school health survey data, not reflected in the chart, shows that between 2012 and 2016, worry about school and social issues increased among Somerville high school students, while worry about family and gangs decreased.
- Self-harm, defined as hurting or injuring one's self on purpose, is similar to state rates, being reported at a low of 12.6% in 2012 to a high of 15.7% in 2014 for Somerville high school students. Females have almost double the rates of self harm in Somerville and statewide. In both 2014 and 2016, high school students who identified as White, Hispanic/Latino, or Other had higher rates of self-harm than Blacks or Asians. Students who self

identified as transgender in the 2016 survey also appeared to be more likely to report self-harm.

- The percent of Somerville middle school students who self-reported they had seriously considered suicide was 12.2% in 2015, while 3.0% of Somerville middle schoolers attempted suicide (Somerville Middle School (MS) YRBS, 2015).
- 16% of Hispanic/Latino Somerville middle school students seriously considered suicide in 2015, compared to 12% among all Massachusetts Hispanic/Latino middle school students in 2013 (Somerville MS YRBS 2015 and MA YRBS 2013.)

It is of great importance to promote positive social and emotional learning during this life stage to facilitate positive mental health in school and out of school. This could be in the form of group counseling,

the strengthening of youth-serving agencies, mentoring programs, education programs on drugs and alcohol and screening/brief interventions for children with early signs of emotional distress. Such programs can help increase school achievement and high school graduation rates, ultimately improving mental wellbeing throughout one's life. The City Health and Human Services Department includes a Clinical Youth Specialist who works closely with the Somerville Public Schools on assessments and access to further supports.

Substance Use Disorder/Addiction

Alcohol

Alcohol is the most commonly used and abused substance among youth in the United States. During the teen years, significant changes occur in the body, including the formation of new networks to the brain. Alcohol use during this time may affect brain development. Further, engagement in binge drinking as a teenager can lead to alcohol dependence later in life, and HP 2020 has set a goal that by 2020 fewer than 8.6% of adolescents ages 12-17 report binge drinking in the prior month.

- Among Somerville high school students, 7.9% of students engaged in binge drinking in the 30 days prior to being surveyed (Somerville HS YRBS, 2016).
- Since 2002, Somerville has seen a significant reduction in binge drinking. The high levels at that time (26.3%) triggered a strategic community wide campaign to address underage drinking, which appears to have been successful.

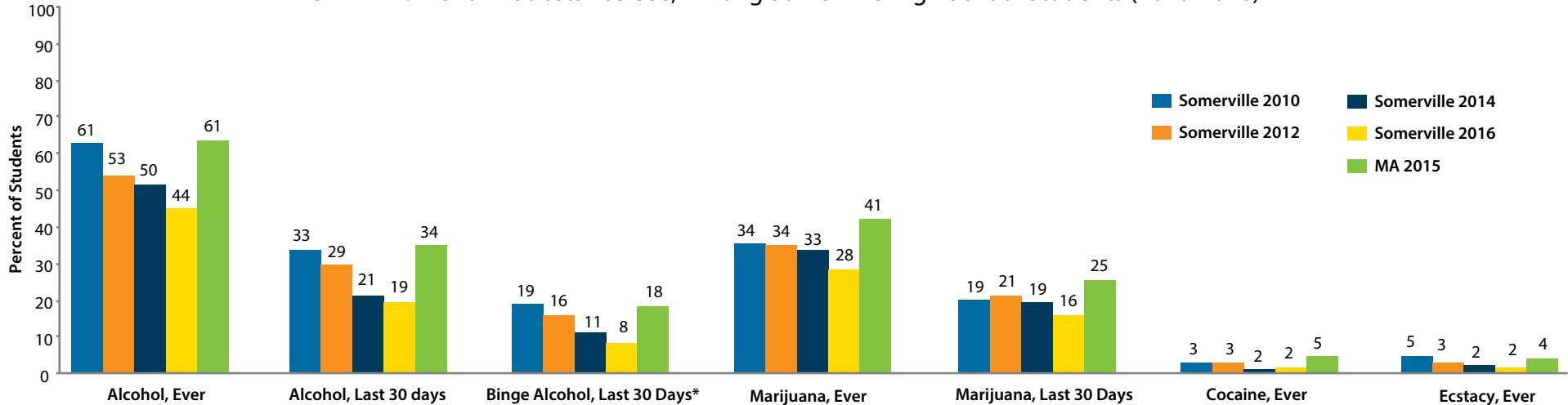
Illicit Drugs

Illicit drug use and dependence is a national crisis that is hitting Massachusetts particularly hard. In 2016, there were 1,933 confirmed opioid-related deaths (and an estimated 136 more) in MA, and 21 of those deaths were in Somerville (MA DPH, Current Statistics, Over-

dose Death Data). An important step in preventing opioid dependence later in life is to avoid any illicit drug use in adolescence. One Healthy People 2020 objective is to increase the proportion of adolescents who perceive great risk associated with substance abuse (SA-4) to at least 54.3%, based on a survey question asking how much people risk harming themselves.

- In Somerville in 2016, 89.4% of high school students perceived moderate or great risk associated with illegal drugs other than marijuana, indicating that Somerville is succeeding at substance abuse education for youth. Part of this effort comes from peer support for sobriety through Somerville Cares About Prevention (Somerville HS YRBS, 2016).
- As seen in Chart 4, use of all substances among Somerville high school students decreased between 2010 and 2016. Substance use rates for Somerville students in 2016 were lower than the statewide rates in 2015 (Somerville HS YRBS 2016, MA HS YRBS 2015).
- Substances which were used least frequently were not included in the graph above, but the data from 2016 indicates that only 0.5% of Somerville high school students had ever tried methamphetamines and 0.1% had used heroin or taken steroids without a prescription.
- Based on results from the 2016 high school Youth Risk Behavior Survey, 12.9% of Somerville 9th graders reported using a substance in the past 30 days for 2016. This was also the initial year of use of a substance use screening tool with high school students. The results were in a similar range as the YRBS data, with 15.4% of Somerville 10th graders reporting using a substance in the past year. The screening uses an evidence-based tool to prevent substance abuse, SBIRT, standing for Screening, Brief Intervention and Referral to Treatment.
- According to the 2016 YRBS, a higher percentage of females used marijuana "in the past 30 days" than males. However, more males reported using other types of illicit drugs than females.

CHART 4: Trend in Substance Use, Among Somerville High School Students (2010-2016)



Sources: Somerville High School (HS) Youth Risk Behavior Survey (YRBS), MA Youth Health Survey, and MA HS YRBS

*Binge drinking defined as 5 or more drinks in a row or within a couple of hours

Abuse of prescription drugs is also a risk factor for drug dependence and mental health disorders later in life.

- 2.9% of females and 1.2% of males self reported using anti-anxiety or anti-depression prescription medication without a prescription in 2016 (Somerville HS YRBS, 2016).
- 1.9% of Somerville high school boys and 1.7% of girls reported they had taken stimulants without a doctor's prescription in 2016.

Tobacco

Tobacco use starting in the teen years can lead to debilitating chronic disease later in life. Life Course Indicators and Healthy People 2020 goals both identify tobacco use among adolescents as a predictor of future health status. HP 2020 set a target to reduce the use of tobacco products by adolescents (TU-2.1) to less than 21% of those in grades 9-12 reporting tobacco use in the prior 30 days, and that target has

been well-surpassed, nationally (17% in 2015). The Center for Disease Control notes correlations between educational levels and tobacco use, with more education serving as a protective factor, with higher rates of smoking in those without a high school education. Males are more likely to use tobacco delivery products (cigarettes and e-cigarettes) than females.

- In 2016, 14% of Somerville students had ever smoked a cigarette, and only 5.3% reported smoking a cigarette in the last 30 days. In 2016, Somerville increased the tobacco purchasing age to 21, including the purchase of e-cigarettes, which should further decrease the percent of high school students who use tobacco regularly (Somerville HS YRBS, 2016).
- In 2016, 6.8% of Somerville high school students were currently using e-cigarettes, much lower than the rate for Massachusetts high school students at 23.7%.



Physical Education Program grant (PEP)

Between 2014 and 2017, Somerville was the recipient of the Carol M. White Physical Education Program (PEP) grant for \$1.4 million over three years to improve physical education programming and school nutrition in Somerville. The grant provided opportunities for increasing physical activity and healthy eating before, during and after school with a mission of creating a culture of healthy living among Somerville Public Schools (K-8) students and their families. Programs and initiatives included the BOKS before school program, Playworks recess program, SPARK curriculum, Waypoint Adventures, cooking clubs, National Nutrition Month celebrations, the 9-5-2-1-0 healthy message campaign and much more. Year three data for the grant showed improvements in measures including the number of students who engaged in the recommendation of 60 minutes of daily physical activity (79%) and the number of students attaining age-appropriate fitness levels (30%). A sustaining outcome of this grant was the development of a new public school position in 2017—the District Wellness Coordinator.

Physical Health

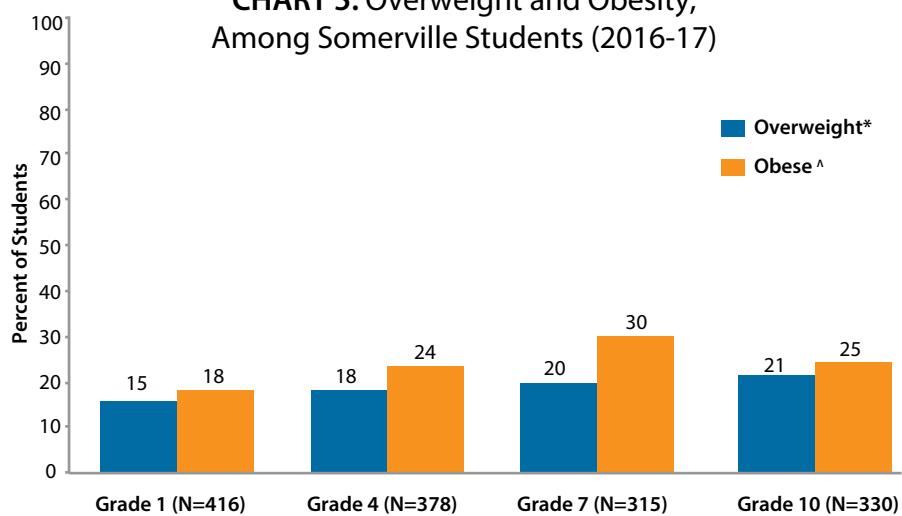
Childhood is a time of on-going physical growth and development. Good physical health at a young age can be a protective factor against many health problems in the future, such as diabetes, cardiovascular disease and respiratory difficulties. Regular well-child visits and recommended immunizations can help to support both physical and behavioral health, as these latter two health components become increasingly more integrated within the health care system.

Obesity

The obesity related life course indicator (LC-32) highlights the risk of various illnesses later in life as a result of childhood obesity. Obesity in childhood and adolescence can increase the risk of type II diabetes, heart disease, hypertension and depression and is considered a strong predictor of obesity later in life. Improvements in obesity rates can improve overall community health and quality of life (AMCHP). The Healthy People 2020 objectives include reducing the proportion of children age 6-11 and adolescents age 12-19 who are considered obese (NWS-10). The Office of Disease Prevention and Health Promotion (ODPHP) data indicates that nationally between 2011 and 2014, 17.5% of children age 6-11 and 20.5% of adolescents age 12-19 were considered obese.

- According to data related to Chart 5, in the 2016-17 school year, on average, 18.5% of a total of 1,439 Somerville students in grades 1, 4, 7, and 10 were considered overweight and 24% obese, higher than the state rates of 16% and 15.3%, respectively (MA DPH, The Status of Childhood Weight and Somerville Dept. of Health and Human Services).
- In the 2016-17 school year, data shows the percentage of overweight students slowly increasing with each grade, with obesity peaking at 7th grade and decreasing by 10th grade.
- In every grade recorded, more male students were obese than female.

**CHART 5: Overweight and Obesity,
Among Somerville Students (2016-17)**



Somerville specific trends over the past 10 years follow the national trend of leveling off of youth obesity. National data reveals a higher rate of overweight and obesity for non-Hispanic Black and Hispanic youth compared to non-Hispanic White. Further analysis is needed of Somerville student data to assess if the same disparities exist. Data from CHA patients in this age group show that the highest percentage of obesity is among youth of Central American/Mexican heritage.

Engaging in healthy eating habits can reduce the risk for children of becoming overweight or obese.

- Surveys of Somerville High School students show that more African American or Black students reported drinking 4-5 sugar sweetened beverages per day than any other group in 2016, and their reported consumption rose by 46% between 2014 and 2016, possibly due to the addition of sweetened teas and coffees to the survey question's definition in 2016.

- Consumption of sweetened beverages declined among Somerville high school students in 2016, with 36% of high school students reporting that they did not consume a sweetened beverage on the day prior to taking the survey, a 33% improvement since 2006 (Somerville HS YRBS, 2016).
- In 2015, 50.5% of Somerville middle school students reported eating breakfast daily, up from 41.6% in 2007, at least in part due to school policy changes providing breakfast before school (Somerville MS YRBS, 2015.)

Additionally, to increase consumption of fruits and vegetables, the public schools have participated in the national Farms to Schools movement and set up salad bars and offer fruit or vegetable snacks. Between 2003 and 2015, there was a 37% increase in middle school students reporting they had eaten 3 servings of vegetables during the previous day (from 8.4% to 11.5%) and a 13% decrease in the percent of students who reported having had no servings of vegetables on the day prior (from 37.2% to 32.4%) (Somerville MS YRBS).

Much of a student's opportunity for physical activity during the day comes during school hours or through school sponsored programs. It is important that there is enough time and structure before, during and after the school day for students to get adequate amounts of physical activity. Tufts research published in 2010 (Tovar, et al., 2010) indicated that Somerville children not in organized summer activities were at higher risk for summer weight gain.

Research indicates that physical activity helps to improve student attention and performance. Setting a lifelong habit of exercise is one of the most protective factors for future health.

- According to Chart 6, male Somerville high school students have, on average, increased their daily participation in physical activity; however, the rate of female students who participated in 60+ minutes of physical activity each day remained relatively stagnant and lower than state levels (Somerville HS YRBS, 2016.)
- Somerville HS health data shows, when reviewed by race, that daily physical activity was lowest among Hispanic/Latino (16.8%) and White, non-Hispanic (18.4%) high school students in Somerville.
- Participation on a sports team, was reported by 53.5% of high school students during the 2015-16 school year, including 50.0% of female students and 57.4% of males.
- K-8 students in Somerville Public Schools receive 40 minutes/week of Physical Education (PE). High School students have PE 4 days a week for half of the school year during their Sophomore and Senior years (Somerville Public Schools).
- Recess time varies, depending on age group and size of school, averaging 15-20 minutes per day for K-8.

CHART 6: Percent High School Students Who Participated in 60+ Minutes of Physical Activity During Each of the Prior 7 Days, by Gender (2008-2016)

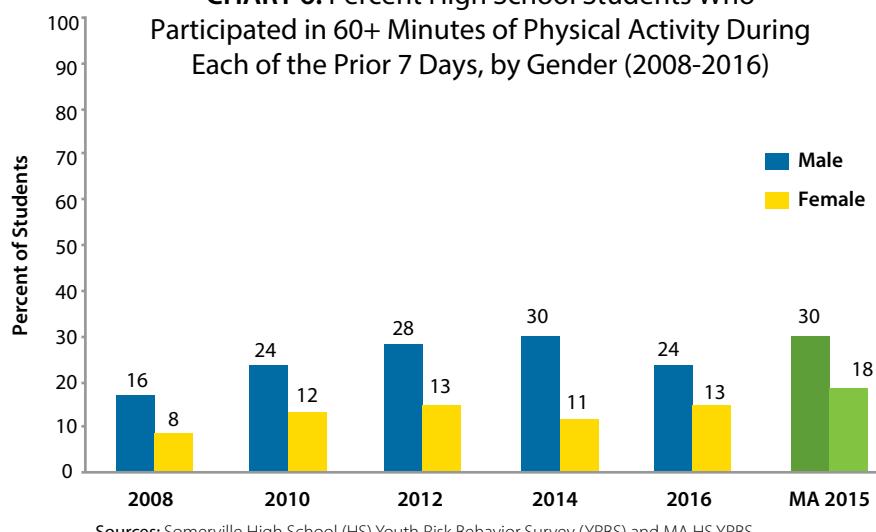


CHART 7: Percent of High School Students with adequate amount of sleep (8+ Hours), by grade (2015/16)

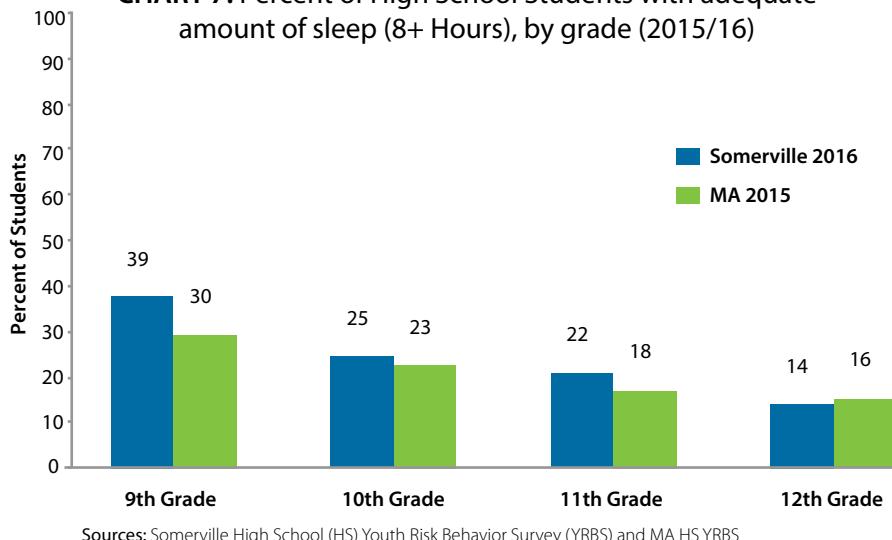
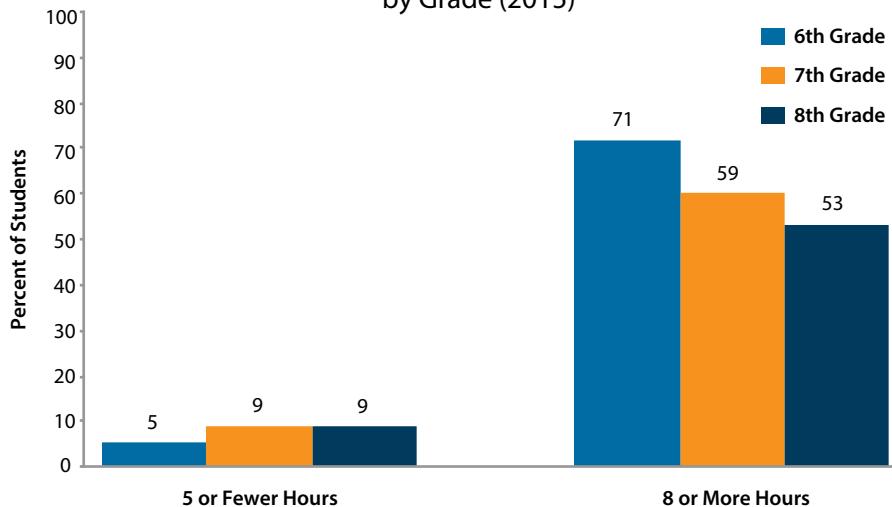


CHART 8: Sleep Adequacy among Middle School Students, by Grade (2015)



Sleep

The most recent guidelines from the American Academy of Sleep Medicine, published in 2016, recommend that children age 6-12 get 9 to 12 hours of sleep per night, while teenagers 13-18 should sleep 8 to 10 hours (Paruthi et al., 2016). The related Healthy People 2020 goal (SH-3) targets the proportion of students in grades 9-12 who get sufficient sleep of 8+ hours a night, hoping to increase the percentage to 33.1% by 2020. However, between 2009 and 2015 studies have shown a decrease in this measure nationally, from 30.9% to 27.3%. Sufficient sleep is important for adolescent health, and multiple studies show a correlation between insufficient sleep and obesity (Morissey, et al., 2016).

- According to Charts 7 and 8, adequate sleep decreases as students get older. Between 6th and 12th grade Somerville students there was an 80% decrease in the number of students reporting that they get 8+ hours of sleep, on average (Somerville HS and MS YRBS).
- Annual trend data for sleep among Somerville high school students shows that there was a decrease from 29.2% of students getting at least 8 hours of sleep in 2012 to 26.4% in 2016.

Somerville High School's day begins at 7:55am and Somerville K-8 schools begin at 8:10, which may be a barrier to adequate sleep for youth, as some students spend time in the evenings participating in extracurricular activities, completing homework and taking part in other non-school activities. Research shows that schools that changed their starting time for teenagers increased weeknight sleep duration, improved attendance and reduced motor vehicle crashes among teenagers (Wheaton, et al., 2016).

Sexual Health and Education

Education on safe sex practices and the burden of teen pregnancies can be integral for reducing sexually transmitted infections (STIs) and unintended pregnancies. Racial and economic disparities exist in data on teen birth rates and risky sexual activity. In order to reduce the negative outcomes of sexual intercourse among adolescents, it is recommended as an HP 2020 goal to increase the proportion of male and female adolescents 15-17 who have never had sexual intercourse (FP-9).

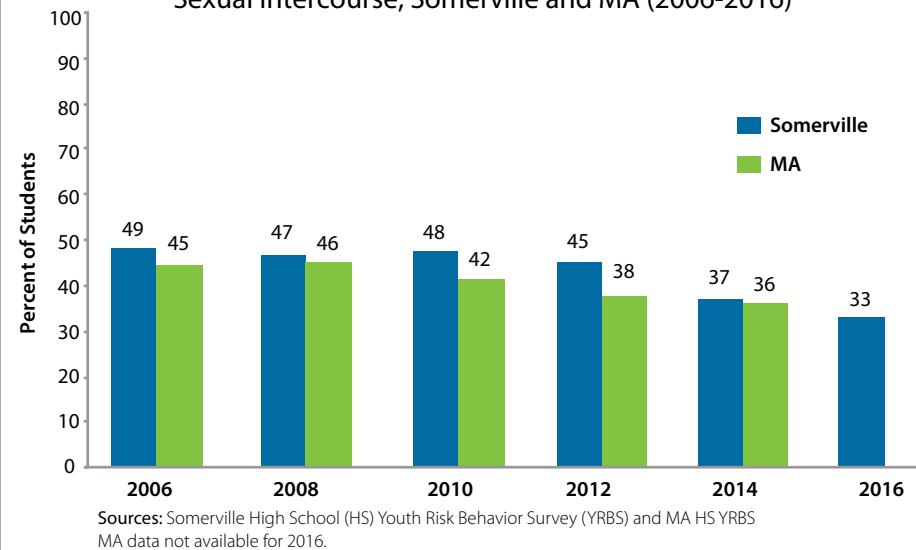
- Overall, a slightly larger percent of Somerville high school students reported having had sexual intercourse compared to Massachusetts high school students, as noted in Chart 8, although the prevalence of sexually active high school students has declined citywide and statewide over the last 10 years (Somerville YRBS, 2016 and MA YRBS, 2015.)
- Teen pregnancies among Somerville high school students were highest among Hispanic/Latino students in 2014 and 2016, with 4.7% and 2.1% of Hispanic students reporting, respectively, having carried a child or gotten someone else pregnant. (Somerville HS YRBS, 2014 & 2016)
- The total number of births to women age 15-19 is decreasing. In 2014 number of births to women under 19 living in Somerville was 22; in 2016 there were 16 births (MA DPH, MA Births).

Of the 274 Somerville high school students who reported having ever had sexual intercourse in 2016, 44.4% had been sexually active by the age of 14 (Somerville HS YRBS, 2016).

When students engage in sexual intercourse, it is important that they protect themselves from STIs and from unintended pregnancy. It is also important that they are educated about sexual health and management of STIs or pregnancy, should those arise. There has been an overall increase in the rate of new cases per year of chlamydia, gonorrhea and syphilis among all Somerville residents since 2005, with rates consistently higher than the state overall.

- In 2016, 60.4% of sexually active high school students reported having used a condom the last time they had intercourse, a 15.4% drop from 2014 (71.4%). Condom use is associated with the prevention of both STIs and unplanned pregnancy (Somerville YRBS, 2016).
- The CHA COPE program for pregnant and parenting teens at the Somerville High School served 19 students in 2014-15 and 21 students in 2015-16, 12 of whom were new to the program (CHA, Sexual Reproductive Health Program).

CHART 9: Percent of High School Students who have ever had Sexual Intercourse, Somerville and MA (2006-2016)



Respiratory Health

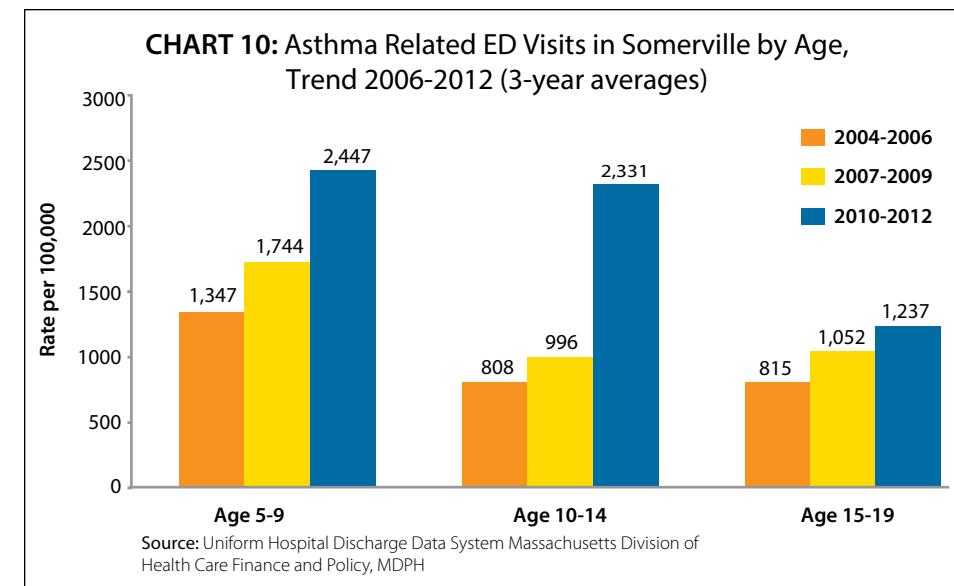
Asthma emergency department utilization (LC-38) is an indicator of poor control of asthma and its triggers and can be a result of disparities in housing quality and regular health care access. The Association for Maternal and Child Health Programs explains that asthma related ED visits are 2 to 3 times higher for Blacks than Whites, nationally. In Somerville and Cambridge, the Healthy Homes Program of the Cambridge Public Health Department offers home visits to teach families about reducing asthma triggers and lead risks in the home, in order to neutralize respiratory health and lead exposure disparities among Somerville youth.

- Since 2004, rates of asthma related emergency department (ED) visits in Somerville have increased across the three youth age groups shown in Chart 9 (MA DPH, Uniform Hospital Discharge Data System Massachusetts Division of Health Care Finance and Policy).
- According to the Somerville Public Schools records, in the 2016-17 school year, 352 students enrolled in the district had an asthma diagnosis, representing 7.1% percent of the district's students.

Disability

Disability status of children under 18 is a U.S. census category. Children with special health care needs have legislated supports and accommodations available in Massachusetts through the 504 Plan to help them participate fully in educational programs.

Students who have documented disabilities impacting their learning may also be served under the Individuals with Disabilities Education Act and have an Individualized Education Plan (IEP). Of Somerville students, 21.7% are considered students with a disability by the Massachusetts Department of Elementary and Secondary Education (DESE). The state identifies the graduation rate of students with IEPs as an indicator for success in serving students with disabilities, as does the Healthy



People 2020 goals (AH-5.2). Adolescents in Somerville with various disabilities are served in the Somerville Public Schools, in mainstream classrooms and at Full Circle and Next Wave schools, the districts' alternative junior high and high schools for students who have difficulties learning in a traditional setting.

- Among the various disabilities on record, in the 2016-2017 school year, Somerville Public School's rate for documented emotional disability is 9.4%, developmental delay rate is 10.8%, and specific learning disability rate is 31.6% (Somerville Public Schools).
- In the 2016-2017 school year, 1% of students in SPS had physical disabilities such as cerebral palsy and 4.6% had health disabilities such as diabetes or seizure disorder (Somerville Public Schools).
- The state's target for IEP graduation is 84%, while the HP 2020 national target is 65%. Somerville falls between the two targets. In 2015-16, 66.2% of Somerville students with IEPs from the 2015-2016 cohort graduated (MA DESE).

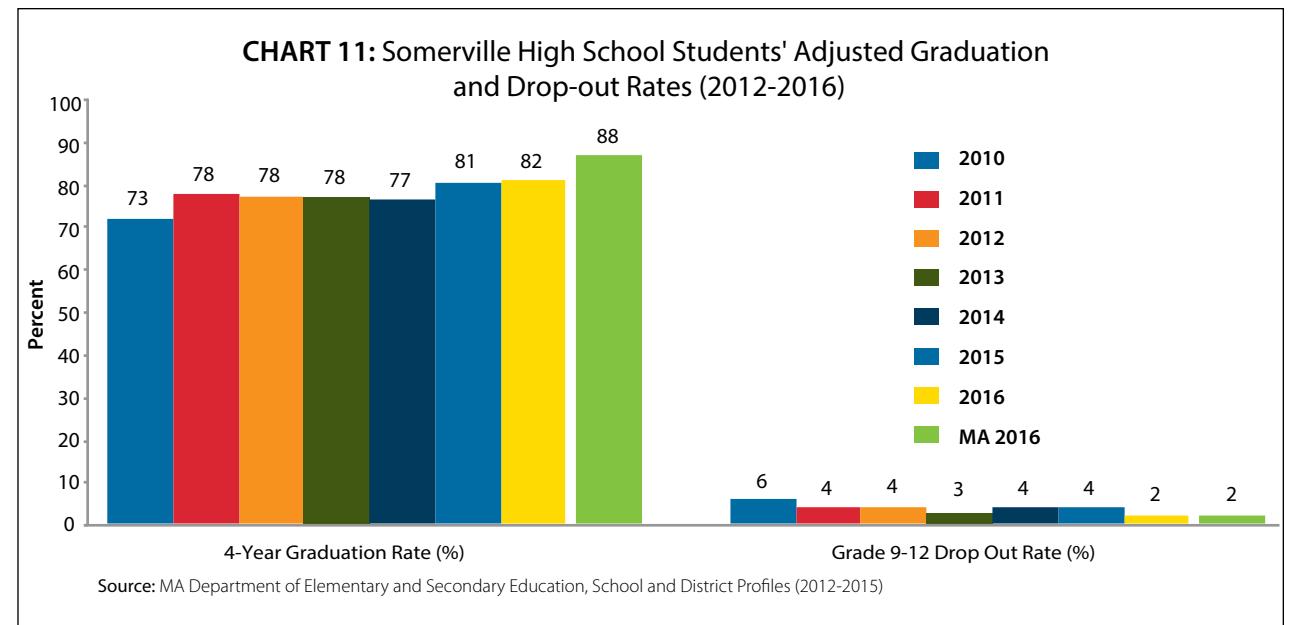
Education

Education is recognized as a social determinant of health. The Healthy People 2020 goals and the Life Course indicators both identify educational attainment as a lifelong indicator of health and wellbeing. According to the Association of Maternal and Child Health Programs (AMCHP), educational attainment is linked to future acute and chronic health conditions and is a predictor of life expectancy. The education related Life Course Indicator proposed by the AMCHP is the percent of 4th grade students meeting proficiency standards in math and reading (LC-57). If students can meet this standard in 4th grade, it is more likely they will graduate from high school on time and achieve good health throughout their lives. Massachusetts Comprehensive Assessment System (MCAS) is the standardized tool used by Somerville Public Schools to evaluate students on English language arts (ELA) and mathematics. Somerville Public Schools' 2016 data for 4th grade students shows that 48% of the students tested advanced or proficient in ELA while 50% tested advanced or proficient in math. The Office of Disease

Prevention and Health Promotion Healthy People 2020 objectives anticipate that the proportion of students who graduate with a high school diploma within four years after starting 9th grade will increase to 87% by 2020. Nationally, 82% of students achieved 4-year graduation in the 2013-14 school year.

- As shown in Chart 11, the Somerville district 4-year graduation rate in 2016 was 82%, while the state graduation rate was 87.5%. The adjusted 4-year graduation rate, which excludes transfers into the district, at 87.9% was higher than the state rate of 84.6% (MA DESE).
- The 2015-16 Somerville dropout rate across all grades was 1.9%, which is equal to the MA rate in the same year and half the Somerville dropout rate in the prior year (3.7%) (Somerville YRBS, 2016).

In Somerville, 60.2% of students were considered high-needs in the 2016-17 school year. These students are considered at risk of falling behind in class work or failing school as a result of living in poverty,



having a disability, being an English language learner, or entering high school with limited formal education. In comparison, only 45.2% percent of students in all of Massachusetts were classified as high needs the same year (MA DESE).

Given the strong correlation between wellbeing and the ability to succeed in school, many social factors and family dynamics can impact academic outcomes. As described in the prenatal and early childhood chapter, exposure to Adverse Childhood Experiences (ACEs) can potentially affect lifelong mental and physical health, with corresponding positive or negative outcomes to one's overall life success. The list of ACEs includes physical, sexual, or emotional abuse, neglect, being a victim of or witness to violence at home or in neighborhood, parental separation, divorce or incarceration, mental illness or substance misuse in a child's household, among others. ACEs are associated with a wide array of health outcomes, including symptoms of trauma history.

Among Somerville's many students who may experience ACEs are students who have come to the United States from other countries, particularly in instances due to safety reasons. According to United Nations Children on the Run Report from 2014, the top reasons that youth cite for fleeing to the United States are: personal experience of violence (48%), report of abuse at home (22%), and desire to meet up with relatives who have already immigrated. As a result of their immigration experience, many students feel anxious and depressed and report being bullied by their peers. Many of these students have less formal education than their peers, as well as less medical or dental care history. Unaccompanied minors and other immigrants at Somerville High School are not the only population in Somerville that have experienced ACEs. However, these students are among those who most benefit from culturally sensitive and trauma-informed approaches. Trauma-informed school environments are those that create a sense of safety and stability through routines, clear expectations and modeling emotional regulation. Additionally, such schools promote social connections and supports to increase positive mediating factors in a child's life.

By All Means

Somerville is one of six cities to participate in Harvard's By All Means project, a multi-year initiative aimed at developing comprehensive child wellbeing and education systems that help eliminate the link between children's socioeconomic status and achievement. Somerville's engagement is focused on developing a comprehensive plan for access to high-quality preschool, expanded out-of-school time and integrated health services that support the intellectual and social-emotional growth of all Somerville children. In remarks at one of the convening sessions, Mayor Joseph Curtatone spoke of the need to understand education as a complex ecosystem, in which a variety of players help move a community towards shared goals. The School District, Health and Human Services Department and leading community partners including Cambridge Health Alliance are working towards a strategic continuum of services to strengthen out-of-school time programming and wraparound services for Somerville youth. The Somerville Community Cabinet has established key process indicators, participation metrics and ultimate student outcomes to measure the success of this collective work.



Police Steps Program

Starting with the first day of school, as part of the City's Students & Teachers Engage Public Safety (STEPS) initiative, five Somerville police officers will embark on a journey with the 6th grade classes in each of the district's public schools. This is a commitment for a full seven years, as five new officers serve as mentors for each year's incoming sixth graders and advance with them to graduation. Over the next seven years, Somerville Police plan to have up to 35 officers, approximately one-third of the department's patrol staff, involved in the program. By establishing long-term, real connections between youth and law enforcement, STEPS aims to foster trust and positive relationships between young people and police officers and to help young people grow into responsible and successful adults. The program, believed to be the first of its kind, is a partnership between the City of Somerville, the Somerville Police Department and the Somerville Public Schools.



The Somerville Public Schools has stepped up in recent years to the challenge of addressing the diverse range of issues that face many high-need students. These needs can be a barrier to achieving the 4-year graduation rate national target, yet the public schools are working hard to insure all school age youth have access to the benefits of education in this life stage to increase the potential for success later in life. Some students find achieving a regular diploma can be a challenge. It can be more developmentally appropriate for some older students to transition to the adult education program at SCALE to complete the High School Equivalency Test and achieve an Adult Diploma.

- 46% of Somerville students planned to attend a 4-year college upon graduating when asked in 2016, while 27% planned to attend a 2-year college and 20% planned to enter the workforce (Somerville YRBS, 2016).
- In 2010, 1% of Somerville students reported wanting to join the military upon graduation, while 13% reported plans to join the military in 2016.

To better support all students, Somerville Public Schools offer wrap around services, alternative school experiences at Next Wave and Full Circle with supportive staffing and a Welcome Center at the high school for students and their families newly arrived to the United States. Somerville Public Schools also offers a robust Career and Technical Education program, vocational education that provides skills training as well as serving to introduce students to broader career and future academic options.

It should be noted that Somerville students also have alternative options to attending the local public school. Prospect Hill Academy lower grades and middle school are located in Somerville, with the high school in nearby Cambridge. Parochial schools such as St. Catherine's also provide elementary education options. In addition, some portion of families choose to home school their children, with a vibrant local network to support these children's learning.

Social Emotional Learning

In Somerville Public Schools, all pre-k to 8th grade classes utilize the Second Step program, a developmental curriculum, which teaches social-emotional skills through the progressive grades. Winter Hill Innovation School also utilizes the Responsive Classroom program, integrating social and academic skills building. Such programs have been shown to facilitate classrooms where all children can thrive and where attention to social-emotional learning supports academic success.

Closely related and complementary to the Second Step lessons, Somerville Public Schools is integrating mindfulness practices into the school day. Kennedy School has implemented a pilot project called Mindful Mondays, with classrooms and cafeterias, as well as field trips serving as settings for mindful walking and mindful eating, and mindful breathing for Kindergarten classes. In preparation for the 2017-2018 school year, additional Kennedy teachers participated in related professional development sessions to learn mindful practices and how to implement them with students, as well as how to track and record outcomes. The 5-year goal is to spread similar training across the district.

Economic Stability

International research suggests that family affluence is related to youth health. A 2002 article in the Journal of Youth Psychology states that children who grow up in poverty are at a greater risk for developing physical and mental health conditions (Barrera, et al.). In order to measure income related health disparity, the World Health Organization developed a Family Affluence Scale, a measure of family wealth for children and adolescents, to measure the association between economic status and health in families with children. Currently, Somerville youth data typically does not have related economic status to allow for cross-referencing.



- 23% of Somerville children under 18 were living in poverty as of 2015 data, an 8.2% increase since 2010 and higher than the Massachusetts level of 15%
- 43% of Somerville single female-headed households are in poverty, a 2.6% increase since 2010, consistently higher than the state rate.
- 39.4% of Somerville Public School students were considered economically disadvantaged in 2016-17, a measure based on the number of students participating in state-administered aid programs including the Supplemental Nutrition Assistance Program (SNAP), foster care, the Temporary Assistance for Needy Families (TANF) or MassHealth (Medicaid). Among students in all MA public schools, 30.2% were economically disadvantaged in 2016-17. (MA DESE)

Housing/Housing Security

The McKinney-Vento Act refers to a federal statute, updated by the Every Student Succeeds Act in 2016, requiring each state to insure that homeless children have the same access to school, including preschool, as all other children. School districts each have a Homeless Liaison, who implements the services at the local school district level. Transportation to school, from temporary housing in the Greater Boston region, is one of the key services provided. Youth Harbors works with unaccompanied students in Somerville High School who are experiencing homelessness. According to the SPS Homeless Liaison:

- 94 students who attended SPS reported experiencing homelessness during the 2016-2017 school year (Somerville Public Schools).
- Additionally, 17 students from other communities who were experiencing homelessness were housed temporarily in shelters in Somerville during the 2016-17 school year but continued attending school where they originally became homeless.

Employment and Living Wage Jobs

The Great Recession (2007-2009) shifted the employment market for teens, dramatically increasing competition for even low-paying jobs that were traditionally filled by teens and reducing available summer employment opportunities. Summer jobs programs for youth, such as the one run by the City of Somerville, are often at the mercy of the current economy and can therefore vary greatly year by year, but provide valuable experience and exposure.

Training for future employment options is also important for youth. The Career and Technical Education program at Somerville High School offers 13 different academic and skills building courses of study. Graduates go on to 4 year colleges, 2 year college, advance trainings or apprenticeships or directly to the job market. Community trainings such as the Counselor in Training (CIT) programs offered by the YMCA and others can be a ladder to employment as a counselor/camp leader, while also building leadership and program management skills.

Food Security

Household food insecurity is an issue for Somerville youth. The income diversity of school age youth becomes visible in this increasingly rising area of need. Multiple studies document the links with students' ability to participate and learn in the face of food insecurity at home. The Healthy People 2020 goals address food security by setting a target that only 6% of households are food insecure by 2020 (NWS-13). The national indicator has shown minimal improvement although the percent of food insecure households has dropped slightly, from 14.6% in 2008 to 14% in 2014 (ODPHP, 2014). The Somerville Food Security Coalition, which meets monthly, includes a wide range of city, school and community stakeholders both local and regional, convening regularly to advocate for and provide improved access to available healthy food resources.

- In 2016, for the first time, the Youth Risk Behavior Survey in Somerville addressed food insecurity by asking students if they have ever gone hungry due to lack of money at home. 9.4% of students responded that they had gone hungry, including 18.2% of Haitian Creole speakers and 10.3% of Spanish speakers (Somerville HS YRBS, 2016).
- In 2015, 19.4% of Somerville households with children under 18 were utilizing Supplemental Nutrition Assistance Program (SNAP) benefits, and the median household income of this group was \$17,396 (American Community Survey).
- Between 2010 and 2015, the percentage change for female-headed families with children using SNAP was a 44.6% increase, representing 658 households.
- The statewide calculator for SNAP gap estimates that as of 2016 data, 61% of those who are income eligible for SNAP in Somerville are not accessing these available financial benefits (Food Bank of Western Mass).

Currently, children born in the U.S. or who have a green card may be eligible for SNAP. It should be noted that SNAP is not considered a

public charge, defined as an individual who is likely to become primarily dependent on the government for assistance. Over 60 locations in Somerville, including grocery stores, corner markets, Farmers Markets and the Somerville Mobile Farmers Market accept SNAP benefits. The state-wide Healthy Incentive Program launched in summer of 2017 to provide additional financial supports for SNAP beneficiaries to purchase fresh produce from Massachusetts farmers.

The Somerville Public Schools have developed multiple programs to address food insecurity among youth. All Somerville public schools provide free in-school breakfast (AH-6). In 2014, the non-profit Somerville Backpack program started to provide food for students, identified by the schools, for over the weekend. This public-private partnership program started small at just a few schools, but has expanded to 9 Somerville Public Schools and served 291 school aged children as well as homeless youth in the 2016-2017 school year. Food for Free has also developed a Family Meals program, providing 230 free frozen balanced meals that are available at several Somerville locations to address food emergencies. Prospect Hill Academy also offers a backpack program for children in their two Somerville based schools.



Shape Up Somerville



The City of Somerville is home to Shape Up Somerville (SUS), a nationally recognized model for community health improvement. This initiative began as a research study at Tufts, under the direction of Dr. Christina Economos, focused on obesity prevention in school age students through policy, systems and environmental change. Now, fifteen years later, this city-wide

strategy is part of the Health and Human Services Department in the City of Somerville. City and community partnerships are key in achieving the mission to build and sustain a healthier, more equitable community for everyone who lives in, works in and visits Somerville. SUS works towards this goal by focusing on healthier food access and active living. SUS projects include:

- Somerville Mobile Farmer's Market – increasing access to affordable fruits and vegetables
- Shape Up Approved Restaurant Program – providing healthy meeting and dining options
- Tap Water Campaign – promoting drinking tap water over sugary drinks, starting with installing water bottle filling stations at parks and the High School, in collaboration with CHA and other partners
- Safe Routes to School - having safe walking, biking and rolling options to get to and from school
- Mayor's Wellness Challenge – promoting the park and bike infrastructure
- Food system assessment - strengthening the local food system, in partnership with the Food Security Coalition

Natural and Built Environment

Home Environment

A safe environment is essential for youth and adolescent health. Natural resources and the built environment can either pose risks to health or promote good health. Studies of the links between housing and children's health indicate that quality of housing has more impact than other housing factors such as affordability, stability or ownership. Poor quality housing was identified as a predictor of emotional and behavioral issues in children, largely due to the impact on parent stress (Coley, et al., 2013).

Secondhand environmental smoke exposure is magnified when a child or adolescent is within a confined space, such as a home, with a smoker. This exposure in the home (LC-28) can lead both to many of the same conditions that smokers are at risk for and to new cases of asthma in youth, which is why it has been identified as a leading Life Course Indicator for health. Household asthma triggers include smoke exposure, pets, dust mites and mold.

- In Somerville in 2014 and 2015 respectively, 29% of high school students and 24% of middle school students reported that they lived in a household in which there was a smoker other than themselves. White students reported secondhand smoke exposure at the highest rate (32.3%) (Somerville HS and MS YRBS, 2014 & 2015).

Transportation

Children who become accustomed to walking or biking to school will easily meet recommended levels of daily physical activity and build life-long habits of active transportation. It is the role of a city to provide safe transportation infrastructure for drivers, pedestrians and cyclists. Somerville is committed to providing safe ways for students to walk and bike to school. In June 2017, the Winter Hill Community Innovation (WHCI) School was awarded a bronze "Safe Routes to School" award from the Massachusetts Department of Transportation (Jessen, K., 2017). WHCI was one of 80 schools and organizations in the state to receive the award.

In 2nd grade, Somerville Public Schools offer pedestrian safety courses, and the schools teach bike lessons to all 5th grade students, which focus on bicycle riding, safety and the rules of the road. The lessons began in 2010 with the Cycle Kids curriculum which was donated to Somerville thanks to a New York Foundation grant. The program has helped improve bicycle safety among Somerville youth, as more middle school students in all grades reported wearing a helmet most of the time or always, when riding a bike, in 2015 than in 2007. Still, 36% fewer 8th graders wore their helmet than 6th graders in 2015 (Somerville MS YRBS), and it may be necessary to continue to address helmet use as students become further removed from the Cycle Kids curriculum. Massachusetts law requires anyone age 16 or younger on a bicycle to wear a helmet.

Access to Nature and Open Space

The availability of open, natural spaces is important for child and adolescent health and development. Air quality is improved by urban forestry. Open spaces set apart from heavy traffic can offer a respite from the pollution caused by car emissions and makes physical activity fun and convenient for youth. In Somerville, the urban trees, parks, community gardens and the Mystic River Watershed are valuable natural resources. Under Mayor Curtatone, the City has renovated 17 parks and added four new parks, increasing the city's open space inventory by 2.05 acres since December 2012. There is a total of 32 playgrounds in the city. Additionally, in 2016, Upper Mystic Lake (site of a popular state managed swimming beach) was awarded an A+ rating by the Mystic River Watershed Association and the Mystic River was awarded ratings of A- for water quality related to swimming and boating safety measures (Bender, E., 2017). These improvements in the city's surrounding environments allows for increased use of open space for land and water recreation. The Gentle Giant rowing program and the canoe and kayak rentals at Blessing of the Bay Boathouse increase the recreational and physical activity options for youth and families with children to explore the local natural areas by boat.

Environmental Health

Environmental impacts on health can lead to a variety of negative health outcomes. An issue impacting Somerville is the introduction of ultrafine particles to neighborhoods in close proximity to Interstate 93. Such exposures have been linked to elevated levels of asthma, respiratory infections and heart disease. These outcomes disproportionately affect those living in the I-93 area. Young children are vulnerable to cumulative impacts of local air pollution, especially if they are also experiencing secondhand smoke or other allergens in the home environment.

Social and Community Context

Historically, Somerville has been a welcoming city for immigrants, serving as a gateway community for new arrivals from around the world who settled and made this their home. National changes in immigration policy since 2017 have highlighted the sanctuary status that communities such as Somerville strive to offer to all residents, regardless of immigration status. The Somerville School Committee passed a resolution confirming the commitment to providing a safe learning environment for all students. From a public health perspective, addressing the perceived safety or related threats and providing knowledge and resources in a supportive environment is preventative particularly for mental health and wellbeing for all residents, especially youth.

Older students are beginning to change their social relationships, building more connections outside of the family in community and non-school settings. In Somerville, there are over 50 identified agencies providing youth development services and a Somerville Youth Workers Network.

For those interested in identifying supports and better understanding social and community resources in service of a healthy childhood and adolescence, the online Somerville Hub offers a broad range of links for families and children. SomerPromise, the City's cradle to career initiative, has gathered this information into one location. The Hub is also



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a repository for resources such as those developed through the PEP project, so families can have access to materials related to community wide initiatives. More directly, SomerPromise has also offered wrap-around services, especially at the High School, with an emphasis on youth who have recently arrived to Somerville and may have limited formal education.

Race

It is important for school aged youth to feel safe during their daily routines in order to be productive in school and avoid undo stress and anxiety. However, in some communities, students face social exclusion based on race, disability and gender or sexual orientation. The Life Course Indicators seek to understand the impact of discrimination in childhood, specifically on the basis of race (LC-14), on future health and wellness.

- In Somerville, 15.2% of Black middle school students worried during 2014-15 about being treated different based on their race or ethnicity (Somerville MS YRBS, 2015).
- 10.7% of high school students felt much less safe or somewhat less safe as a result of having police officers in their school in the 2015-16 school year (Somerville HS YRBS, 2016).

The City of Somerville strives to be as inclusive as possible and to reduce incidences of discrimination. In order to aid youth and families, the public schools have made available fact sheets in 14 languages on immigrant rights and support for minorities on the SPS website. Somerville is also one of the 89.8% of schools nationwide, and among 96% in MA, which explicitly prohibits harassment on the basis of a student's sexual orientation or gender (AH-9).

Social Inclusion

In a political climate which challenges not only rights around immigration status, but also sexual and gender orientation, the presence of groups such as the Gay/Straight Alliance supporting LGBTQ youth are critical social supports. The shift at Somerville high school's prom to a "royalty couple" versus king and queen titles to be more inclusive, led to the first same-sex couple being awarded that honor in 2017.

Social Safety Network/Social Support

It is important that students have a social safety network to guard against the negative impact of bullying and discrimination. The Healthy People 2020 goals prioritize the intent to increase the proportion of adolescents who have an adult in their lives with whom they can talk about serious problems (AH-3.1). This is also one of the five target areas of America's Promise Alliance for youth, a national organization with which Somerville is affiliated. In 2014, 79.3% of adolescents nationally were thought to have an adult to talk to, while the 2020 goal is that more than 83.2% of adolescents will be able to talk about serious problems with an adult.

- 80% of Somerville high school students had an adult to talk to outside of school in 2016, while 64.4% reported having a teacher or adult in school with whom to talk (Somerville HS YRBS, 2016).
- 16.1% of female and 8.4% of male students met with a school counselor in 2016, while 19.1% of females and 10.8% of males met with a therapist.

Social Media

The year 2012 was a milestone in social media's impacts on the culture, as it was the year that a Pew report identified as when nearly 50% of Americans owned a smartphone. Based on the most recent Pew report, in 2017, over 77% of Americans have a smartphone and 95% have some kind of cell phone. Research indicates that distinctions between generations has changed and that access to social media and its related technologies has created greater differences across shorter periods (Mobile Fact Sheet, 2017). Today's high school seniors and/or their families, have likely had access to a smartphone or other interactive communication and information technology for most of their teen years. "Screen time" used to refer to hours spent watching television. Then the term came to include cable and MTV or video games, followed by computers being added to the list, and most recently smartphones and tablets.

The social landscape shifted with the advent of Facebook, Twitter, Snapchat and other social media platforms. Instant, and sometimes temporary, interactions via social media have superseded many live, face-to-face interactions. Families and communities, and often youth themselves, are struggling with how to manage the impacts of social media, especially on young people who are developing their social foundations. Safe communications and online etiquette and standards of behavior are not universally in place to protect young people from the rise of new phenomena such as cyber-bullying, which is showing up in the youth survey data. This engagement with social media may have some positive impacts, as reportedly nationwide sexual activity in teens has decreased.

Violence (Neglect, Domestic Violence, Sexual Abuse, Bullying)

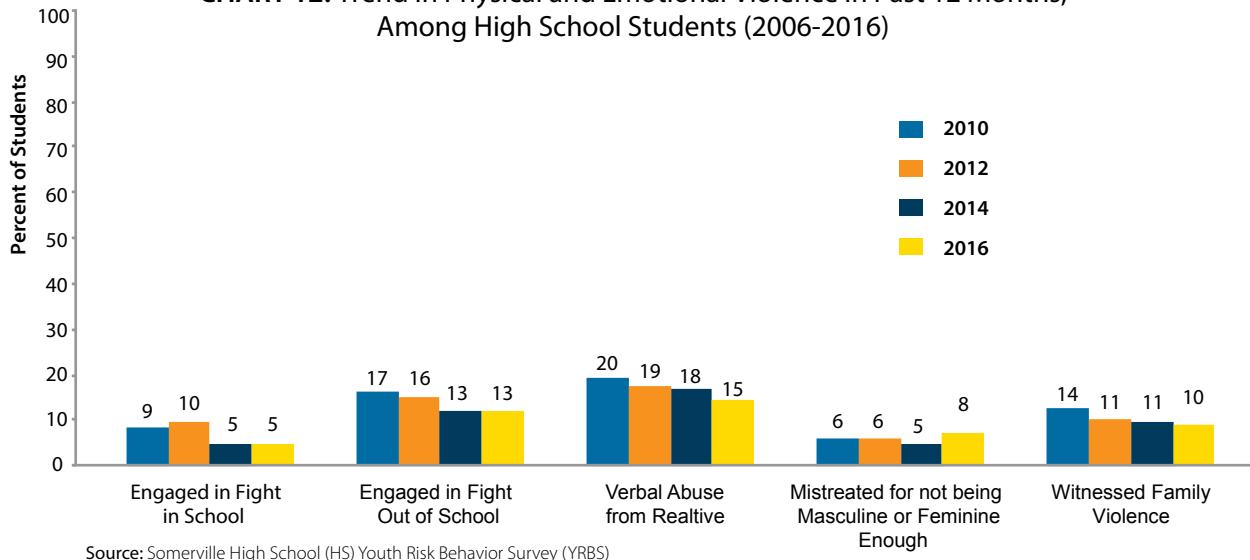
The local Department of Children and Families (DCF) Office covers Burlington, Cambridge, Somerville, Winchester, Wilmington, and Woburn. According to this office, of these towns, Somerville has the highest number of open cases accounting for 26-30% of the total

number, comprising approximately 126 cases as of December 2016. A case can include multiple children of varying ages and at times multiple families depending on the complexity of the case. This number includes cases that are involved through Care and Protection (C&P), Child Requiring Assistance (CRA) and Voluntary cases. Increasingly, more of the DCF cases are related to substance use by parents.

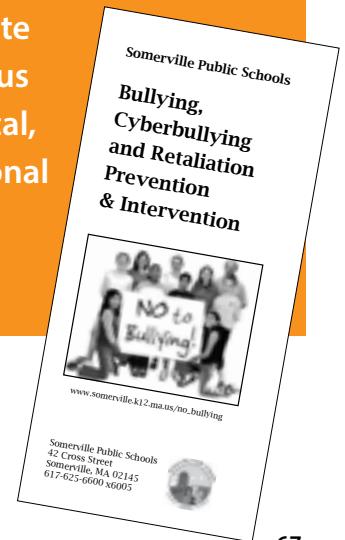
Somerville Police data indicates the domestic assault rate was lowest in 2013, yet that was also the year the highest numbers of juveniles were involved. Witnessing domestic violence is one of the adverse childhood experiences (ACEs), which if accumulated, can have negative impacts on health and wellbeing in later life.

- According to Chart 12, most experiences of violence among Somerville youth became less common between 2010 and 2016. However, more students reported being mistreated for not being masculine or feminine enough in 2016 (8%) than 2010 (6%) (Somerville HS YRBS, 2016).

CHART 12: Trend in Physical and Emotional Violence in Past 12 Months, Among High School Students (2006-2016)



Somerville Public Schools maintain a bullying prevention and intervention website: www.somerville.k12.ma.us/no_bullying. This site offers an anonymous reporting web portal, and links to additional information and resources.



- Comparison data shows that male Somerville students were more likely (17.7%) than female students (7.8%) to engage in a physical fight outside of school in 2016.
- More comparisons show that students identifying as Asian or Pacific Islander were most likely to report verbal or emotional abuse from a family member (21.1%) in 2016.
- When asked about physical or sexual violence by a date, girls reported dating violence (3.8%) at over twice the rate that boys did (1.4%) in 2016.
- Non-domestic violent incidents involving youth, such as robbery and assault, are tracked by the Somerville Police Department. Between 2010 and 2016, the number of such incidents ranged from a low of 27 in 2013, to a high of 56 in 2011 (Somerville Police Department data).

Bullying is a common form of violence among teenagers, which is especially prevalent within schools and may lead to decreased academic achievement and mental health problems among teens who are bullied.

- Among the 282 high school students who reported that they witnessed bullying in school in 2016, 125 (44%) students did nothing and 8 (3%) joined in (Somerville HS YRBS, 2016.)
- In 2015, 11.3% of White middle school students reported being bullied in school or on the way to school and 9.5% reported being bullied electronically, the highest rates among all races.

Community and Civic Engagement

The Association of Maternal and Child Health Programs stresses the importance of social capital in lifelong health. Social capital is built of civic engagement, norms of reciprocity and trust in others. Youth and adolescents can build social capital and lifelong networks through engagement in extracurricular organizations. According to a study published in the Journal of Youth and Adolescence (Chan, Wing Yi et al.), civic engagement among adolescents is related to higher life satisfaction and educational achievement as they emerge into adulthood. In the study, non-Whites and high-risk youth who were civically engaged during adolescence engaged in less criminal activity in adulthood. Civic engagement in youth is so important to the Office of Disease Prevention and Health Promotion that it is stated as a Healthy People 2020 goal to increase the proportion of adolescents who participate in extracurricular and/or out-of-school activities (AH-2) to 90.6%.

- At Somerville High School, participation in sports teams, academic clubs and music or theatre showed a gradual increase between 2010 and 2016 (Somerville HS YRBS, 2010-2016).
- Slightly fewer students participated in student council, community service and community groups (faith based, political, etc.) in 2016 than did in 2010.
- The most popular extracurricular activity among Somerville high school students in 2016 was sports teams, in which 53.5% of high school students were engaged.
- In 2016, Hispanic/Latino high school students in Somerville were the least represented group in every type of extracurricular activity on the Somerville YRBS Survey, with the exception of sports teams where it was only slightly less.
- For the majority of organized social groups in 2016, students who identified as Asian or Other were the most represented, with the exception of sports teams where Black students were the most likely to participate.

Recommendations for School Age/Adolescent

Ages 5–18

■ Increase access to health promoting resources for school age youth

- Develop shared measures to assess resilience and wellbeing
- Expand in-school health and dental services and consider relevant policies
- Provide health education to teens and parents/caregivers that is developmentally, culturally and linguistically appropriate

■ Address systemic social determinants impacting youth health and wellbeing

- Further investigate linkages between asthma in youth and housing/built environment (traffic, etc.)
- Explore policies that address poor quality housing
- Adapt the Youth Risk Behavior Survey to capture family affluence, to address income related health equity

■ Facilitate a community with strong social networks and support systems for youth

- Develop and support innovative and evidence-based peer learning opportunities for youth during out of school time, including summer
- Expand opportunities for extracurricular participation and civic engagement, specifically to serve diverse youth
- Create opportunities for exposure and access to a range of viable career paths for all youth



■ Create lifelong habits to promote positive mental health and prevent impact of Adverse Childhood Experiences (ACEs)

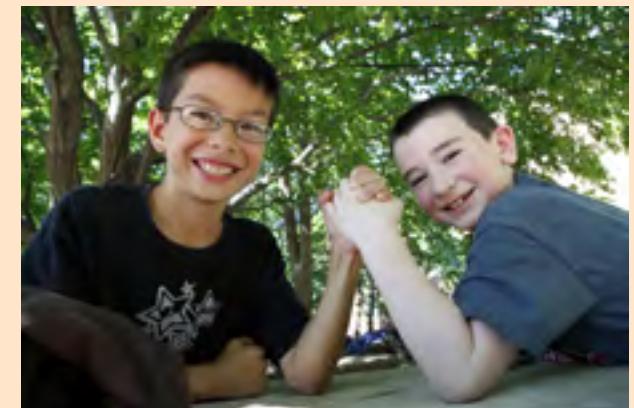
- Integrate evidence-based mindfulness programming into school curriculum and out of school programs to support and train youth on regulating behaviors and emotion
- Develop and promote a school standard for equity
- Provide professional development for out of school time providers about trauma informed best practices
- Address stress in minority populations as a result of stereotyping, gender and racial bias in school
- Foster time management and life balance skills
- Support and expand the Life Skills curriculum as part of the student health education program
- Create a task force to explore the YRBS self-reported mental health issues of suicide attempts, self-harm and depression

■ Support increased physical activity and healthy eating opportunities

- Reduce barriers for student participation in physical activity, especially for females
- Explore experiential and outdoor education opportunities
- Reduce food insecurity, especially when school is out of session
- Promote tap water consumption and reduce sugar sweetened beverages
- Reduce barriers to student participation in school meals programs

■ Meet sleep recommendations

- Explore delaying start time for high school



■ Promote social supports that reduce screen time

- Expand and integrate trainings on social media use to decrease online bullying and screen time during the school day
- Identify, create and promote out of school time activities as alternatives to screen time and social media
- Provide tools to develop family media plans that support parent/caregiver education on the challenges of screen time and social media

■ Prevent sexually transmitted diseases and teen pregnancies

- Ensure all students receive sexual education instruction, specifically newly arrived students and those with limited English
- Expand age and culturally appropriate education on sexuality and sexual health within Somerville schools, especially middle school

Early Adult

Introduction

The early adult period, for the purposes of this report, is defined as 18–24 years of age and is often described as a time of transition and change. Development is still very much in progress, not only physical maturation, but also emotional, cognitive and social. Literature refers to this stage of life as the “formative years,” encompassing the shift from adolescence and the making of choices that transition one to adulthood.

The circumstances for this life stage have shifted dramatically since prior generations, due to new demands on this population’s time and attention that compete with the establishment of their independence, careers and social networks. From a public health perspective, the early adult period can be a time of higher risk, with less attention to health supporting behaviors such as good nutrition, exercise and timely medical or dental checkups. There is also a greater threat of health disrupting behaviors such as increased substance use, poor eating patterns, greater stress and lack of sleep. Changes in daily routines and schedules, social media and social networks, and larger economic and societal and political

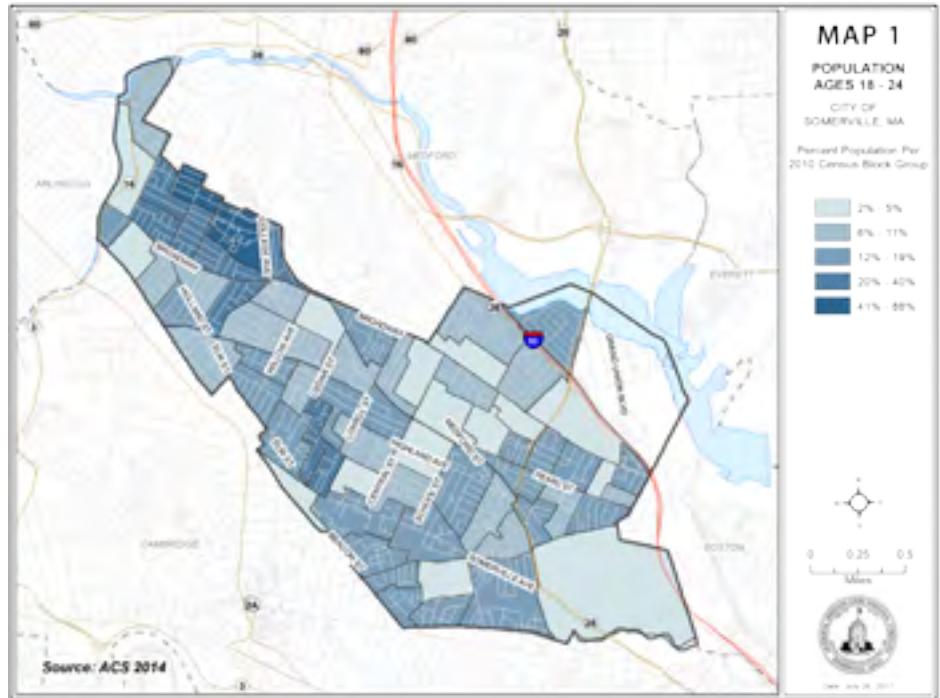
systems can all have an impact on early adults when they tend to be both resilient and vulnerable. The outcomes of negative behaviors can manifest in many ways including obesity, which is increasingly present in early adult years. Mental health issues are also likely to emerge in these years, making this time of transition harder than it already is for many. Cumulative experiences and exposures during childhood may begin to manifest as health issues, especially related to mental health and substance use. Foundational health behaviors established during early adult stage of life can impact health later in life, and for those who are future parents, the health of their children.

It is noteworthy that the stage of life often recognized as a time of transition to full adulthood and its markers such as careers, marriage and starting a family or purchasing a home has shifted for many from the early adult life stage to the young adult life stage (age 25–39). Individual and population health investments in this age group, as individuals move through this prolonged transition stage, can foster both immediate and lifelong improved health and wellbeing outcomes. Creating a healthy early adult population can have positive influences on the workforce, a critical component of filling the void created by retiring baby boomers.

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Early Adults / Ages 18–24





Demographics, age specific

The Somerville population in this age range (18-24) decreased from 17.4% of the population in 2010 to 14.1% in 2015, but still remains higher than the MA rate of 10.4%. The 20-24 year olds alone comprised 11.3% of the Somerville population based on the 2011-2015 estimates (American Community Survey). As seen in Map 1 above, this age group is fairly well distributed across the city. With the close proximity of universities such as Tufts, Harvard and MIT, Somerville has a long history of supporting a large college population. Increasingly, early adults from long-time Somerville families find it hard to afford to stay in the city and have their own place to live due to rising housing costs; this may account for some of the decrease in this population.

Access to Health Care

Health Insurance Coverage

Of the 18-24-year-old cohort within the Somerville population, 4.7% had no health insurance, based on American Community Survey data from 2010 to 2015. Of the 95.4% with health insurance coverage, 82.4% had private insurance and 13% public health coverage. The Affordable Care Act of 2010 allowed parents to continue coverage for children up to age 26, which has had a significant impact on access for this age group.

Primary Care Provider

This age group is the focus of a national initiative to improve the transition out of Pediatric Primary Care to adult Primary Care Providers. Young people who have chronic conditions or diseases can find this transition extremely challenging. To engage with this age group, most

health providers now provide online access and communications through web-based systems, intended to increase access and transparency across the generations. This is also an age when primary care integration with behavioral health is important, particularly for those with a mental health diagnosis, substance use disorder, special health care needs and/or cognitive disabilities, as individuals shift from the support system of the local schools out into broader society. In 2015, CHA provided primary care to 1,190 Somerville residents age 19-24 years.

Immunization

Vaccination guidelines from the CDC include Tdap, HPV, Meningococcal conjugate vaccine and annual flu vaccine for this age cohort. Data on immunizations for this age group is not readily available. Enrollment policies at surrounding universities and higher education institutions require immunizations and might be the best source of local trend date to improve efforts of measuring the compliant immunized population. Some infectious diseases such as mumps and measles, which were thought to be almost eradicated through immunization efforts, have been reappearing, especially in colleges, where there are high numbers of early adults living in close proximity.

Oral Health

There is some indication that as medical and dental check-up responsibility falls to the individual, compliance decreases. This is especially evident for preventative visits, including the dentist (LC-05). Often this is the age when wisdom teeth develop and should be monitored by dental professionals. The advent of wisdom teeth can trigger the need for dental surgery, which can be expensive and out of reach financially for many. For some, removal of wisdom teeth and other dental surgery may be the first exposure to prescription pain medications, which over recent decades have included opioids.

Behavioral and Mental Health

Behavioral and mental health, a nuanced and culturally complex subset of health, has gained legitimacy as a medical condition due to advocacy efforts to reduce stigma. As a result, there is now greater focus on the area of mental health and its connections with health overall. The National Alliance on Mental Illness (NAMI) serves as “a vital resource for individuals and families facing the challenges of mental illness, providing free mental health family-based education, family and peer support and grassroots advocacy.”

According to a 2014 report from the Substance Abuse and Mental Health Services Administration (SAMHSA), adults ages 20-24 are two times more likely to have a substance use disorder and also have higher rates of co-occurring mental illnesses than adults over age 26. Identification and treatment are currently pressing issues with many younger adults experiencing unidentified mental illness. In 2014, 11.4% of all U.S. younger adults received mental health services. Mental illness can be a challenge for early adults with regard to employment, residential stability and education (Serious Mental Health Challenges, SAMHSA, 2014). For this age group, programs such as CHA's initiatives to address the needs of those with serious mental illness, such as early-onset psychosis, can provide age appropriate supports and services.

Due to the frequency of co-existing mental health diagnosis and substance use disorder, many prevention recommendations focus on increasing social/emotional awareness and coping early in life as a means of preventing substance abuse later in life. National and local efforts have increased to create peer support groups, create policies to regulate alcohol and drug consumption, increase positive social interactions, increase screening and involve communities in supporting recovery. This shifting framework is intended to improve overall health outcomes in the population by increasing individual agency and decreasing stigma (SAMHSA). Cultural norms around mental health and culturally influ-

enced coping styles are important to consider in terms of mental health promotion and treatment. Cultural differences and even taboos related to mental health can create cumulative stress, adding to the burden of coping with mental illness.

Immigration policies that increase the risk of deportation and/or limit rights and access to basic services are potential risk factors for immigrants' mental health in general. Changes in U.S. immigration policy over time have created an unstable base for early adults who grew up in

the era of Deferred Action for Childhood Arrivals (DACA) and more recent changes in enforcement of immigration regulations are creating an inconsistent experience of being welcomed, and then not. Preliminary research indicates that the change in immigration status conferred by DACA was positive for the mental health of the nearly 790,000 19-36 year olds who were eligible and registered in the available window, particularly decreasing reports of psychological stress (McKee and Stuckler, 2017). Uncertainty around policy changes related to immigration status, such as DACA and Temporary Protective Status, can increase stress potentially impacting mental health.

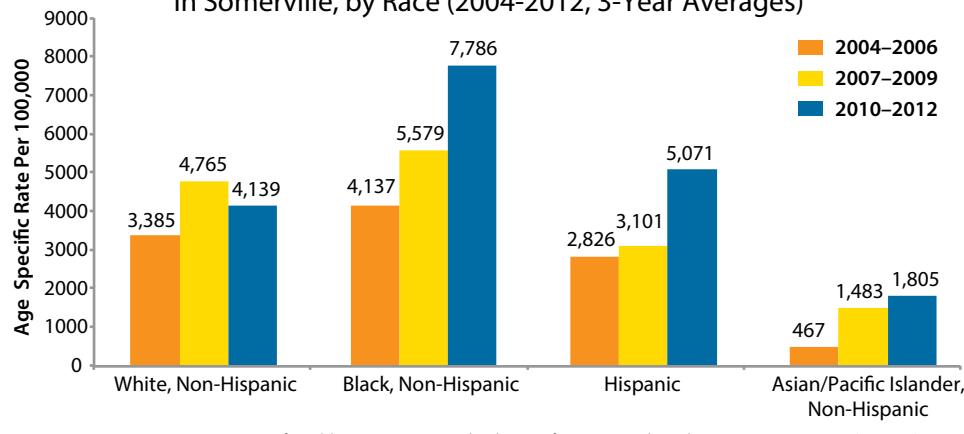
Mental Health

There can be many factors that make the mental health of early adults particularly tenuous, such as facing the expected challenges of establishing a career, securing housing and developing lifelong relationships. Larger external forces also have an impact, such as the 2007-2009 Great Recession's changes in the economic situations affecting the transition from early adulthood, or changes in immigration policy that affect the options for youth who arrived in the U.S. as children. Early adults may be especially vulnerable to racial, social and economic inequities, making this period even more stressful. Prior expectations and aspirations regarding independence are challenged by the high cost of living and stagnant wage growth in the region, making it more likely that adults of this age are sharing housing or still living at home and/or dependent on their families financially, potentially adding to overall stress.

Research indicates that when communities adopt "through any door" models of providing resources, individuals are more comfortable in asking for help and more likely to access services. Such a model is one in which individual service providers are part of a network of care designed to prioritize client needs and in recognition of the interconnectedness of factors that support wellbeing. An example of this is when a mental health provider makes referrals for needs such as housing, jobs or physical health screenings in order to support the overall wellbeing of clients.



CHART 1: Mental Disorder Related ED Visits for Adults Age 20 to 24 in Somerville, by Race (2004-2012, 3-Year Averages)



- According to Chart 1, the 3-year averages of the rate of emergency department (ED) visits due to mental health related disorders for Somerville adults age 20-24 were higher, for all races, in 2010-2012 than in 2004-2006. Between 2004-2012, the rates of emergency department visits were comparable for females and males, and highest for Blacks, non-Hispanic. (MA DPH Uniform Hospital Discharge Dataset System (UHDDS))
- Additional data shows a general decline in the rate of hospitalizations due to mental health disorders for Somerville adults 20-24, over the period from 2004-2012, while the rate for MA overall was higher than Somerville and demonstrated a gradual increase.
- In contrast to emergency department visits, mental health disorder hospitalizations rate, in adults age 20-24 between 2001 and 2012, were generally higher for Black, non-Hispanic and Hispanic/Latino. This was particularly noted in the 2010-2012 3-year averages which showed White, non-Hispanic rates decreased while rates for Black, non-Hispanic and Hispanic/Latino showed dramatic increases - almost double the rate for Whites. Data for Asian/Pacific Islander, non-Hispanic was at non-reportable levels for the time period.

Mindfulness and Compassion



Center for Mindfulness and Compassion

The Center of Mindfulness and Compassion (CMC) is an interdisciplinary center with Cambridge Health Alliance which aims to enhance the health and wellbeing of CHA and the local community by

integrating mindfulness and compassion into healthcare. Based on current scientific understanding of mindfulness and compassion, CMC encourages empirically supported theory and practice. Grounded in the value that mindfulness and compassion are innate human capacities that support health and wellbeing, CMC aims to foster an inclusive, caring and multi-cultural community that allows individuals to thrive. Programs offered to CHA patients include 8 week sessions of Mindfulness Based Stress Reduction. Current research includes topics such as the neural and physiological effects of self-compassion on chronic pain and mindfulness influences on self-regulation and related mental and physical health implications.

Substance Use Disorder/Addiction

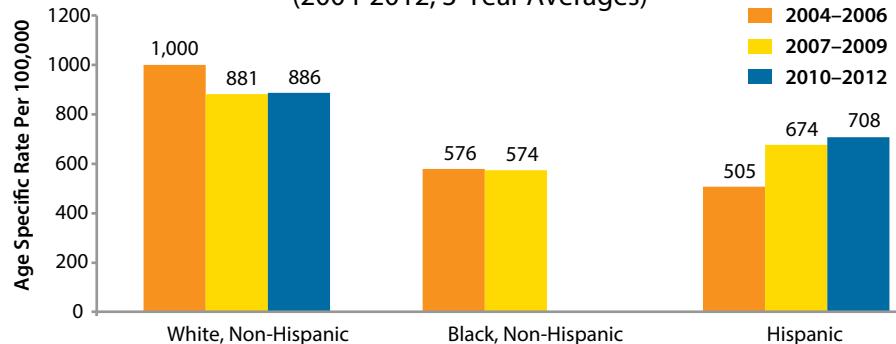
Alcohol

Research shows that the heaviest periods of drinking in many people's lives are in their late teens and early twenties. This a time when binge drinking (consumption of excessive alcohol in a short time span, typically considered 5 or more drinks) or heavy drinking (consuming 5 or more drinks in a row, 5 or more times in a month) are more common. Young people are in different social settings, meeting new people and making their own decisions; as drinking is a common social lubricant, such behaviors provide some context for the increased use. Mixing drinking and driving has potential deadly consequences; 30% of 21-24 year olds who died in traffic accidents tested positive for alcohol in 2014 (National Highway Traffic Safety Administration). A recent study found links between binge drinking and depression, with romantic relationships as a facilitating or mitigating factor (Holaway, Umberson, and Thomeer, 2016), dependent on gender variables.

- As seen in Chart 2, during the eight years between 2004 and 2012, alcohol/substance related emergency department visits decreased for White, non-Hispanic residents but increased for Hispanic/Latino residents in this age group. No data exists for Black, non-Hispanic residents from 2010-2012, but from 2004-2009, the rate of alcohol/substance related emergency department visits decreased very slightly for Black, non-Hispanic residents. (UHDDS)
- Hospital admissions, related to alcohol or substance abuse treatment rates for Somerville adults ages 20-24, were significantly lower than the state levels from 2002-2013. (MA DPH Bureau of Substance Abuse Services)
- According to Chart 3, from 2009-2012, the opioid injury related hospitalization rate for adults age 20 to 24 was lower in Somerville than the statewide rate. (UHDDS)

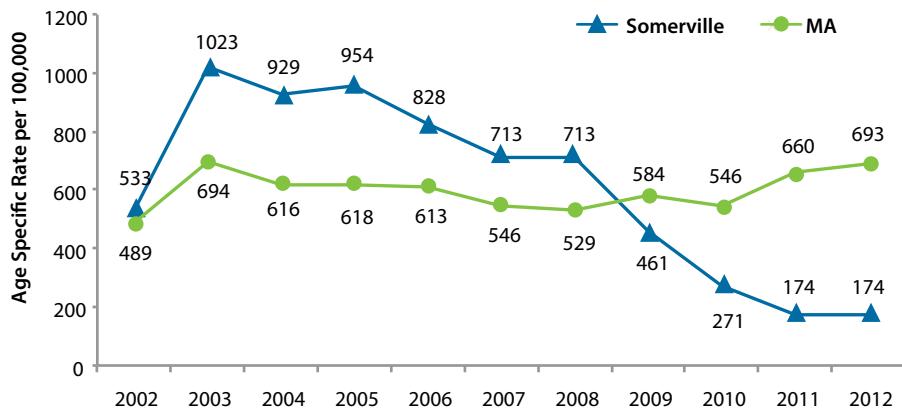
Risks associated with narcotics overdoses include death and injury. Over the last few years, Somerville has similar narcotics overdose trends to those found state-wide.

**CHART 2: Alcohol/Substance Related ED Visits for Adults
Age 20 to 24 in Somerville by Race/Ethnicity
(2004-2012, 3-Year Averages)**



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)
Black, non-Hispanic rates were not available for 2010-2012

**CHART 3: Opioid Injury Related Hospitalizations for Adults
Age 20 to 24 (2002-2012)**



- From 2014-16, 13% of fatal narcotics overdoses and 22% of non-fatal overdoses in Somerville were among people aged 16-25. (Somerville Fire and Police, COHR Narcotics Misuse Master Database)

- Overall, in Somerville, the number of both non-fatal and fatal overdoses from narcotics rose sharply from 2010 to 2016. Based on estimates from Police and Fire records (some months may be missing), the number of non-fatal overdoses for narcotics increased from 96 in 2010 to 191 in 2016. Fatal overdoses for narcotics rose from 3 in 2010 to 21 in 2016, with the sharpest increase starting in 2014. The introduction of fentanyl into heroin supplies is associated with increases in statewide deaths. (Somerville Fire and Police)
- Preliminary Somerville data from 2017 shows slight decreases in the number of non-fatal and fatal overdoses.

Tobacco

Regional data for all adults over 18 years, from the Massachusetts Department of Public Health's Community Health Information Profile on Diabetes risk factors, for the greater Cambridge/Somerville Community Health Network Area, (2005-2013), indicate the local rate of smoking was 10.2% for males and 9.3% for females. In 2016 school health surveys of Somerville teens showed that only 5.3% of high school students had smoked during the past 30 days, and 6.8% used e-cigarettes, much lower than the regional level for adult smokers. E-cigarettes are one of the nicotine delivery products especially marketed to young people that has changed the tobacco landscape in recent years.

In the early adult age range of 18-24, national statistics from the CDC report that 42% of adults of this age with mental illness are smokers. Overall, Massachusetts smoking rates for all adults with mental illness is 30-34%. In 2013, a SAMHSA report highlighted the linkage between smoking and mental illness or substance use disorder. Based on 2009-2011 National Surveys on Drug Use and Health, it was determined that adults with any mental illness or substance use disorder, who represented 24.8% of the total adults, were responsible for 40% of all cigarettes smoked in the U.S. (Smoking and Mental Illness, SAMHSA, 2013). The cumulative risk factors of being low income, living in stressful conditions, and smoking –on top of mental illness—makes quitting more difficult and challenging for successful cessation programs.

Reducing smoking is considered a public health success, yet the reduction is not evenly distributed across income or education levels. According to the CDC, cigarette use is higher than the national average among those with lower formal education levels and those living below the poverty level; specifically, the smoking rate remains about 40% among those with a high school equivalency certificate (Cigarette Smoking, CDC, 2017).

Physical Health

Obesity

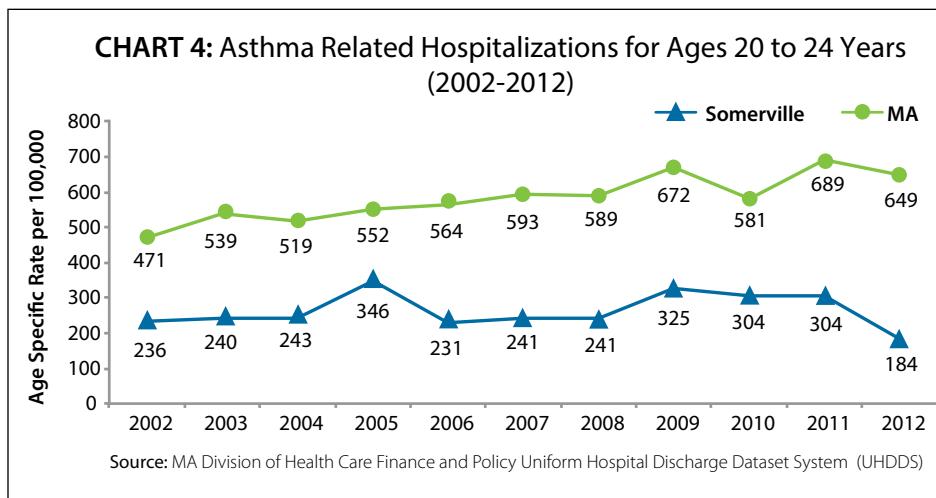
Massachusetts' rate for obesity among 18-25 year olds was low at 10.6%, based on 2015 data as reported by The State of Obesity, a project of the Trust for America's Health and the Robert Wood Johnson Foundation. Regional data for all adults over 18 years, from the Massachusetts Department of Public Health (MA DPH Community Health Information Profile Diabetes Risk Factors), indicates that within the greater Cambridge/Somerville community health network area from 2005-2013 for all ages the obesity rate was 22.3% for males and 15% for females, with overweight rates for males at 59.3% and for females at 40.3%.

Behavioral risk factors can help predict future health outcomes. Limited data is available locally, but the four risk factors listed in Table 1 are related to risks for obesity and cardiovascular disease. Early adults may be part of a trend towards increasingly sedentary lifestyles, possibly due to the fact that social media has been part of their lives since childhood. More than 20% of Somerville adults, based on 2014 data from

TABLE 1: Select Behavioral Risk Factors, Somerville and MA residents age 18+	Somerville	MA
No leisure-time physical activity	20.2	19.7
Obesity	24.8	23
High blood pressure	27.9	27.5
High cholesterol	31.4	32.6

the Selected Behavioral Risk Factors, have no leisure time physical activity. In addition, a 2005-2013 study of diabetes risk factors among regional adults over 18 revealed that only 28.5% of males and 37.5% of females reported eating 5 or more servings of fruits and vegetable in a day (MA DPH CHIP Diabetes Risk Factors). It has been proposed that increasing the consumption of fruits and vegetables, perhaps by government incentive subsidies, could most effectively help reduce health disparities and improve health outcomes.

For young people ages 18-25, entrance to the military can be a potential path to advancement for economically disadvantaged youth, but requires passing a physical exam. In 2016, the U.S. military reported that close to 8% of active duty personnel were overweight or obese, an increase of 1.6% since 2001. The highest rates were among women, Blacks, Hispanics, older members and those working in health-related jobs. These rates are still much lower than for the U.S. population in general. Failure to meet fitness standards, due to lack of physical activity or obesity is increasingly creating a barrier to young people joining the military service, with 62,000 applicants failing due to weight between 2006 and 2011 (Tilghman, 2016).



Respiratory Health

Data on asthma related hospitalizations for ages 20-24 by race is not consistently available. For those years when it is, however, Somerville shows similar trends to MA in higher rates for Blacks and Hispanics, though data is not sufficient to indicate the magnitude of the difference by race. (UHDDS)

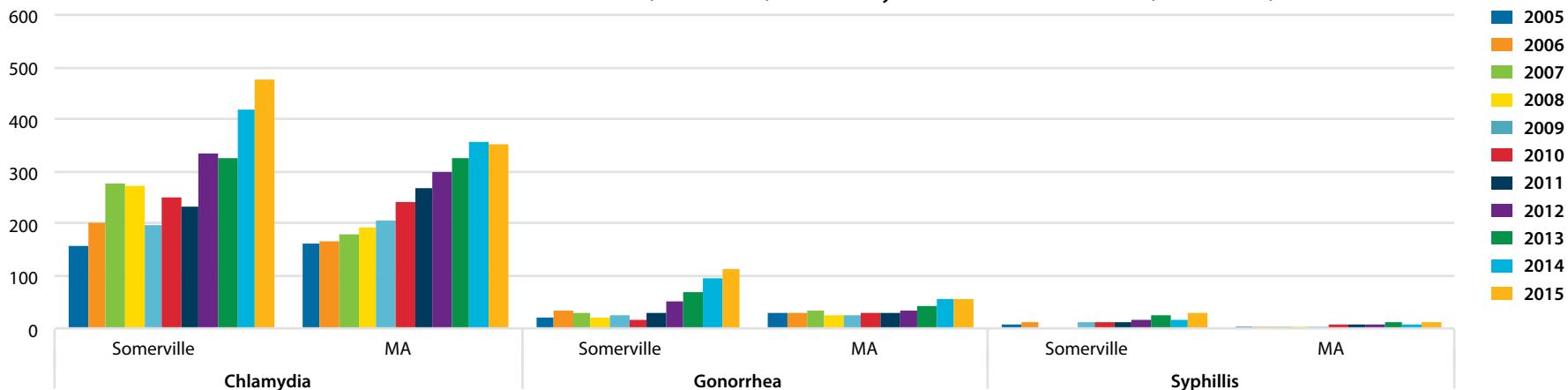
- Since 2002, the rate of asthma related hospitalizations rates for early adults has been consistently lower in Somerville than Massachusetts, according to Chart 4. (UHDDS)

Sexual and Reproductive Health

In 2016, 59 women in this age group residing in Somerville gave birth, a decrease from 2012, when there were 79 births in this cohort. For those not wanting to start families yet, reproductive health care and family planning services is important and may be some younger people's only connection to the health care system.

Sexual education for young people in Somerville is an important tool for keeping residents throughout the life stages safe from Sexually Transmitted Infections (STIs) and unwanted pregnancy; however, it is important that education and access to resources is ongoing throughout adulthood. There has been a national increase in STIs, and in 2015 total cases nationally were at an all-time high. To slow the transmission of STIs, it is important that sexually active early adults are screened annually, especially for chlamydia, syphilis and gonorrhea. National guidelines are for all sexually active women under 25 to be screened yearly for gonorrhea (CDC, Sexually Transmitted Disease Surveillance, 2016). Recent developments have shown increasingly drug resistant strains of gonorrhea showing up in the U.S., making treatment more challenging and prevention even more important. Also critical is that healthcare providers are LGBTQ friendly, with services to meet the needs of all gender and sexual orientations to insure safe access to health care for young people regardless of their orientation.

CHART 5: Incidence Rates (New cases) of Sexually Transmitted Infections (2002-2015)



Source: Division of STI Prevention, Bureau of Infectious Disease and Laboratory Sciences, MA DPH

- As seen in Chart 5, there has been an overall increase in the rate of new cases per year of chlamydia, gonorrhea and syphilis among Somerville residents of all ages since 2005. The incidence rate of each of these three STIs more than tripled between 2005 and 2015 and most currently available data indicates they are occurring at higher levels in Somerville than statewide. (CDC, Sexually Transmitted Disease Surveillance, 2016)
- National data, not pictured above, shows that young people ages 15-24 accounted for almost two-thirds of chlamydia diagnoses and half of gonorrhea diagnoses in 2015.
- From 2014 to 2015, nationally reported congenital syphilis (which occurs when the infection is transmitted from a pregnant mother to her baby) increased by 6%.

Ages 18–24

CHA Sexual & Reproductive Health Services

The Cambridge Health Alliance offers sexual and reproductive health services at various locations including Somerville. Counseling services do not require clients to be CHA patients. Some visits and services are free, depending on eligibility. Services offered by CHA include birth control and emergency contraception, family planning, HIV and STI testing, and pregnancy testing. Visits are confidential.

The Sexual and Reproductive Health program also conducts community education sessions. Information provided includes materials on birth control, STIs, relationships, gender and sexual orientation, racism in healthcare and other topics. Educational support is offered at Simmons College and Tufts University, as well as workshops through the Somerville Homeless Coalition, Somerville YMCA CIT/LIT Job Readiness Program and various other community groups as requested.

Early Adult Top 5 Causes of Hospitalizations and Deaths

TABLE 2: Top Causes of Hospitalizations (2010-2012)	Top 5 Causes Somerville*	Age-specific rates per 100,000	Top 5 Causes Massachusetts*	Age-specific rates per 100,000
Early Adult (20-24 years) All Causes in Somerville: n= 732	1. Mental Disorders: All	607.3	1. Mental Disorders: All	1098.5
	2. Digestive System Disease: All	285.6	2. Respiratory: COPD, All (Related)	661.3
	3. Respiratory: COPD, All (Related)	278.4	3. Respiratory: Asthma Related	639.8
	4. Respiratory: Asthma Related	263.9	4. Injuries: Opioid	633.0
	5. Injuries: Opioid	206.1	5. Digestive System Disease: All	490.5

TABLE 3: Top Causes of Death (2010-2012)	Top 5 Causes Somerville**	Age-specific rates per 100,000	Top 5 Causes Massachusetts	Age-specific rates per 100,000
Early Adult (20-24 years) All Causes in Somerville: n= 6 **For each of the Top 5 Causes, there was one death from 2010-2012	Bladder Cancer	3.6	1. All Poisoning Injuries	12.7
	Suicide	3.6	2. Motor Vehicle Related Injuries	11.7
	All Poisoning Injuries	3.6	3. Opioid Injuries	10.6
	Suffocation	3.6	4. Homicide	10.1
	Asthma	3.6	5. Suicide	10.0

Data Source: Uniform Hospital Discharge Data System Massachusetts Division of Health Care Finance and Policy, MDPH (MassCHIP).

The source file is maintained as a zip code based file; 3 year average estimates 2010-2012

Notes: Please note that within some groupings/classifications may overlap and be counted more than once within the rankings

Related includes secondary and primary diagnoses

*Excluded childbirth, pregnancy, puerperium in Causes of Hospitalization ranking

Mental disorders are not detailed individually via MassCHIP

Chronic Obstructive Pulmonary Diseases (COPD) include: Bronchitis (chronic and acute); Emphysema; Asthma; Bronchiectasis; Axtrinsic allergic alveolitis and Pneumonitis

Digestive System Diseases: Diseases of oral cavity, salivary glands, jaw, esophagus, stomach, appendix, intestines, liver, gallbladder, pancreas

All poisoning injuries include: Unintentional and intentional poisoning by self or other from chemicals or noxious substances, including prescription or recreational drugs, alcohol, solvents, vapours, gases, pesticides, and biological substances.

Suffocation includes: Unintentional and intentional strangulation or obstructed airway by self or other from food or other object; accidental mechanical suffocation.

Injuries: Opioid includes: Non-fatal Opioid-related associated with Opioid abuse, dependence and/or poisoning (overdose)

Hospitalizations and Deaths

- As seen in Table 2, the top five causes of hospitalization in Somerville were the same as in the state as a whole, although in a different order.
- The rates of hospitalization for the top 5 causes in Somerville are lower than for the top five causes in Massachusetts including the rate of hospitalization for opioid injuries, which is three times higher in Massachusetts than in Somerville.
- A limited number of early adults died in Somerville during the 2010-2012 period studied, leading to insufficient data to make generalizations about the top causes of death.
- As seen in Table 3, the top 5 causes of death in Somerville occurred at significantly lower age-specific rates per 100,000 than in Massachusetts.

Disability

Young people with disabilities may stay engaged with the public school system through the age of 21, under federal law. This extra time may provide additional opportunities for them to gain transitional life skills and work experience. Research indicates that paid employment prior to leaving school is one of the best predictors of later employment. Other factors impact the success of students with disabilities as they shift into adult non-school settings, including parental expectations. According to a CDC study on wellbeing measures in the U.S., piloted in three states, adults with disabilities were the most likely population to experience challenges with mental wellbeing. (Kobau et al., 2013)

Housing for those in the early adult years who have a disability may be challenging. The majority of individuals in this category live with parents or other family members, as options are limited. Continued dependence on parents for housing can impede potentially desired progress toward development into independent adulthood.

Education

Access to college immediately or soon after high school graduation sets up early adults to complete higher education before they start a family, and it opens doors to higher earning positions for all people in the family, regardless of stage of life. Among 2015 graduates of the Somerville school district, 70.7% attended college, according to the Massachusetts Department of Elementary and Secondary Education (MA DESE). This includes 75.7% of female graduates and 65.5% of males. MA DESE also published the plans of high school graduates from the same year, 2015, noting that 78% of students planned to attend a 2 or 4 year college or university. This statistic indicates that there is a gap in access to higher education for some who hope to attend college, especially males.

It is important that communities provide resources to help graduating students understand college options, especially those available in the state university system, including clear information regarding admissions processes and financial assistance and how to address barriers related to immigration status. The largest gap in earnings comes between those with a high school diploma and those with a college degree; according to the Association of Maternal & Child Health Program (AMCHP), college graduates earn 63% more, on average, compared to high school graduates.

Advanced job training may also be beneficial for the portion of graduates who plan to enter the workforce after high school graduation (13% in 2015 according to MA DESE). The availability of such programs may provide incentives for students to complete their high school degree, which, on average, would allow them to earn 38% more than they would without a high school diploma.

The rate of millennials living with their parents has been steadily increasing since the Great Recession of 2007-2009, due to high housing costs.

Economic Stability

According to the Pew Research Center's article, "Living With Parents Since the Recession," (Fry, 2013) the rate of millennials living with their parents has been steadily increasing since the Great Recession of 2007-2009, due to high housing costs. This is disproportionately the case for low-income, male, unemployed individuals between the ages of 18-25. It is thought that this trend stems from fewer employment opportunities, higher college enrollment and lower marriage rates. Upon graduation from college, the financial burden of starting regular loan payments can be a daunting economic reality. The Somerville median household income increased by 16% from 2006 to 2015 (see Demographics chapter for details), but not for all residents as, in general, wealth disparity has increased and wages have been stagnant when inflation is considered.

Poverty

American Community Survey data from 2011-2015 for Somerville indicates an average poverty rate of 14.7%, across all ages. In contrast to the federal poverty level determination of basic expenses, the MIT Living Wage Calculator for Greater Boston calculates the baseline financial earnings needed to live in this geographic area—given the actual prices of housing, food, etc. For 2017, the calculator determined that a single adult needed an average of \$27,081, requiring an hourly wage of \$13.02 for full time work to afford to live in the area. This does not include expenses such as college loans, which may be an issue for early adults as they complete college. Basic expenses for one adult with one child requires an hourly wage of \$27.31 for a \$56,430 annual income; two adults would need \$38,771 combined annual income. For context, in 2017 the U.S. poverty threshold was \$13,860 for an individual and \$18,670 for a family of two.

Homelessness

Somerville has only a small homeless population (LC-07A) that is considered unsheltered. Annually, Massachusetts cities complete a survey of youth and young adults who are not permanently housed, who may be couch surfing or finding other ways to gain shelter. In 2015, the annual "Point in Time count" observed six individuals on the street; in 2017 the point in time count was zero individuals living on the streets in Somerville. The Point in Time count from January 2017 reported 34 people sheltered in Somerville, 11 who were ages 18-24, 30 of whom were female, 13 with a serious mental illness, 8 with substance use disorder, 2 with HIV/AIDS and 20 victims of domestic violence (Point in Time Count). The Massachusetts Bay Veterans Center opened in 2014, adding 22 transitional beds specified for veterans, which has raised the available shelter options in the area for local homeless veterans.

Affordable Housing/Housing Security

The increase in rental costs has resulted in households being displaced from Somerville. The advent of house-sharing websites that allow for short term rentals, such as Airbnb, has also shifted the available rental stock, while also offering possible economic gains for those who are "house rich but cash poor." Early adults who are native Somerville residents, who grew up here and expected to stay in the city, may not be able to afford to, unless they are able to live with family or have a good paying job. Another way that young people afford living in the city is by doubling or tripling up, sharing some of the larger apartments with other young adults.

Employment and Living Wage Jobs

Inequities in work conditions and benefits, such as the frequent lack of adequate sick day policies in part-time and service sector jobs, can negatively affect early adults who occupy entry level positions at higher rates than those at later life stages and who, as the demographics chapter indicates, represent higher percentages of minority populations than older generations do. While states like Massachusetts implemented a policy in 2015 that requires employers to allow workers a minimum number of paid sick days, many states do not allot sick time for low-paid and new

employees. This is not only detrimental to the health of the individuals, but can also affect company-wide health and performance.

In 2014, the National Undocumented Research Project (NURP), a national longitudinal survey of 2,684 young people eligible for consideration through Deferred Action for Childhood Arrivals (DACA), found that DACA eligibility positively impacted employment opportunities for early adults, which helps both the individual young people and their local economies. Participants in the study also noted that the decrease in stress levels post-DACA had a positive effect on their ability to work or study (Gonzales and Bautista-Chavez, 2014).

First generation youth, who immigrated as children, often have worked hard to overcome the multiple challenges of being an English Language Learner, experiencing an unfamiliar culture or living in poverty. They have managed to succeed in high school, only to discover that their immigration status prevents equal access to higher education or employment options. DACA once provided a way to gain authorization for employment and protection from deportation for those meeting all of the following criteria: arrival in the U.S. before age 16, here in the U.S. before June 2012, under age 31 on June 15, 2012, no criminal record, and were in high school or obtained a GED or were a veteran.

Early adult veterans are usually returning from a one or two (4-year) term of service and are reintegrated back into the civilian sector yet may face challenges of employment, as well as education, housing and health-care (VA or civilian).

Food Security

The Supplemental Nutrition Assistance Program (SNAP, or “Food Stamps”) is available to support a portion of food budgets for those who meet income and other qualifications. Though data is not available specifically for early adults, in 2015, 9.3% of the 32,000 Somerville households received some SNAP benefits. This is an increase of 4.9% from 2010. The highest percentage of distribution of SNAP beneficiaries, between 2010-2015, was in the Black/African-American population

Somerville's Continuum of Care

The Somerville-Arlington Continuum of Care (CoC) is the local entity that coordinates housing and services funding for homeless individuals and families. Meetings of the CoC are held on the third Tuesday of each month from 2:00 p.m. to 3:30 p.m. CoC meetings are open to the public. To receive email updates about CoC meetings including meeting agendas, contact the City of Somerville Housing Program or Somerville Homeless Coalition. Visit the website at <http://www.somervillema.gov/coc> for additional information or resources, including the Resource Guide for People Homeless in Somerville and Arlington. HUD requires that each CoC across the country conduct a count of all sheltered and unsheltered people experiencing homelessness in the CoC area. This census is called the Point-in-Time Count and is done through the night and into the morning on the last Wednesday of January every year, weather permitting. In 2017, the PIT Count was held on January 25-26th. “Sheltered” includes those in emergency, transitional and safe haven housing (although Somerville-Arlington does not have safe haven housing at this time).



(28.8%) and Hispanic population (19.5%); Black/African Americans and Asians participation doubled during this period (American Community Survey). There is a 61% gap in the number of people in Somerville that are estimated to be eligible for SNAP benefits and the number who are enrolled in the program (Food Bank of Western Massachusetts).



Natural and Built Environment

According to Harvard researcher David Williams, known for his work in health equity, where we live, work and play has a greater impact on how well and how long we live than medical care. The City of Somerville is noted for its efforts to create a built environment that promotes healthier choices. The local natural environment has seen much change over centuries of development, with concentrated effort required to reclaim or restore natural resources such as the Mystic River and urban trees, which add to the character and livability of the city, and provide access to greenspaces within the urban setting. One of the goals of SomerVision calls for creating 125 acres of new open space by 2030, a challenging goal in this densely packed city that at the same time needs more housing.

Housing (safe, affordable and accessible)

Like the national trend, detailed by Richard Fry in multiple Pew Research Center reports, some Somerville early adults live at home or with family members to make it affordable. There is a long history in Somerville of renting larger apartments to groups of young people. This started near the universities, but has spread through much of the city. Young people now compete directly for available housing with families that have more than two children in an increasingly tight market. Sometimes, young people or even families have been victims of landlords looking to maximize profits while compromising safety by creating basement units or units without basic amenities, particularly impacting new arrivals or those who do not speak English well.

According to Harvard researcher David Williams, known for his work in health equity, where we live, work and play has a greater impact on how well and how long we live than medical care.

Safe and Secure Neighborhoods

Arrests of 16-20 year olds in Somerville have decreased dramatically from 151 in 2010 to 69 in 2016. Non-Domestic Violent Incidents, including robbery and assault, involving youth have decreased from 52 in 2010 to 31 in 2016 (Somerville Police Department).

Transportation

Somerville's Walk Score of 86/100 (a measure of walkability between two points) is the second highest in the state, just barely edged out by Cambridge. In 2013, it made the nation's Top 10 list. The Transit Score is 62/100, rating the public's access to public transportation (Walk Score). In 2014, Somerville was the first Massachusetts city to pass an ordinance for Complete Streets to support a safe, convenient and healthier community. The ordinance calls for city streets to be equitably available for all forms of transportation including cars, bikes and pedestrians, and has required changes in the way the city plan, designs, implements and maintains its streets. Somerville has developed a visibly bike-friendly infrastructure and related policies that encourages many early adults to bike. The addition of Hubway bike sharing stations throughout the city has made biking even more accessible for some residents. Car sharing options, as well as ride-hailing systems, have further revolutionized transportation for the younger generation, who have little need to own a car in Somerville.

Environmental Health

Environmental factors can lead to a variety of negative health outcomes. A concerning issue impacting Somerville is the introduction of ultrafine particles in areas in close proximity to Interstate 93, which research ties to elevated levels of asthma, respiratory infections and heart disease. These outcomes disproportionately affect those living in the I-93 area as well as bicyclists and walkers. A study by Jarjour et al. (2013) found that while there are negative effects on bicyclists, these individuals still have better health outcomes than those who get no exercise.

In 2014, Somerville was the first Massachusetts city to pass an ordinance for Complete Streets in the city to support a safe, convenient and healthier community. The ordinance calls for city streets to be equitably available for all forms of transportation including cars, bikes and pedestrians.





Climate Change

With significant turnover of students and young adults in Somerville, younger residents who are new to Somerville may be less informed about local climate risks and may not be aware of emergency alerts and services available, leaving them vulnerable to climate variations. Early adults who live in rented apartments may have less capacity to make improvements to their homes and therefore could be more vulnerable to heat waves and flooding.

Access to Nature and Open Space

Many young adults between the age of 20-35 enjoy being active in Somerville because of various local social recreational opportunities. Social sports leagues such as Social Boston Sports, Boston Ski & Sports Club, WAKA Kickball and Hub Sports all target early adults living in Somerville. The Somerville Parks & Recreation Department has a permitting process for the city's playing fields to handle requests efficiently and provides consistent policies and procedures. Typically, early adult users have access to the fields after the youth groups finish their activities at 8pm.

Social and Community Context

As mentioned earlier in this report, many in this age group are experiencing a prolonged transition to independence and a delayed adoption of traditional roles and milestones of adulthood that impacts their social and community context. The vast influence of social media also intrudes into daily life, affecting social interactions—and reportedly having impacts on mental health for young people.

Race

This age group is growing up in a more diverse U.S. population cohort than their parents. Fifty years after the U.S. Supreme Court removed legal barriers barring interracial marriages, the percentage of interracial and interethnic marriages had risen to 17% of all marriages in 2015. White and Hispanic/Latino couples have the highest rate of interracial marriage, at 42% of all interracial marriages, while marriages between U.S. born Blacks and Whites are 11% of the total of intermarried couples (Livingston and Brown, 2017).

A prominent issue extending across the life course is the discrepancy in opinion on race relations between the White and Black population in the US. One telling figure shows that 70% of Black Americans believe that racial discrimination is the reason why it is harder to get ahead, while only 36% of White Americans believe that racial discrimination makes it harder for Black Americans to get ahead (On Views of Race, Pew, 2016). Additionally, Whites are less likely to fault institutional racism as compared to Blacks, with 70% of the White population finding that prejudice against individuals is the most pressing issue at hand. The impact of these perceptions on young people of color who are striving to reach adult milestones is still very present, even decades after major civil rights policies legally changed the official landscape in the U.S.

Social Inclusion

In addition to race and immigration status, gender identity has been the focus of political shifts nationally in recent years. Massachusetts has been a forerunner in extending civil rights to include gender identity and sexual orientation with laws allowing same-sex marriage and anti-discrimination regulations specifically for transgender individuals.

Social Safety Network/Social Support

Strong social supports are protective during all stages of life. During this developmental stage, there is opportunity to focus on creating communities that help young adults to feel that they are a part of something larger than themselves. Once an individual has left behind their childhood home, school and/or university supports, it may be more challenging to maintain healthy habits in a period of rising independence and increased responsibility.

Social Media

Today's early adults grew up with cell phones, which morphed quickly into smartphones, bringing the internet and instant communication into daily life. The proliferation of smartphones and tablets revolutionized social media and made it ubiquitous in just a few years, differentiating the life experiences of this age group from those even just 6-7 years older (Twenge, 2017). A 2017 Pew Research report on mobile devices indicated that of 18-29 year olds, 100% had a cellphone, with only 8% of those not being smartphones. Of note is that young people 18-29, especially among those with incomes less than \$30,000 per year and who are non-White, are increasingly dependent on smartphones as their source for online information because they do not have broadband access at home (Mobile Fact Sheet, 2017).



Violence (Domestic Violence, Sexual Abuse)

In 2016, there were 198 Domestic Assaults recorded in Somerville for all ages (Somerville Police Department). Domestic assault can occur at any age, but early adults can be especially vulnerable to exploitation. Human trafficking is an issue that can often impact vulnerable young adults, attracting international, national and state attention. There is a national Blue Campaign, to help increase awareness and educate the public on human trafficking, with a focus on first responders and law enforcement. Human Trafficking is described by the US Homeland Security as “a modern-day form of slavery involving the illegal trade of people for exploitation or commercial gain.” This may involve sexual exploitation, or labor related exploitation, with 4,460 cases reported in the U.S. in 2017 by the National Human Trafficking Hotline. In 2017, they reported 40 cases connected to Massachusetts, but since this is an issue about which many victims have been silenced, the exact magnitude of this issue in Somerville is still unclear.

Community and Civic Engagement

Early adulthood is a time of social change for many. Somerville has a broad range of community programs, social services and neighborhood groups that provide multiple opportunities for active participation in



the life of the community. Residents who may be new to Somerville can track down activities of interest and “meet-up” opportunities through multiple online platforms. With “One Call to City Hall,” 311 is a great way to connect to City services, including volunteer opportunities. Users can call 311, use the web or download the smartphone app.



Recommendations for Early Adult

Ages 18–24

■ Increase access to health promoting resources

- Explore strategies to assist with transition from youth to early adult
- Improve opportunities to develop health advocacy skills and capacities, including self-care; especially for English language learners or those with special health care needs, including cognitive disabilities
- Engage pediatricians in transitioning young adults to adult primary care
- Improve data collection for health and wellbeing for early adults including partnerships with area higher education institutions

■ Create lifelong habits to promote mental health and substance use prevention

- Establish and foster peer and professional education opportunities on mental health
- Utilize Mental Health First Aid and the Trauma Response Network to meet the needs of this population
- Reduce barriers to isolation by exploring with community based providers on how to better engage this population
- Explore opportunities to promote sleep health
- Address cultural and ethnic variations in substance use in this age, especially in the advent of recreational marijuana regulations
- Expand partnership with area higher education institutions to educate and promote healthy behaviors
- Encourage life balance, financial and time management skills development, along with promoting positive self-care



■ Facilitate a community with strong social networks and support systems

- Increase in-person social networking and mentoring opportunities
- Increase access to higher education and job skills training for early adults including re-entry, delayed entry to advanced educational settings, continuing education and job placement and advancement
- Expand opportunities to engage in meaningful free time activities such as volunteering
- Identify Somerville businesses employing 18-24 year olds and develop targeted employee wellness and/or community connections

■ Support increased physical activity, healthy built environment and eating opportunities

- Engage this cohort in advocacy for equity and infrastructure improvements for active transportation, physical activity and healthy eating for all
- Encourage balanced use of recreational facilities to allow the city to offer more intramural sports through the recreation department targeting this age group
- Improve access to affordable healthy foods through age targeted workshops, including cooking and urban agriculture

Young Adult

Introduction

Young adults, for this report, are defined as 25-39 years. This age group dominates the Somerville scene, creating a spike in the distribution of ages across the city population. During this life stage, an individual's physical development is complete and physical health is often at its peak with young adults likely to self-report health as excellent or good. Mental development continues, impacting the many decisions typically encompassed by this life stage. This is also a prime time for childbearing and the time when Somervillians are most likely to become parents, connecting their own health to the health of the next generation. It can also be the time when households starting families consider whether to stay in Somerville. This decision can be impacted by the need for less expensive housing or a lead free unit with more bedrooms suitable for families with children.

As referenced in the Early Adult chapter, in past generations, adolescence was followed very closely by adulthood. Now, turning 21 doesn't necessarily mean accepting the traditional markers of adulthood –

During this life stage, an individual's physical development is complete and physical health is often at its peak. Mental development continues, impacting the many decisions typically encompassed by this life stage. This is also the time when Somervillians are most likely to become parents, connecting their own health to the health of the next generation.

starting a career, buying a house and settling down in a chosen community. These milestones are more often being deferred, impacting the activities and life focus during the Young Adult life stage. For some, the lines can be blurred between the values of youth, such as gaining independence, and the values of growing into adulthood, including commitment to greater responsibilities such as a career or parenthood. There have been significant shifts in social conditions because of the Great Recession's impact on job markets, changes in local real estate values, emergence of social movements such as expanded rights to marriage, the environmental /green revolution and the reactions to worldwide terrorism. Additionally, the increase in the cost of education, and the resulting debt, has also been a significant shift in social conditions. This financial burden has led some young adults to delay marriage, child bearing and home buying.

Young adults include a wide range of demographics representing singles, people living together, married people with kids or without kids, divorced individuals and many others. During this life stage, many are settling into the routines of life. They are entering a different world with

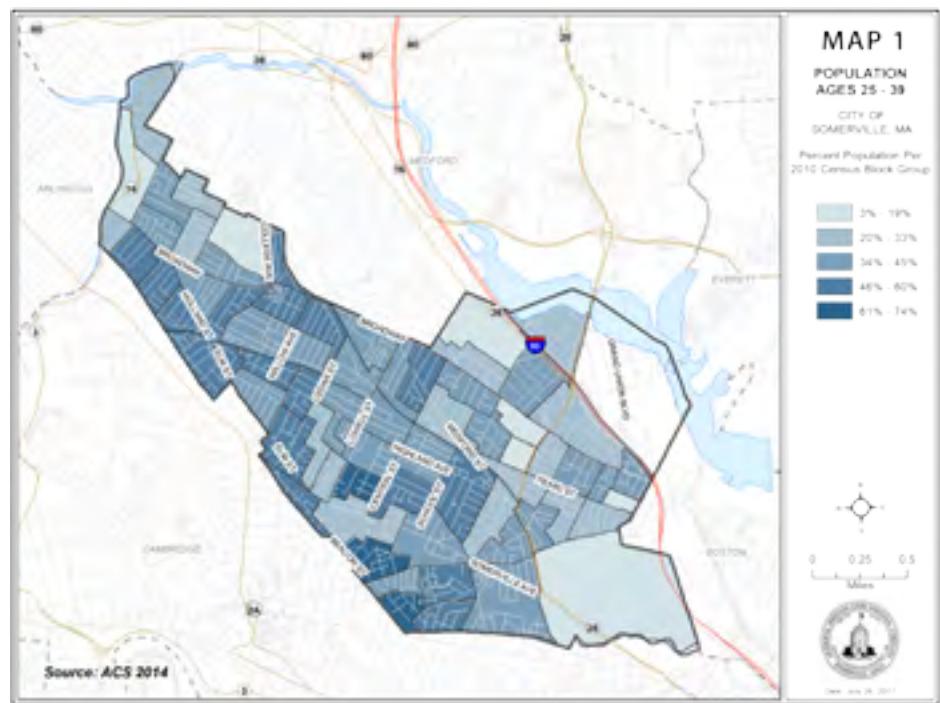


more choices but less security or structure. There is greater fluidity as changes related to jobs, housing, marriage or alternatives to marriage and even the definition of family have become more acceptable. Such changes can have an impact on physical and mental health. While these changes may help build resiliency and protective factors for some, others feel the stress to get a job, make money, be successful quickly and the overall weight of taking on life responsibilities. Today's young adults can often struggle with the multitude of options available, triggering anxiety, depression, a sense of despair and/or a lost sense of belonging.

This age cohort has seen the growth of personal computers and the internet, cable access and MTV as well as increased access to fast foods and ready-made foods. They have lived in a world that included AIDS and the legalization of same-sex marriage, the fall of the Berlin Wall, Middle East wars and increased income disparity. All these factors impact the health and wellbeing of this generation.

They are the first generation to use computers at school and at home, with ever expanding internet access. Their daily lives have always included computers and advanced technology, including ubiquitous cell phones allowing constant contact opportunities. Technology has strongly influenced this age group, from the impacts of social media and platforms such as Facebook, Snapchat and Instagram, to choices for relaxation with on demand movies or serial TV as a main source of relaxation.

For Somerville residents who grew up here, this is also the age group in which many were in high school during the early 2000s when the city experienced a wave of overdoses and suicides among young people, closely tied to opiates, particularly oxycodone. From a life stages perspective, the individual and community trauma of those years of loss could continue to ripple through the health of residents. Systems and supports in the community are becoming available to assist all young adults, regardless of their background, to maintain and improve health during this important period and into later life.



Demographics, age specific

Somerville is noted for its young adult population. According to the most recent 5-year estimates from the American Community Survey (ACS), the 25-39 population account for 40.3% of Somerville's population, much higher than the Massachusetts average of 29.6%. As illustrated on Map 1 above, across the city the distribution of young adults tends to impact every area of the city, with slightly higher concentration of young adults living along the Cambridge border.

Access to Healthcare (LC-40)

Health Insurance Coverage

Based on the American Community Survey data from 2010-2014, 5.1% of Somerville's 25-34 year old cohort had no health insurance. Of

the 94.9% with health insurance coverage, 84.8% had private insurance and 12.1% public health coverage. Individuals can be covered under their parents' health care policies until age 26, a change made possible under the Affordable Care Act, making alternative sources of health insurance and/or work status after age 25 a necessity for continued health care access. A national survey by Kaiser Health indicates that Massachusetts has a history of having the highest monthly health insurance costs, as much as twice the national average, according to MetroBoston Data-Common.

Primary Care Provider

The Healthy People 2020 goal to increase the proportion of adults aged 18 to 64 years who have a specific source of ongoing care (AHS-5.3) is in alignment with preventative and public health goals for this age group. It is important to have periodic check-ups to keep immunizations up to date and to screen for incipient chronic diseases which may show up during these years. Primary care can also help reinforce healthy habits to improve the healthspan, the length of time an individual is healthy. In 2015, of Somerville residents age 25 to 40 years, 8,373 of them received their primary care at Cambridge Health Alliance (CHA), about a third of the total Somerville CHA patient population.

Immunizations

Data is not available specific to this age group related to immunization rates. Recommended immunizations for this age group include annual influenza and 10 year Tdap.

Oral Health

Somerville's drinking water, provided by the MWRA, is treated with fluoride, one of the protective factors for dental health (LC-05). Oral health data is limited, locally, statewide and nationally. Given the importance that oral health has for overall wellbeing, this lack of data is signif-

icant. Since this age cohort has the highest pregnancy rates, it is worth noting that statewide, as of 2015, 45.6% of mothers reported having their teeth cleaned during pregnancy. The percentage varied by race and ethnicity, with Whites reporting the highest level at 55.3% and Blacks the lowest at 33.1% (MA Department of Public Health, State Report, Births 2015).

Behavioral and Mental Health

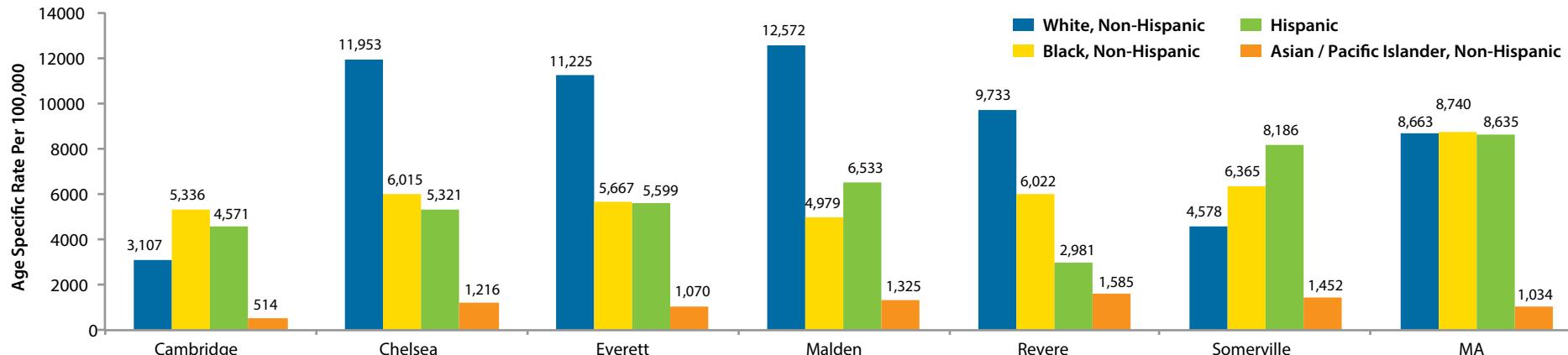
Culturally and socially in the U.S., there can be many barriers to accessing mental and behavioral health (LC-43) including in this age group, where data shows higher rates of reported mental health related disorders in Black and Hispanic/Latino populations.

The concept of adverse childhood experiences (ACEs) and the impact on later health and wellbeing, as illustrated in Image 1, is related to the effects of historical trauma. There is growing recognition of the cumulative nature of both past and current experiences of trauma, especially as it manifests differently within various cultures. People from groups that have historically been oppressed continue to demonstrate high

Image 1: Adverse Childhood Experiences Pyramid



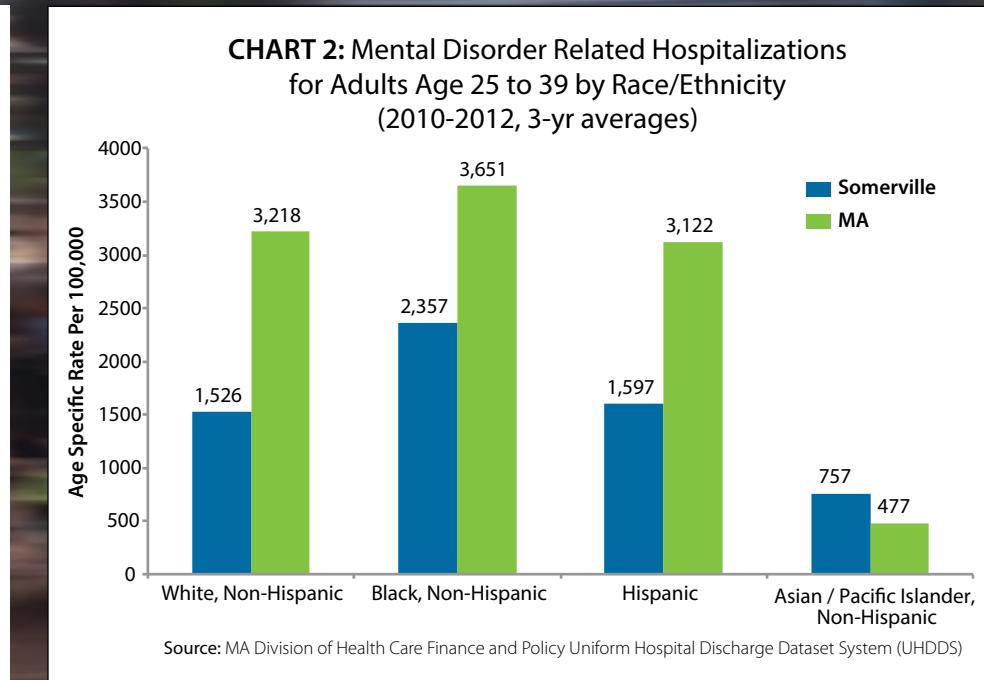
CHART 1: Mental Disorder Related ED Visits for Adults Age 25 to 39 by Race/Ethnicity (2010-2012; 3-Year Average)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)

- Chart 1 shows us that the mental disorder related emergency department visit rate from 2010-12 was higher for Hispanics age 25-39 in Somerville than in all surrounding cities, but lower than the state rate. The rate for White, non-Hispanic Somerville residents was lower than in all surrounding cities, except Cambridge, based on 3-year average estimates (UHDDS).
- According to cross tabulated data by gender, mental disorder related emergency department visits for young adults ages 25-39 in Somerville were 71% higher for males than females (6,862.6 per 100,000 for males and 4,004.3 per 100,000 females). The hospitalization rate for mental disorders was much more even, with males being hospitalized at a rate of 1,783.1 per 100,000 men and females being hospitalized at a rate of 1,682.5 per 100,000 women.
- As shown in Chart 2, in Somerville, Blacks had the highest rate of mental disorder related hospitalizations in this age group (UHDDS).
- According to regional data, White residents in Somerville had a lower average rate of mental disorder related hospitalizations between 2010 and 2012 than White residents in all surrounding cities except Cambridge.

CHART 2: Mental Disorder Related Hospitalizations for Adults Age 25 to 39 by Race/Ethnicity (2010-2012, 3-yr averages)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)

levels of trauma in their lives, perpetuating health inequities and disparities. Additional research is needed to better understand the underlying factors of racial and ethnic variations in mental health in Somerville data. Across cultures, however, it has been consistently demonstrated that ACEs often perpetuate across generations within families. Communities can provide extra support for young adults who may need to address their own trauma histories as they start to raise a family. Nurturing relationships are part of creating an environment that facilitates the well-being of both young adults and their young children, such as through the practices of healthy parenting.

Data indicates that suicide was one of the top five causes of death in Somerville in this age group from 2010-2012, with 12 suicides (MA DPH Uniform Hospital Discharge Data System (UHDDS)). Social supports and mental health care are key elements in suicide prevention. Trend data is available over the past 12 years on both suicidal ideation and worry for middle and high school students, which might provide some insight into this age cohort for those who grew up in Somerville. An outcome of the wave of suicides and overdoses in the early 2000's, the City maintains a trained Trauma Response Network that activates after suicides, or other community occurrences that might trigger trauma and mental health impacts.

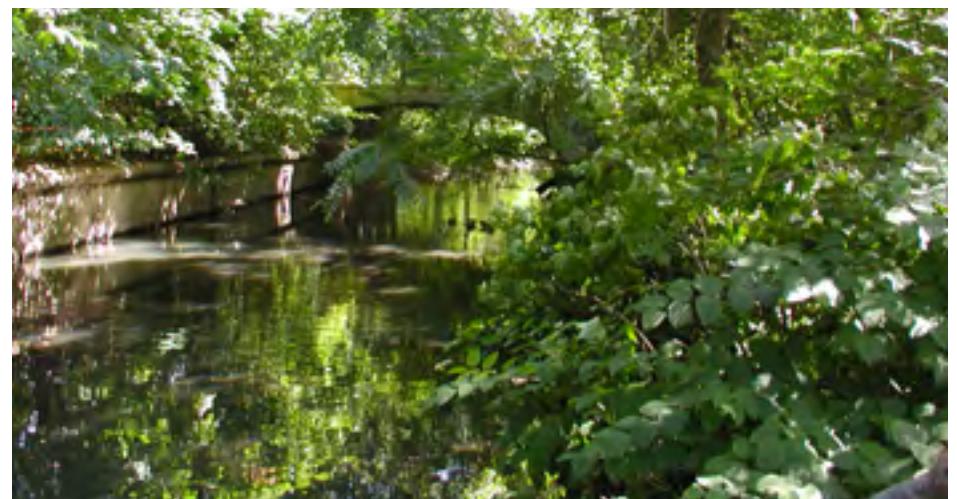
Substance Use Disorder/Addiction

Increasingly, the links between mental health and substance use disorder and addiction are more widely acknowledged and recognized. Also, there has been a significant effort made in Massachusetts, Middlesex County and in Somerville to address the myriad factors related especially to the rise in addiction to opioids and the related overdoses and deaths. Changes in the drug trade, including the introduction of fentanyl and other synthetic drugs into local heroin supplies, have been linked to some of the increase in deaths and overdoses. However, the increased access and utilization of Narcan and its integration into the toolkit of emergency responders has helped to decrease fatal overdoses in

the city and the state. The increasing presence of potentially more lethal synthetic opioids, including fentanyl and carfentanyl, has increased the need for responders to carry more Narcan to counteract the high potency of the manufactured drugs added to heroin on the street.

The need to directly address the stigma historically associated with substance use disorder has been reinforced by gains in neuroscience and the understanding of how the brain works and the impacts of substances. The classification of addiction as a chronic disease has begun to shift the way that both the public and the health care community view individuals struggling to recover from substance use disorder. Financial supports such as the Mental Health Parity and Addiction Equity Act of 2008 and the 2010 Affordable Care Act have helped to change the landscape. Data collection and reporting has made apparent the high level of personal, family and community impact from addictions, especially the rise in overdoses related to opioid use over the past few years (U.S. Dept. of Health & Human Services, 2016).

Community practice suggests that peer to peer and family to family prevention and recovery supports can be critical in reversing trends in substance use disorders and addictions, modeling success and providing hope across the spectrum of recovery.



Alcohol

This is the age when many become parents. A key preventative life course health intervention focuses on pregnant women at risk for alcohol use or depression, to mitigate the potential impacts on infants and young children raised by parents dealing with addiction and mental health issues. Literature on children as caregivers cites that substance use and mental health issues are two of the key reasons that children find themselves caring for parents and/or for younger siblings.

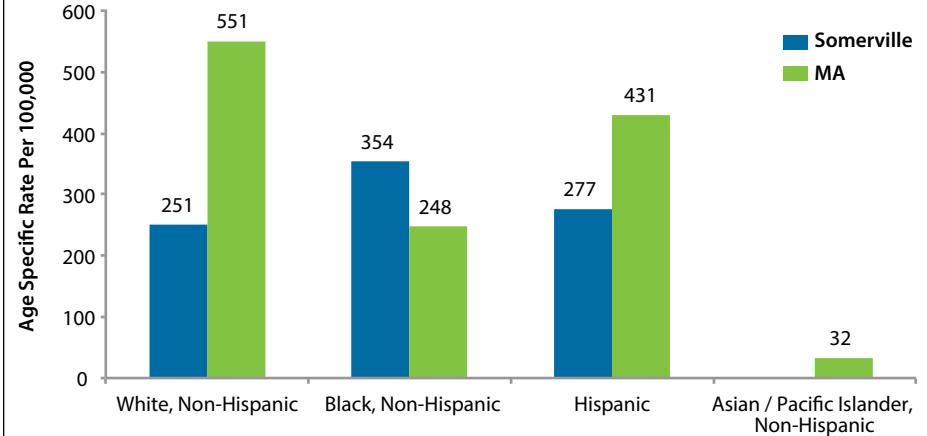
Community programs can help to prevent and reduce negative mental health effects associated with unemployment and job-seeking stressors for those in recovery. Beginning in young adulthood, the cumulative effects of excessive alcohol use can begin to present. Even among those who have stopped drinking, those who once drank to excess are now at higher risk for health issues such as liver disease, heart disease, cancer and gastrointestinal problems.

Beginning in young adulthood, the cumulative effects of excessive alcohol use can begin to present. Even among those who have stopped drinking, those who once drank to excess are now at higher risk for health issues such as liver disease, heart disease, cancer and gastrointestinal problems.

- Black Somerville residents ages 25-39 had the highest rate of alcohol/substance related hospitalizations among all races, according to the 2010-2012 3-year average data portrayed in Chart 3 (UHDDS).
- The rate of substance abuse treatment admission for alcohol rose with age in Somerville in 2013, while adults 25-29 entered treatment at a rate of 128 per 100,000 people 25-29 (18 total admissions), 30-34 year olds were admitted at a rate of 351 per 100,000 (34 admissions), and 35-39 year olds were admitted at a rate of 352 per 100,000 (22 admissions) (MA DPH Bureau of Substance Abuse Services).

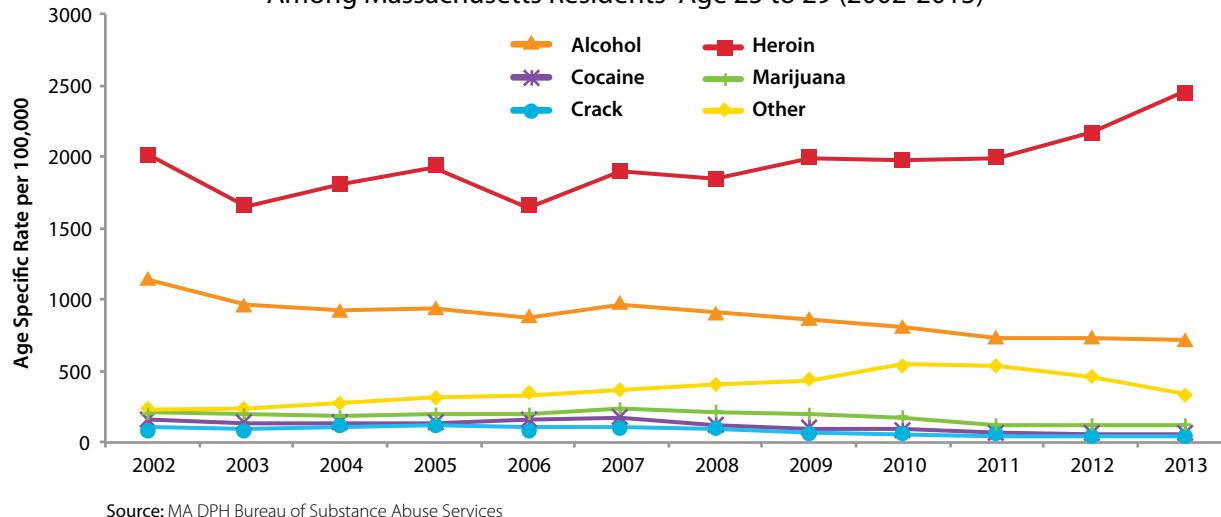
It is important that those who suffer from alcohol or substance dependence are connected to ongoing treatment or supports, as simply visiting the hospital for an acute episode related to alcohol or substances will not treat continuing symptoms of addiction and dependence. Opioid injury can quickly lead to death if not treated quickly and properly.

CHART 3: Alcohol/Substance Related Hospitalizations for Adults Age 25 to 39 by Race/Ethnicity (2010-2012, 3-yr averages)



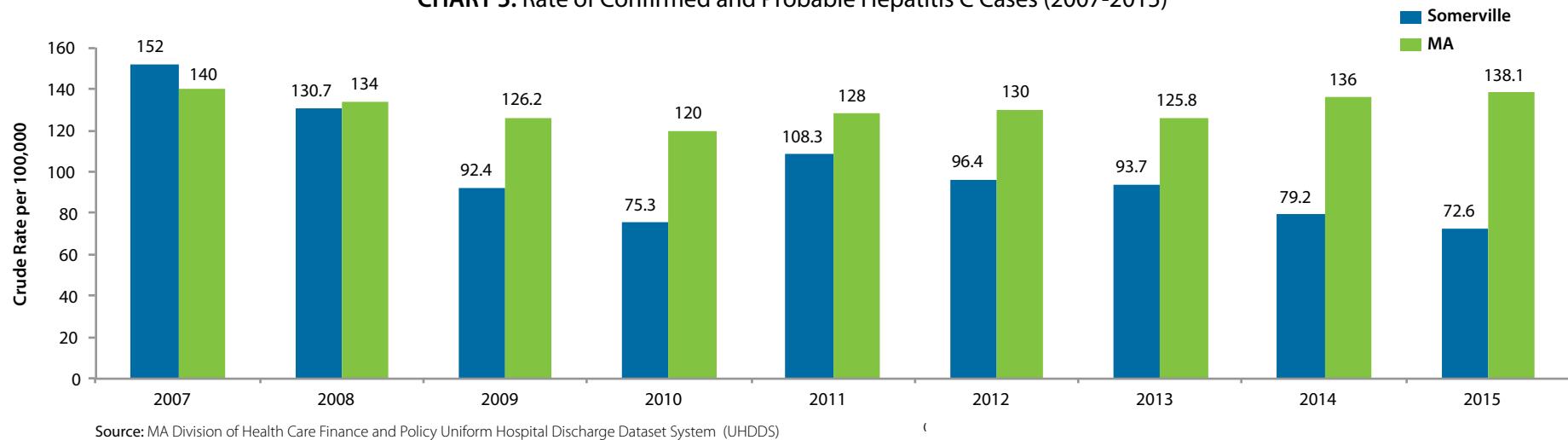
Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)
For Somerville, Asian/Pacific Islander, Non-Hispanic rate was not applicable

CHART 4: Substance Abuse Treatment Admissions, by Primary Substance Used Among Massachusetts Residents Age 25 to 29 (2002-2013)



- Overall, in Somerville, the number of both non-fatal and fatal overdoses from narcotics has risen sharply from 2010 to 2016. Based on estimates from Police and Fire records (some months may be missing), the number of non-fatal overdoses for narcotics increased from 96 in 2010 to 191 in 2016. Fatal overdoses for narcotics rose from 3 in 2010 to 21 in 2016, with the sharpest increase starting in 2014 (Somerville Fire and Police).
- According to the Massachusetts Department of Public Health, opioid related admissions to the Bureau of Substance Abuse Services rose from 31% of admissions in 2000 to 55% in 2014, and in 2015 there were an estimated 1,526 opioid deaths in MA, the most deaths in one year for at least the 15 years prior (MA DPH Bureau of Substance Abuse Services).
- According to Chart 5, heroin was the most commonly used substance among 25-29 year olds in Massachusetts admitted to treatment in 2013, while alcohol was the second most used substance. The rate of heroin related admissions rose between 2011 and 2013, while the rate of admissions related to other drugs decreased or leveled off in that time (MA DPH Bureau of Substance Abuse Services).
- Although not shown above, the order of most commonly used substances among adults in treatment in Massachusetts is the same for adults 30-34 and 35-39.

CHART 5: Rate of Confirmed and Probable Hepatitis C Cases (2007-2015)



Infectious disease

Hepatitis C is an infectious disease that can be transmitted by the use of shared needles, by blood, and sometimes, sexually. Hepatitis C is often linked to injection drug use such as opioid use. For Somerville residents, there is a nearby needle exchange in Cambridge. The Cambridge Needle Exchange offers clean needles, substance abuse support and counseling, shelter and hepatitis C services. CHA Zinberg Clinic located at Cambridge Hospital is a dedicated care center using a multidisciplinary approach providing primary and specialty care for HIV, viral hepatitis and sexually transmitted infections.

- In Somerville, the rate of confirmed and probable hepatitis C cases overall decreased between 2007 and 2015 and has been consistently lower than the MA rate (UHDDS).
- According to data not shown above, in the 25-40 age group, there was an average of 27 confirmed or probable cases of hepatitis C over the three years between 2013 and 2015.

Physical Health

Obesity

Physical activity and nutrition are both closely linked to obesity. Only 19.6% of Massachusetts adults, overall, consumed 5+ fruits/vegetables a day in 2015, according to the 2017 Massachusetts Health Council Report on Preventable Conditions and Social Determinants. The report found that, for consumption of healthy food, disparities were greater along educational attainment lines than racial and ethnic lines. As income and educational attainment are known to be related, the fact that adults who are college educated are 60% more likely than adults without a high school diploma to consume five or more servings of fruits and vegetables per day may be due to financial ability to access and consume nutritious foods. Parents of young children consistently report challenges in finding the time to exercise themselves or participate in other health promoting activities.

Based on 2016 data from CHA patients living in the area, in terms of body mass index (BMI) reporting, African Americans, Haitians, Latinos and Portuguese/Azorean patients 18 and over were most likely to be overweight or obese, with an overall rate of 66.1% overweight or obese, with lowest rates in the Asian populations (CHA)

Massachusetts 2015 data indicates that statewide maternal body mass index records showed that 25% of mothers were overweight and 19.8% were obese prior to pregnancy. By race and Hispanic ethnicity of Massachusetts women prior to pregnancy, 29.2% of Black women, 25.5% of Hispanic/Latino, 18.8% of Whites and 6.5% of Asians were obese (MA DPH, MA Births).

Data from a national report on obesity, indicated that based on 2015 data, 23% of state residents in the 26-44-year range were obese; more than double the rate for early adults ages 18-25 in the same year. Blacks (35.9%) and Latinos (32.4%) were more likely to be obese than Whites (23%) (The State of Obesity).

Respiratory Health

Asthma and other respiratory diseases are among the top five causes of hospitalization for this age group. However, little data is available to provide insight into this health issue for this age group, nor is there much age-specific data on smoking.

Sexual and Reproductive Health

The rapid rise of drug resistant gonorrhea is being described as an urgent threat by the CDC, significant enough to require targeted education. The incidence of gonorrhea continues to be higher in Somerville, at about double the Massachusetts rate, with a rapid rise from 2012-2016, during which time the state rates rose only slightly (MA DPH, Bureau of Infectious Diseases, Division of STI Prevention).

This is the age when most Somerville mothers give birth, so maternal health and prenatal care are a key focus of sexual and reproductive health

Evolution of USDA food guidance

The United States Department of Agriculture (USDA) released its first Food Guide Pyramid in 1992, providing the image for nutrition guidance as this group was growing up. This guide was just one in a series of food guidance elements offered by the USDA. The pyramid shape has since been replaced by the Healthy Plate image. Harvard School of Public Health has developed an adaptation of the healthy plate, with additional teaching tools and translations available in multiple languages.



in this life stage. Future parents who may have delayed having children may find they need the assistance of fertility programs to become pregnant, which may raise the odds of multiple births, with 13.4% of total births in Massachusetts in 2015 connected to fertility treatments (MA DPH Registry of Vital Records and Statistics).

Young Adult Top 5 Causes of Hospitalizations and Deaths

TABLE 1: Top Causes of Hospitalizations (2010-2012)	Top 5 Causes Somerville*	Age-specific rates per 100,000	Top 5 Causes Massachusetts*	Age-specific rates per 100,000
Young Adult (25-39 years) All Causes in Somerville: n= 4,700	1. Mental Disorders: All	643.2	1. Mental Disorders: All	1,118.0
	2. Digestive System Disease: All	421.4	2. Respiratory: COPD, All (Related)	852.1
	3. Respiratory: COPD, All (Related)	350.5	3. Respiratory: Asthma Related	800.9
	4. Respiratory: Asthma Related	329.4	4. Digestive System Disease: All	711.8
	5. Injuries: Opioid	313.9	5. Injuries: Opioid	681.8

TABLE 2: Top Causes of Death (2010-2012)	Top 5 Causes Somerville	Age-specific rates per 100,000	Top 5 Causes Massachusetts	Age-specific rates per 100,000
Young Adult (25-39 years) All Causes in Somerville: n= 41	1. All Poisoning Injuries	14.4	1. All Poisoning Injuries	23.1
	2. Suicide	13.3	2. Opioid Injuries	18.9
	3. Suffocation	7.8	3. Suicide	10.5
	4. Opioid Injuries	6.7	4. Heart Disease	7.5
	5. Heart Disease	5.6	5. Motor Vehicle Related Injuries	6.2

Data Source: Uniform Hospital Discharge Data System Massachusetts Division of Health Care Finance and Policy, MDPH (MassCHIP).

The source file is maintained as a zip code based file; 3 year average estimates 2010-2012

Notes: Please note that within some groupings/classifications may overlap and be counted more than once within the rankings

Related includes secondary and primary diagnoses

*Excluded childbirth, pregnancy, puerperium in Causes of Hospitalization ranking

Mental disorders are not detailed individually via MassCHIP

Chronic Obstructive Pulmonary Diseases (COPD) include: Bronchitis (chronic and acute); Emphysema; Asthma; Bronchiectasis; Axtrinsic allergic alveolitis and Pneumonitis

Digestive System Diseases: Diseases of oral cavity, salivary glands, jaw, esophagus, stomach, appendix, intestines, liver, gallbladder, pancreas

All poisoning injuries include: Unintentional and intentional poisoning by self or other from chemicals or noxious substances, including prescription or recreational drugs, alcohol, solvents, vapours, gases, pesticides, and biological substances.

Suffocation includes: Unintentional and intentional strangulation or obstructed airway by self or other from food or other object; accidental mechanical suffocation.

Injuries: Opioid includes: Non-fatal Opioid-related associated with Opioid abuse, dependence and/or poisoning (overdose)

Heart Disease includes: Coronary heart disease, heart failure, ischemic heart disease, major cardiovascular disease, and acute myocardial infarction (NOT hypertension, atherosclerosis, and cerebrovascular disease)

Hospitalizations and Deaths

- Age-specific rates for both hospitalizations and deaths in this life stage are consistently lower than the state rates, as seen in Tables 1 and 2.
- Between 2010 and 2012, there were 12 suicides among young adults (25-39), the most of any adult life stage. In addition, there were 7 suffocations, some of which may have been suicides.
- Additionally, poisoning injuries and opioid injuries may also overlap due to reporting standards (UHDDS).



Disability

Age specific data on disability in young adults was not readily available. Data from 2012 indicated that compared to 19.8% of nondisabled adults over 18, 64.1% of Somerville disabled adults were not employed in the labor force (Somerville Housing Needs Assessment). Programs such as Massachusetts Disability Commission, located in Somerville, can provide work accommodations or training for a range of disabilities. In general, disability intersects strongly with other social determinants such as poverty, housing and employment. In Somerville, one-quarter of all disabled adults are living in poverty. Public housing units for those with disabilities are included in elderly housing but there are waiting lists of many years for the 95 designated units.

Education

In this mecca of higher education, young adulthood is often a time of continued education for career advancement or personal and professional development. The wealth of colleges and universities brings many students to Somerville and also supports the educational aspirations of long-time residents. Higher levels of education have health impacts through higher income and usually safer working conditions. Increased

income helps meet needs for housing, childcare, food and other costs of urban living. As of 2015, the U.S. census data educational attainment rates for 25-34 year olds in Somerville was estimated at 95.9% with high school diploma or higher and 78.4% with Bachelor's degree or higher. This last figure, having a college degree, is much higher than the national average of 40%, a fact that is quickly distinguishing this age group from older generations, especially here in Somerville (American Community Survey).

Despite the fact that Somerville has a highly educated workforce age population, an equally large low income population also exists whose day-to-day struggles often go unrecognized. These may be single-parent households, families without high school or college degrees, those re-entering from the criminal justice system, or immigrants coping with language skills gaps. Many immigrants arrive in the city, as reported by service organizations, with higher education and professional credentials that are not recognized in the U.S., leading to limited earning potential and barriers to accessing resources even if one has English language proficiency. More formal education can be a protective factor, promoting and supporting healthier life choices and better health outcomes, though systemic barriers may prevent some from achieving the higher incomes typically associated with higher education levels. Nationally, there are links between parent's education levels and the health of their children, which start to be increasingly important in this life stage.

Economic Stability

This cohort came of age, or was just starting to get established in adulthood, during the Great Recession (2007-2009), which caused economic upheaval impacting jobs, housing and life plans for many. The recession also spawned the Occupy movement, which strived to bring attention to the growth in wealth disparity nationally and the policies behind the resulting gaps in prosperity. Locally, Somerville residents are increasingly burdened by high housing costs and stagnant wages. Only 16% of the residents in Somerville are able to find work within the city (Somerville Department of Economic Development), which may lead to longer commutes and precious time away from families and other quality of life activities. Another factor for this age group is student debt, which has been on a steady rise nationally for more than a decade and strongly impacts this group who have higher rates of college degrees than older adult stages. For some, this economic factor is behind delayed ages in marriage, having children and home ownership.

Poverty

This information is similar to that found in the Early Adult chapter and more detail can be found in the Demographics chapter. Poverty (LC-10) and income distribution have seen ongoing change in Somerville over the past decade. U.S. data from 2010-2015 for Somerville indicates an overall poverty rate of 14.7%. For context, in 2017 the U.S. poverty threshold was \$24,600 for a family of four, the minimum income that the Census Bureau considers necessary to meet basic needs, and is adjusted for family size to determine poverty rate.

- The rate of total individuals living at or below the poverty rate remained stable at 14.7% from 2010-2015, while rates for children, seniors and families with children all saw a slight rise (American Community Survey).
- 17.0% of Somerville families with children under 18 years were living in poverty, a 4.4% increase since 2010.

- 43.2% of Somerville female-headed families with children and with no husband present were living in poverty, a 2.6% increase since 2010, consistently higher than the state rate.
- Of the population in the city over 25, 22.5% of those living in poverty have less than a high school education.
- 11.8% of individuals identifying as “White alone” were living in poverty, compared to 19% of Asians, 26% of Hispanics/Latinos, and 36.6% of African Americans, based on data available through 2015.

The official poverty rate is not adjusted for geographic variation; hence it is not reflective of the income needed to meet basic needs in areas with higher costs of living like New England. For instance, the Living Wage Calculator developed at MIT indicates that a single adult would need a minimum income of \$27,040 and two working adults with two children in the Greater Boston area would need to be earning \$71,843 to meet basic needs in the area (Living Wage Calculator).

Homelessness

Somerville has a small unsheltered homeless (LC-07A) population, with several shelters serving adult men and women of all ages, families, victims of domestic violence and veterans. There is a wet shelter near Central Square that serves Somerville residents actively dealing with substance use. Some young adults “couch surf,” moving from friend to friend to keep a roof over their heads and falling into the unstable housing category if not technically homeless. Per federal and state laws such the McKinney-Vento Act, families with children in the Somerville schools who become homeless are provided with transportation from sheltered housing locations to allow the children to continue schooling in the city until the family gains permanent housing, typically not in Somerville.



For this age cohort, as for others, preventing homelessness for individuals and families is critical. The annual Save Our Homes walk raises unrestricted funds that can help prevent homelessness by providing funds to cover back rent, security deposits and/or moving costs. This event is organized by the Somerville Affordable Housing Organizing Committee (AHOC), an advocacy coalition comprised of Somerville residents and community organizations including Somerville Community Corporation (SCC), Community Action Agency of Somerville (CAAS), Cambridge and Somerville Legal Services (CSLS), and Somerville Homeless Coalition (SHC). First organized in 2001 by SCC, AHOC continues to pursue the vital mission of preserving affordable housing, increasing affordable housing opportunities and stabilizing Somerville's existing communities.

Affordable Housing/Housing Stability

In Somerville, the housing supply available on the open market is very limited for low and middle income households, for either ownership or renting. There was a steep increase in rents and home sale prices between 2012 and 2015; the limited supply keeps prices high. The sale prices for median single-family homes increased by 30.5% between 2012 and 2015; in the same period, the prices of condominiums rose by 35.7%, according to a Warren Group report from 2015. New luxury apartments were built

In Somerville, the housing supply available on the open market is very limited for low and middle-income households, for either ownership or renting. The average market rate rent in 2015 was \$2,567 for a two-bedroom apartment, which would require a household income of around \$90,000 to keep the housing expenses within the recommended 30-40% of total income.

at Assembly Row and Maxwell's Green with an average monthly rent of \$3,533; higher than many residents can afford and requiring a 6-figure income. The average market rate rent in 2015 was \$2,567 for a two-bedroom apartment, which would require a household income of around \$90,000 to keep the housing expenses within the recommended 30-40% of total income.

Between 1992 and 2014, the Somerville Community Corporation focused on increasing affordable rental units, adding 181 in Somerville. The demand far exceeds the supply, with 2,200 on the waiting list, with over 40% waiting for a 3-bedroom unit to become available (Somerville Housing Needs Assessment).

Some City programs seek to help with these high costs, such as the Prevention and Stabilization Services (PASS) Program and Tenancy Stabilization Program which offer financial support to tenants, with high demand and limited funds for both programs. The PASS program provides financial assistance for rent for up to two years for income eligible households at or below 80% area median income (AMI) with ongoing case management for the households. The household must also demonstrate capacity to become financially self-sufficient. The Tenancy Stabilization Program provides one-time assistance of up to

\$3,000, in addition to case management, for households at or below 80% AMI, for costs such as first or last month's rent, security deposits, moving costs, broker's fees (in limited cases) and rental and utility arrearages.

Employment and Living Wage Jobs

One of the biggest changes in employment over the past 40 years is the shift in women into the paid workforce. In 1975, 43% of women in the U.S. 25-34 age bracket took time out of their work careers to stay home and raise a family. More recently, that figure has dropped to 14% (The American Family Today, 2015). Parental leave varies, depending on the type of work parents do. The challenges associated with finding affordable quality childcare and the time juggling to meet new demands are often cited as adding extra layers of pressure on young families.

National research indicates 25% of mothers and 13% of fathers who took parental leave in the past two years reported it having a negative impact on their career. This parental need disproportionately impacts low income individuals, with only 22% of those making under \$30,000 reportedly having access to paid leave compared to 58% of individuals making more than \$75,000 (Shareable facts, 2017).

Locally, there has been concern over job displacement, particularly for low income Somerville residents, according to the Somerville Community Corporation. While there has been development in Assembly Square, additional policies are needed to support local community members and efforts to gain living wage jobs. Jobs for Somerville has also pressed for a jobs linkage fee to provide funding for job training, and fought to include local hiring and living wage jobs in a community benefits agreement in Union Square. In 2012, Mayor Curtatone appointed the Somerville Jobs Advisory Committee (SJAC) to conduct an assessment of the workforce development system in Somerville. The SJAC recommended a "robust, sustainable workforce development funding system." The committee also recommended a jobs linkage fee and a line item in the City budget. The linkage fee did get approved, to be implemented in 2017, yet it will still require additional future funding to fully implement the job training and support programs needed to help

residents earn enough money to remain in the city.

The range of employment opportunities in the city also includes the reality of day laborers, who show up at Foss Park in Winter Hill hoping for manual labor for the day. These workers, mostly immigrants with limited English Language skills, are vulnerable to wage theft and unsafe working conditions and potential for injury.

Food Security

Massachusetts data on pregnant mothers indicates that statewide, 33.8% received WIC supports during their pregnancy. Of those, 72.5% were Hispanic, 61.9% Black, 24.9% Asian and 18.9% White. (MA DPH, MA Births 2015) In Somerville, 1,834 residents utilized WIC benefits in 2017 (Cambridge Health Alliance).

The USDA survey on food security includes questions on whether parents or adults in the family ever skip meals to make sure children have enough to eat. A 2016 study by the Trussell Trust foodbank system (2017) in England on hunger during school holidays revealed that 1 out of 5 parents between the ages of 25 and 34 were likely to be worried about their children being able to eat during school holidays and would skip meals themselves so their children could eat.



Natural and Built Environment

Housing (safe, affordable and accessible)

Somerville has become a mecca for young adults who thrive on the dynamic community offerings and proximity to higher education and jobs. The safety of the community is another draw for many, as the city offers the diversity of urban living with a low crime rate.

Affordability is the most challenging aspect of housing for many young adults, especially those wanting to start a family. For those who may already have young children and those with low-paying work, choices about staying in Somerville may involve compromises in terms of available space or housing quality. In the current political environment, low income renters who may also have issues with immigration status are particularly vulnerable to threats to their housing safety and even tenancy by unscrupulous landlords who may delay needed repairs or correction of conditions related to rodent or insect infestations.

Safe and Secure Neighborhoods

The overall crime rates in Somerville are 20% lower than the U.S. rates, based on 2015 data, at 22.85 per 1,000 residents. The violent crime rate (murder, rape, assault), is lower than the MA crime rate, while the property crime rate (burglary, theft, auto theft) is higher than the state level (FBI, Uniform Crime Reporting Program and Somerville Police).

Transportation

Somerville ranks high in terms of being a walkable city, as well as bike friendly and with good—and expanding—public transit options. Somerville's Walk Score of 86/100 is the second highest in the state. In 2013, it made the nation's Top 10 list. The Transit Score is 62. These are measures of the walkability of an address or the access to public transit (Walk Score).

Somerville was on par with Everett and Medford in terms of people working outside their place of residence in 2012, higher than the Boston or MA rates at 80%, though the mean travel time to work is almost

equal to both the MA and U.S. rates. Somerville commuters are almost three times as likely to use public transportation to commute and more than twice as likely to walk or bike as the state rate and notably less likely to drive alone than the Massachusetts or U.S. average (City of Somerville Data Farm, Work).

Environmental Health

The City began to develop a Climate Change Plan in 2015, which in 2017 manifested as the Somerville Climate Forward initiative with a vision of the city as a “thriving, equitable, carbon neutral, and resilient city that is preparing for climate change while doing its share to prevent it.” Part of the work emphasizes the need to be alert to health impacts and the impacts on vulnerable populations (age, income, education and language isolation.) This effort also brings an equity lens to emergency preparedness in the city.

Air quality is an environmental issue that can have serious health implications. Associated with elevated risk of asthma, heart conditions and obesity, the cumulative effects of poor air quality can negatively alter one's quality of life. Health data from this life stage shows that this topic deserves attention in the Somerville community. Those living near the highways in Somerville are at the highest risk of exposure to poor air quality. Recent studies have shown that ultrafine particles emitted from traffic are associated with respiratory infections, lung cancer, heart attacks, stroke and chronic obstructive pulmonary disease (Brugge et al., 2007). These particles can be elevated locally and are rapidly changing and isolated near high traffic areas.

Studies have found that these ultrafine particles are highest when there is high traffic, when there is no wind and when it is cold outside. There have been local efforts to support the health of individuals living in areas near the highways by attempting to install air filtration systems in homes next to interstate 93. While lower levels of ultrafine particles were found, the units are very expensive and are likely not a permanent solution. Other efforts include a zoning ordinance that mandates construction companies working in high risk zones demonstrate that

ultrafine particles are 80% lower on the inside of the building than the outside. Political advocacy is underway for sound barriers to be added along the highway where it cuts through the city, providing some additional mitigation.

Access to Nature and Open Space

Approximately 158 acres of the city (6% of all land) is considered open space and given Somerville's population density (43 persons per acre), these spaces are well used by residents of all ages. Young adults are discovering the playing fields for sports and activity leagues and the plazas for community events that celebrate the arts, culture or local food. Boating is available in Somerville at Blessing of the Bay boathouse—with both rowing programs and canoe and kayak rentals. As of 2017, planning is in process to increase the amenities along this area of the Mystic River, which is linked to Assembly Row by a pedestrian underpass at McGrath Highway/Route 28.

Somerville residents love their dogs, who like to get outside and play as well. There were 1,732 licensed dogs in Somerville, as of 2017, with four dedicated dog parks. Close proximity to the Middlesex Fells, with over 2,500 acres of recreational space is a boon for dog owners with cars, but also for bikers, walkers and nature lovers.



Social and Community Context

This cohort includes millennials who came of age in the post 9/11 era, the proliferation of social media and the online shopping explosion, the Great Recession, global warming and shifting work schedules that challenged the 9-5 employee mode of earlier generations. They also grew up in a more racially and ethnically diverse culture, though policies and politics have been slow to reflect this shift.

Young adult veterans may have been part of wars in Iraq or Afghanistan, with 11.4% of Somerville veterans under the age of 35. They are usually mid-career or late career service members reintegrated back into the civilian sector, but may face challenges with employment, housing and healthcare. Community or workplace interventions can support veterans and their families dealing with stressors at work and home, as well as prevent and reduce negative mental health effects associated with reintegration, unemployment and job-seeking stressors and housing challenges.

Historically, Somerville has been a welcoming city for immigrants, serving as a gateway community for new arrivals from around the world who settled and made this their home. Recent national policy changes in immigration policy have highlighted the sanctuary status that communities such as Somerville strive to offer to all residents, regardless of immigration status. In the wake of changing policies in early 2017, the City and community leaders responded on multiple fronts.

A rally at City Hall in February 2017 drew over 4,000 people in demonstration of messages of solidarity for "One Somerville" that welcomes all. The Somerville School Committee passed a resolution confirming their commitment to providing a safe learning environment for all students. Numerous groups arose at the community level, including a multi-sector city, school and community steering committee that helped to coordinate Know Your Rights workshops and other supports.

From a public health perspective, addressing perceived safety and related threats and providing knowledge and resources in a supportive environment can reduce negative risk factors for mental health. Local efforts have strived to support caregivers and front-line service providers, facing an increase of families and individuals in need.

With recent demographic shifts, there could be a rise in experiences of segregation across class and economic lines, as well as cultural lines. Some issues, such as substance use, are more prevalent in the young adult White working-class population. This includes the cohort who were at Somerville High School during high incidence of overdoses and suicides in the early 2000's. One hears references to "old" and "new" Somervilians, creating both opportunities and challenges for bridging connections between long-time residents and recent arrivals.

Race

The Economic Policy Institute reports that by 2043, People of Color will constitute the majority of the working-class population in the United States (Wilson, 2016). This demographic shift suggests that by 2043, 61% of the population under the age of 18 will be People of Color, while 65% of those over 65 will be non-Hispanic White. This population trend, and the social changes it brings, could be tied to racial discord seen in the U.S. in recent years.

Nationally, 55% of Blacks with a four-year college degree report that their race has made it harder for them to succeed in life. (On Views of Race and Inequality, Pew, 2016). National data also shows that 47% of Blacks report someone acting suspicious of them in the past twelve months due to their race or ethnicity and that 45% say that people have treated them like they were less intelligent in the same timeframe (On Views of Race and Inequality, Pew, 2016). This unfair treatment comes in many forms, can be seen both overtly and subtly, and is indicative of a range of manifestations of racism, from interpersonal to structural.

Over the past generation, there has been a significant change in the age at which people get married. According to trends in the U.S. census reporting, 80% of people were married by the age of 30 in 1975. Currently, the national statistic has shifted to 80% being married by the age of 45 (Vespa, 2017). This delay in marriage impacts the social networks and available social supports that can serve as positive forces for health—both physical and mental—throughout the lifespan.

National level data from the 2015 American Community Survey indicates disparities in educational achievement by race. Whites have the highest level of reporting a Bachelor's degree or higher (59%), compared to Blacks (37%) and Hispanics/Latinos (31%). American Community Survey data from 2015 also shows links between educational level and poverty rates. Of people reporting less than a high school degree, 23% were living in poverty, compared to 7% of those with a Bachelor's degree or higher (American Community Survey).

Social Inclusion

Overturning a long time exclusion, Massachusetts was one of the earliest states to legalize same-sex marriages in 2004, and Somerville was an early adopter with a very supportive City Clerk's office helping to facilitate multiple same-sex weddings. This culture of inclusion may help account for Somerville having the 6th highest percentage of households with same-sex partners in the country, at 2% (City of Somerville Data Farm, Raise a Family).

Social Safety Network/Social Support

Over the past generation, there has been a significant change in the age at which people get married. According to trends in the U.S. census reporting, 80% of people were married by the age of 30 in 1975. Currently, the national statistic has shifted to 80% being married by the age of 45 (Vespa, 2017). This delay in marriage impacts the social networks and available social supports that can serve as positive forces for health—both physical and mental—throughout the lifespan. Defining social structures during this life stage can be crucial and used to build relationships, family, employment opportunities and social and civic engagement. Young adults are solidifying lifestyles that will carry them through the lifespan, often creating a “chosen family” to provide critical social supports in the absence of relatives or traditional family structures.

Social Media

This age group has always been part of the digital world, including video games, MTV, email and the advent of Facebook and other social media platforms. Communication is a far cry from the days of waiting for a letter or phone call, with texting updating earlier instant messaging options. News comes from online social media, versus print media. Even television has been overhauled, with automatic DVD taping and on demand movies. Online communications can conjure up everything from finding a nearby farmers market, matching up with a date, taking a car share ride to a “meet-up” event, to tracking one’s fitness regime.

Violence (Domestic Violence, Sexual Abuse)

There is limited available data specific to this age group. In 2016, there were 198 Domestic Assaults recorded in Somerville for all ages. Also in 2016, 87.4% of arrests were people in the 21 to 60 range (Somerville Police). In terms of the state’s incarceration rates, the average male in Massachusetts Department of Corrections custody was 41 years old; the female average age was 37 (MA Department of Corrections).

Community and Civic Engagement

Young Adults account for 40% of the registered voters in Somerville (censusviewer.com). There are many factors that affect voting decisions including party affiliation, values, education level, religion and economic status. In the 2016 presidential election, Somerville had 54,360 registered voters with 40,874 votes cast. Of the ballots cast, 82.55% were for the Democratic candidate, 10.1 % for the Republican candidate, and 7.35% were for other party candidates, write-in candidates or left blank. Somerville, like much of the country, saw an increase in voter participation during the 2016 elections, with every ward in the City having an increased number of voters. When comparing the voter participation in 2016 to 2012, the last Presidential election, Ward 1, East Somerville, had the largest increase (27.2%), followed by Wards 5 (19.37%) and 4 (17.28%).

Engaging in community issues is closely linked with social media for this age group, who learn about opportunities primarily online. Cities like Somerville are seeing this age group showing up at planning forums and festivals, and as volunteers for causes they support.

Efforts by the City to provide opportunities for social interaction across a range of sectors of the population include a robust arts and culture calendar with events and celebrations throughout the year offered by the Somerville Arts Council. Between these offerings and a broad variety of activities offered by organizations such as Arts at the Armory, there is plenty to entice residents to come out to meet their neighbors through shared experiences. Special attention is given to providing access to learning opportunities for the parents of Somerville’s children, who include a large number of families striving to raise their families here despite language barriers, economic disparities and uncertainty about immigration status and safety.

Recommendations for Young Adult

Ages 25–39

■ Increase access to health promoting resources

- Offer English language learner classes with a focus on health literacy and advocacy, including self-care
- Improve access to homeless prevention and housing supports
- Expand community flu and health education clinics (including sexual health) targeting this population
- Explore worksite health partnerships to support health education, family inclusive policies and access to worksite wellness

■ Facilitate a community with strong social networks and support systems

- Increase in-person social networking and supportive relationship building opportunities
- Improve capacity of existing neighborhood associations to support an engaged community and connect to the active political scene
- Leverage parents' engagement in the school system to increase connectivity and investment with the broader community
- Increase opportunities for returning veterans to re-engage in social networks
- Connect social network opportunities to other health determinants such as access to healthy foods and physical activity
- For families with young children, expand programs to support parent networking opportunities
- Expand continuing education and learning opportunities to reduce employment gaps
- Engage single mothers and their children in exploring social connections/networks to promote family health and wellbeing

■ Create lifelong habits to promote mental health

- Share research with broader community on how supportive relationships serve as a protective factor, encouraging the value of making and retaining a circle of friends
- Identify service providers with capacity to serve various community needs including language, culture and orientation.

■ Support increased physical activity and healthy eating opportunities

- Engage this age group in planning and advocacy for improved equity and infrastructure that supports active transportation, physical activity and healthy eating for all
- Support training for small grocers and corner stores on stocking fresh fruits and vegetables
- Create workplace environments conducive to breastfeeding



Middle Adult

Introduction

The middle adult period, for the purposes of this report, is defined as 40–64 years of age. Middle adulthood can be a time when a person re-examines their life, evaluating their accomplishments and the legacy they have established. This is also often a time of outward focus such as caring for others, including children, grandchildren, aging parents and friends who may need extra support. Sometimes referred to as the “sandwich generation,” this age group’s responsibilities can cause stress, as middle adults strive to balance work, family and self-care. Middle adulthood is a time of adjusting relationships due to shifts in familial, work and community roles. Perspectives and outlook on one’s own life often shifts as well through an increased understanding of one’s capabilities and life purpose. Resilient social support networks are important for health, perhaps even more so as this population ages and transitions to later adulthood.

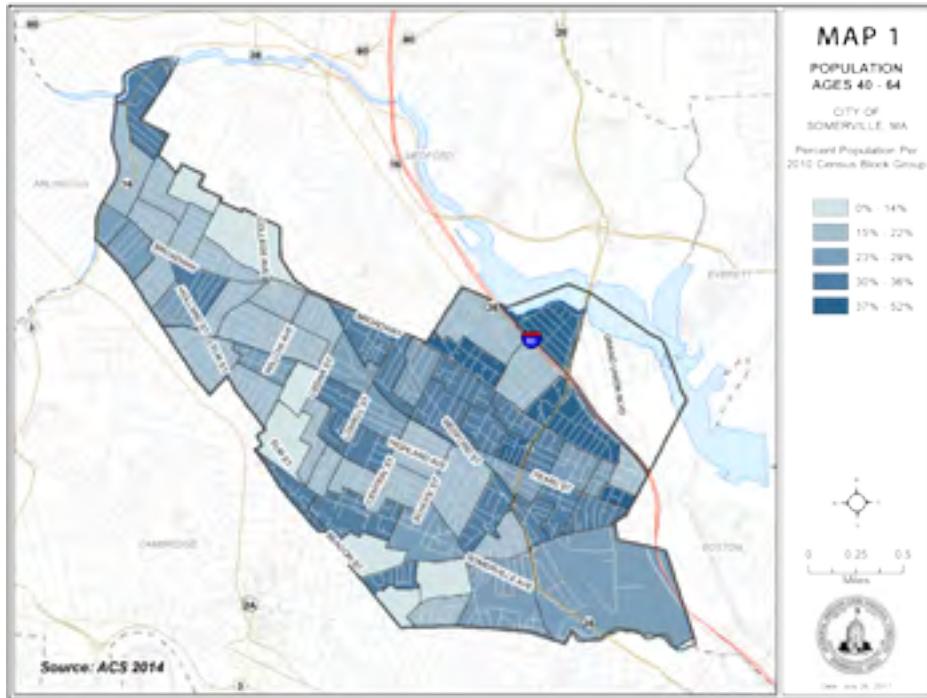
While many physical changes are gradual, some become obvious in this stage and may lead to chronic health issues that can add to stress. Physically, the body experiences natural aging changes which may impact

vision, hearing, skin, weight, strength and sexual health. For women, the end of child-bearing years and menopause most frequently occurs during this time period, though some women are just becoming mothers in their forties. As people move through this life stage, they may become more sensitive to diet, substance use, environmental exposures, stress and needs for rest. Maintaining healthy habits as well as identifying and addressing unhealthy habits, can set the stage for healthier and more productive older years and serve as a positive model for children and grandchildren.

Health problems can turn into a life altering issue or sometimes trigger positive life choices such as increased exercise or healthier diets. There can be increased threats from disability and chronic disease, with the data indicating there are health disparities among this population. People also become more conscious about their own mortality in this stage, in response to the deaths of parents or friends. Because of society’s emphasis on youthfulness and physical appearances, middle-aged men and women may suffer from diminished self-esteem or may start to experience age bias in the workplace. For those in manual labor or desk jobs, injuries can become more frequent as the cumulative impact of repetitive motion wears on the musculoskeletal system.

Middle adulthood is a time of adjusting relationships due to shifts in familial, work and community roles. This is also often a time of outward focus such as caring for others, including children, grandchildren, aging parents and friends who may need extra support.





Mental health is also a major factor in this age group. Stresses related to the Great Recession of 2007-2009 as well as recent shifts in immigration policy and increases in overt displays of intolerance and hate crimes may manifest in this group. This life stage is often synonymous with a period of high responsibility and high productivity, and can include planning ahead for when one is not able to continue work or elects to retire—a target which for many has been extended well beyond the historically traditional age of 62 out of financial necessity.

During this stage, middle adults are often fulfilling civic and social responsibilities. For some, time for leisure activities or one's own exercise opportunities shrink as the demands of parenthood, elder care, job security and civic roles may increase. During this stage, most individuals are established in a career and at their highest earning potential, providing at least a basic standard of living.

Demographics, age specific

Following the peak in population in the 25-34 years old range at 40.3% of the total population, the Somerville middle adult cohort decreases to less than the state average for 45-54 year olds (9.9% of the Somerville population) and 55-64 year olds (7.6% of the Somerville population), based on 2011-2015 national data estimates. Map 1, to the left, shows that the 45-64 age population is quite evenly distributed around the city.

Access to Healthcare

Health Insurance Coverage

Medical insurance coverage (LC-40) is important to support preventative care in the middle adult years when chronic conditions start to manifest more often. Health Insurance Coverage for this age group was 93.9%, lower than the state level at 96.1%, with 6.1% of Somerville residents in this age without coverage. Of those with health insurance coverage, 72% had private insurance and 26.3% public coverage (American Community Survey (ACS)).

Primary Care Provider

It is a national goal to increase the proportion of adults aged 18 to 64 years who have a specific source of ongoing care (SHS-5.3). At age 50, the recommendation for frequency of well-visits changes from every 1-3 years for younger adults, to annually. Fifty is also the age that triggers a number of preventative screenings such as colonoscopies, which have been proven to save lives. In 2015, CHA provided primary care to 6,490 Somerville residents age 41-65 years.

Immunizations

Recommended immunizations in this age include annual influenza, tetanus/diphtheria/pertussis (Tdap) every 10 years, shingles vaccine, and depending on age and health condition, the pneumococcal vaccine.

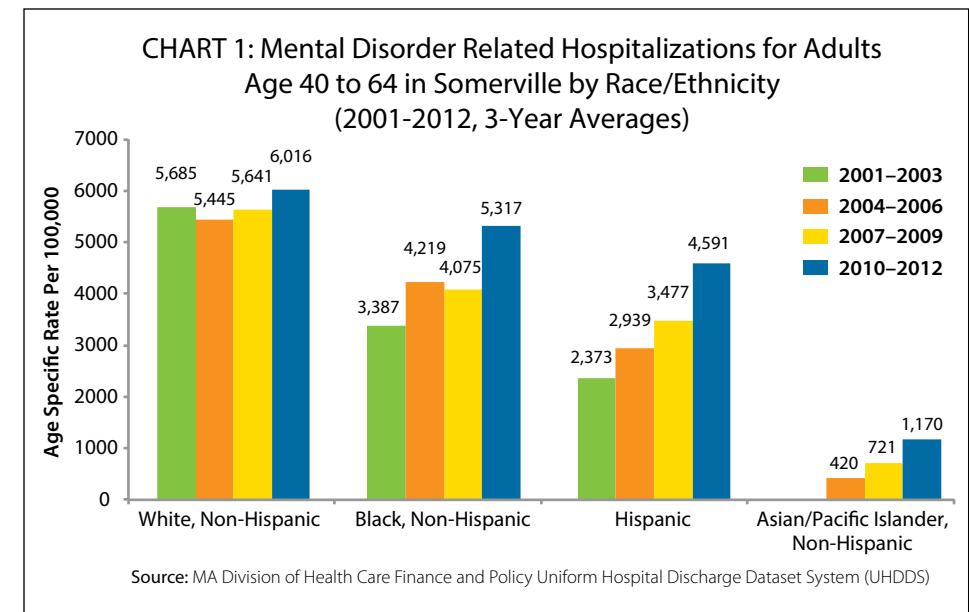
Oral Health

Somerville's drinking water, provided by the Metropolitan Water Resource Authority, is treated with fluoride, one of the protective factors for dental health (LC-05). Even for those with regular dental check-ups, dental care may be needed during this period as old fillings wear out, triggering more expensive procedures such as crowns or root canals. MassHealth coverage for dental care has varied significantly, from basic care to only providing emergency coverage for extractions, impacting oral health for low income residents.

Behavioral Health & Mental Health

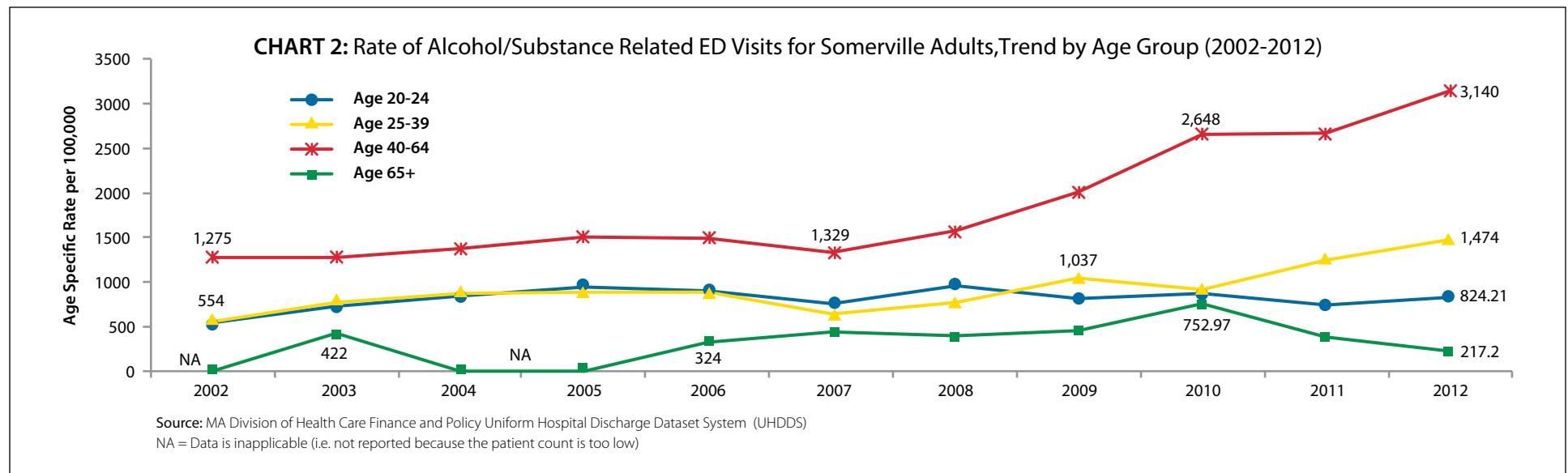
Mental health among adults (LC-43) is a global public health issue. Locally, mental health disorders are the third highest cause of hospitalizations among middle adult Somerville residents (MA Uniform Hospital Discharge Data Set (UHDDS)). Adults can also be dealing with the residual impacts of trauma in their earlier lives, which can increase their risk for negative health outcomes manifesting as they age.

Individuals in this life stage face a variety of stressors that can influence their mental wellbeing. This can include financial responsibilities, lack of social supports, changes in physical health and wellbeing and limited resources available to support mental health. There can also be many barriers to accessing appropriate mental health services for this age group including availability of providers (especially with language or cultural capacity), financial costs and challenges navigating the existing service systems.



- According to data shown in Chart 1, the rate of mental health disorder related hospitalizations increased for all races among Somerville adults ages 40-64 between 2001 and 2012 (UHDDS).
- Among 40-64 year olds in Somerville, mental disorder related hospitalizations were 15% higher among males than females (UHDDS).

In August 2017, the journal Psychiatric Services in Advance published an article with results from a CHA "behavioral health home" pilot program that enhanced services to address health disparities among adults with serious mental illness (SMI). People who experience SMI generally have a shorter life expectancy than others without SMI, which research attributes to a higher prevalence of medical diseases driven by complex social, behavioral, psychological, and treatment quality factors. The CHA program tested the hypothesis that, for people with SMI who often have complex health needs with greater risks and total costs, providing a patient-centered "medical home" in a specialty mental health



setting could begin to advance the national agenda of achieving better quality of care, better health outcomes and lower healthcare costs.

Comparing outcomes before and after the “behavioral health home” intervention for 424 participants with schizophrenia-spectrum or bipolar disorders, members of the intervention group had significantly fewer psychiatric hospitalizations and emergency department visits and more diabetes screenings than the matched control group of 1,521 other CHA patients. The program introduced on-site medical care, health promotion services (e.g. smoking cessation, nutritional education, food preparation), and peer-to-peer engagement opportunities within the mental health clinic. It also involved creating new IT tools to monitor and manage patients’ needs, adding support for care coordination within and beyond CHA and changing clinical paradigms to focus more on whole health, preventive care, and population management. Addressing social determinants as well as ways to foster peer support and relationship development were identified as approaches that helped achieve the outcomes,

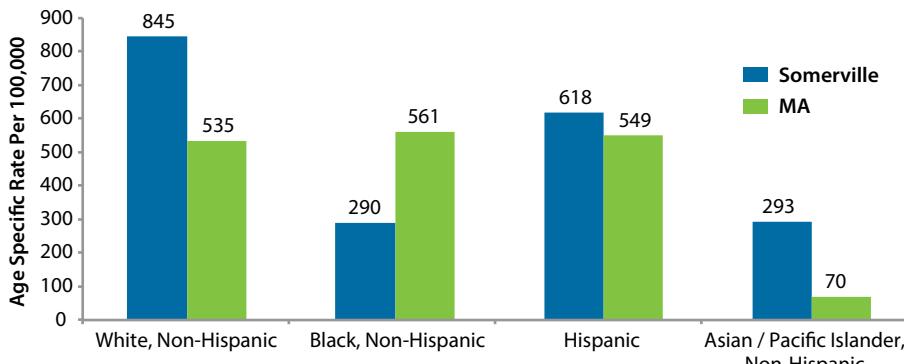
with potential impact for future innovations for serving this population (Tepper et al., 2017).

Substance Use Disorder/Addiction

Nationwide, substance use is a key public health topic, with New England experiencing high levels of overdoses and deaths due to opioids in recent years. In Somerville, deaths due to poisoning injuries and opioid injuries were the 2nd and 5th causes of death respectively for residents age 40-64 between 2010 and 2012 (UHDDS). The primary substances used among Massachusetts residents that lead to substance abuse treatment admissions in descending order include: heroin, alcohol, other, marijuana, cocaine and crack.

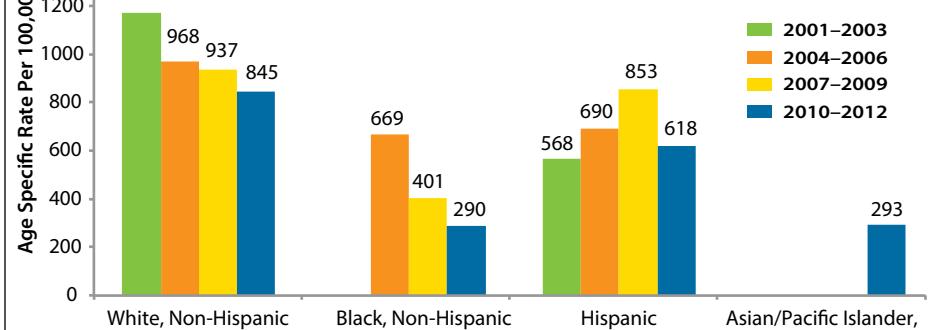
- According to the data portrayed in Chart 2, in 2012, adults 40 to 64 had the highest rate of alcohol/substance related emergency department visits, while adults age 25 to 39 had the second highest rate (UHDDS).

CHART 3: Alcohol/Substance Related Hospitalizations for Adults Age 40 to 64 by Race/Ethnicity (2010-2012, 3-Year Average)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)

CHART 4: Alcohol/Substance Related Hospitalizations for Adults Age 40 to 64 in Somerville by Race/Ethnicity (2001-2012, 3-Year Averages)

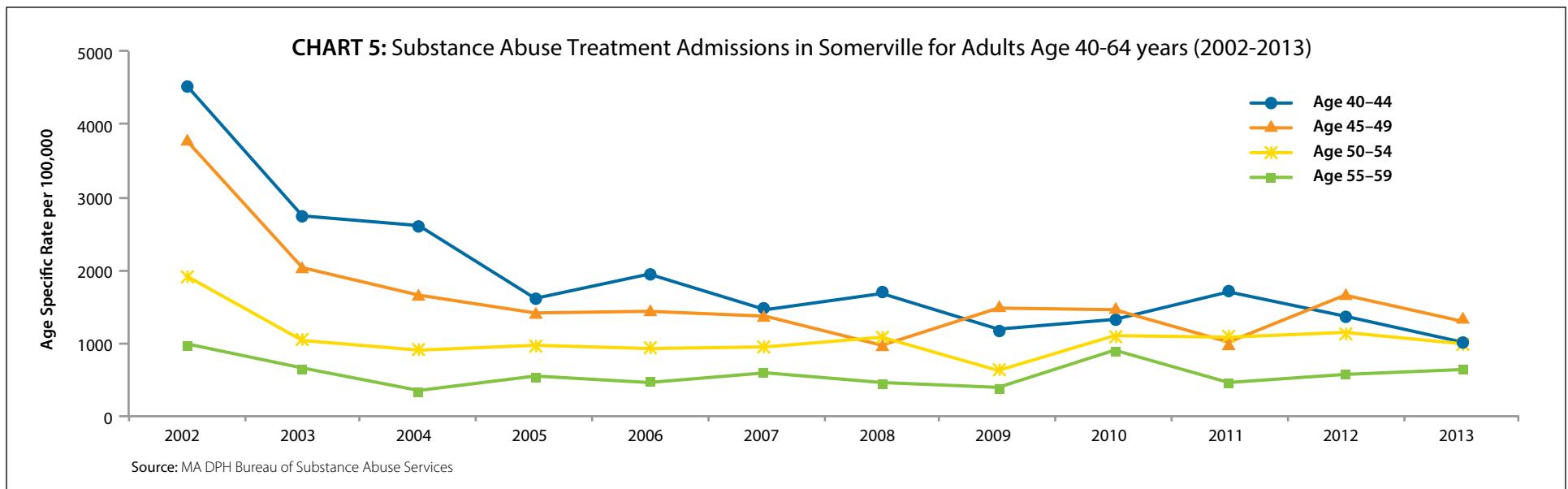


Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)
For 2001-2003, Black, non-Hispanic rate was NA
For 2004-2006, 2007-2009, Asian/Pacific Islander, non-Hispanic rates were not applicable

- According to Chart 3, Black, non-Hispanic Somerville residents age 40-64 had the lowest rate of alcohol/substance related hospitalization than any race in that age group, lower than the state 3-year average for 2010-2012.
- Whites, non-Hispanic had the highest rate of alcohol/substance related hospitalizations, which included opioids (UHDDS).
- Among Somerville's 40-64 year olds, alcohol/substance related hospitalization rates were higher among White, non-Hispanic, Hispanic/Latino and Asians compared to similar groups in Massachusetts
- According to the trend data in Chart 4, alcohol/substance related hospitalizations for adults ages 40-64 dropped between 2001 and 2012 for White and Black residents, but increased for Hispanic/Latino residents. Data for Asian/Pacific Islander, non-Hispanic was at non-reportable levels for the time period. (UHDDS).

Nationwide, substance use is a key public health topic, with New England experiencing high levels of overdoses and deaths due to opioids in recent years. The primary substances used among Massachusetts residents that lead to substance abuse treatment admissions in descending order include: heroin, alcohol, other, marijuana, cocaine and crack.

- Additionally, state data shows alcohol/substance related hospitalization rates for adults age 40-64 increased overall in MA between 2001 and 2012; however, in Somerville, related hospitalizations decreased by 26% in the same time.



- As seen in Chart 5, historically the subset of Somerville residents age 55-59 had the lowest rate of substance abuse treatment admissions among residents 40-59 in 2013. However, the rate for that group was the only one that did not decrease between 2012 and 2013. The youngest subsets of middle adults (40-44 year olds and 45-49 year olds) saw a dramatic drop in substance abuse treatment admissions rates between 2002 and 2005 and stayed relatively stable by comparison through 2013 (MA DPH Bureau of Substance Abuse Services).
- Since 2004, the rates of treatment admissions for substance abuse were highest in Whites, almost double the rates of Blacks or Hispanics.
- Additional data for treatment admissions by specific substances shows that substance abuse treatment admissions specifically for alcohol did not vary much by age in 2013, ranging from 571 admissions per 100,000 among 50-54 year olds to 472 admissions per 100,000 treatment admissions among 55-59 year olds.

- The same data for specific substance abuse treatment admissions shows that rates of substance abuse treatment admissions for alcohol were lower in Somerville than the state average for 40-54 year olds in 2013, but were on par with the Massachusetts average for 55-59 year olds.
- Conversely, substance abuse treatment admissions rates specifically for heroin in Somerville among residents age 50-54 were twice as high in 2012 than Massachusetts rates (408 per 100,000 in Somerville and 203 per 100,000 in Massachusetts).

Many of those who would benefit from substance use disorder treatment do not have insurance coverage or the financial means to be admitted to treatment facilities. Without some form of treatment, people dealing with substance use continue to be at risk for substance overdose or of wearing out family support systems. Increasingly, community based therapies have arisen to provide additional options, including group therapy and medication assisted therapies, as well as a growth in recovery coaches and support groups.

- As stated in previous life stages, in Somerville overall, the number of both non-fatal and fatal overdoses from narcotics rose sharply from 2010 to 2016, based on estimates from Police and Fire records, though some months may be missing (Somerville Fire and Police).
- Non-fatal overdoses for narcotics increased from 96 in 2010 to 191 in 2016. Fatal overdoses for narcotics rose from 3 in 2010 to 21 in 2016, with the sharpest increase starting in 2014. More recent 2017 data indicated these trends have shown decreases in Somerville and Middlesex County.
- For the first quarter of 2017, fatal opioid overdoses in Massachusetts decreased 9% compared to the same quarter in 2016. Additionally, rates for non-fatal overdoses in Somerville remained steady for the first six months of 2017. However, fatal overdoses (involving all substances) in Somerville declined 54%; of these, opioid involved fatalities declined 44%.

Tobacco

Smoking is a risk factor for diseases that tend to start showing up in this age group, such as cancer or strokes. Nicotine addiction is challenging to address, but if someone quits smoking in middle age, it can still have a positive impact on later health, decreasing risk levels. Smoking cessation programs such as Quitworks are being utilized increasingly to offer support and coaching for those trying to quit.



Gambling Addiction

A baseline study of adults in Massachusetts estimated that 7.5% are at-risk gamblers and 1.7% are problem gamblers. Life changes, such as job loss or retirement, are strong predictors of an increased level of activity for those with addictive gambling behavior. Gambling addiction is often unidentified, but has been associated with both mental health and substance use issues, as well as financial and social implications. With the 2019 opening of a local casino and more gambling venues in the state, there may be both need and opportunity for increased attention to this concern through organizations such as the Massachusetts Council on Compulsive Gambling helpline, trainings and services. Locally, CHA has an initiative, Readiness for Gambling Expansion (CHARGE), focused on treatment for gambling disorders and related conditions.

CHA Division on Addiction

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CHARGE: Cambridge Health Alliance Readiness for Gambling Expansion

Our Unique Approach Screening Day – March 14, 2017 Research & Capacity Building Tools & Resources Education Supporters & Stakeholders

Cambridge Health Alliance Readiness for Gambling Expansion (CHARGE) is an initiative developed by Cambridge Health, communities across Massachusetts and beyond through provider training, research activities, and research related to gambling disorders, addictive and other related mental health conditions.

To learn more about CHARGE's accomplishments, we invite you to engage using the hashtag #CHARGE or visit our website: [CHARGE.cambridge.org](http://charge.cambridge.org)

Physical Health

Obesity

Globally, the obesity rates have doubled in many countries, including the countries of origin for many Somerville immigrants. In Massachusetts, data from 2015 indicates that 29.9% of 45-64 year olds were obese, with higher rates among Blacks and Latinos as indicated in the Young Adult section (*The State of Obesity*). Data from CHA patients as of October 2016, indicated that rates of being overweight or obese in adults 18+ were lowest for Asian populations (especially East Asians at 31.7%) and highest for Central Americans at 80.7%, followed closely by Portuguese/Azorean, Latino-Caribbean, Haitians and African Americans.

Diabetes Mellitus

This is the top cause of hospitalizations for this life stage in Somerville. CHA patient data from 2015 for Somerville adults ages 40-59 indicated that more South Asian patients had better control outcomes of their diabetes (70%) and that North American-Europeans had the poorest level of control (55%). This indicator is measured by testing



for Hemoglobin A1C levels of <8%, which indicate blood sugar levels over time and control often includes a medication plan in addition to nutrition and exercise. It should be noted that these rates changed for patients over 60, with South Asians having the poorest levels of control, while higher percentages of Portuguese and Haitians (83.3% and 74.6% respectively) had better controls. Statewide, based on 2015 data, 8.9% of Massachusetts adults had diabetes, with the trend rising from 5% in the early 90s (*The State of Obesity*).

- Shown in chart 6 below, 3-year averages of hospitalization rates related to diabetes in Somerville were generally higher across White, non-Hispanics and Asians, as compared to the state rates for this age group (UHDDS).
- In Somerville and Massachusetts, Black, non-Hispanic rates are higher when compared with other race/ethnicity categories (UHDDS).
- In contrast, the rates of diabetes related emergency department visits for adults ages 40-64 were higher among Blacks and Hispanics in Somerville than the state rates.

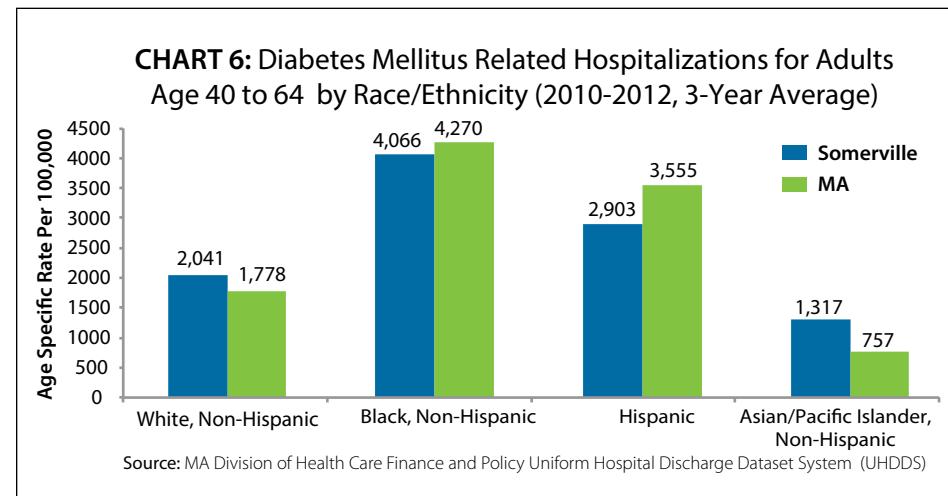
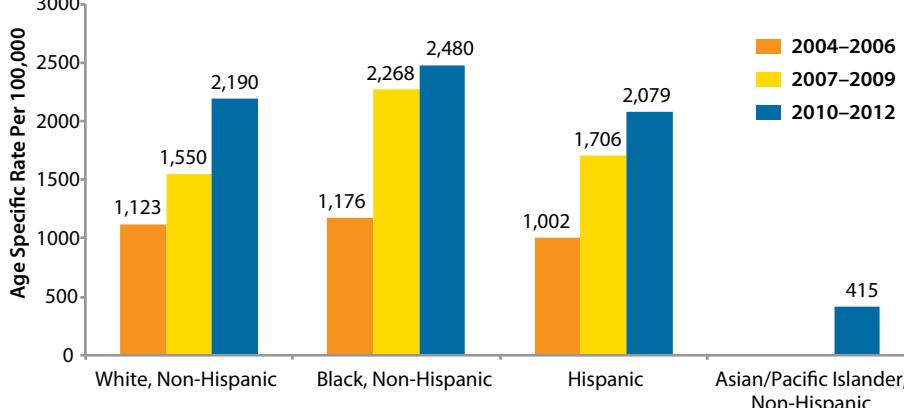


CHART 7: COPD Related ED Visits for Adults Age 40 to 64 Years in Somerville by Race/Ethnicity (2004-2012, 3-Year Averages)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS) For 2004-2006 and 2007-2009 Asian/Pacific Islander, non-Hispanic rates were not applicable

Respiratory Health

Chronic obstructive pulmonary disease (COPD) has been the second highest cause of hospitalizations in this age group.

- COPD related emergency department visit rates steadily rose for all races in Somerville between 2004 and 2012, as seen in Chart 7 (UHDDS).

Across multiple age groups, there is a trend of higher rates of emergency department visits for minorities for certain medical conditions, with proportionately lower rates of hospitalization compared to Whites. This data may serve as an indicator in inequities among certain groups in accessing preventative healthcare that can lessen the rate and severity of emergencies.

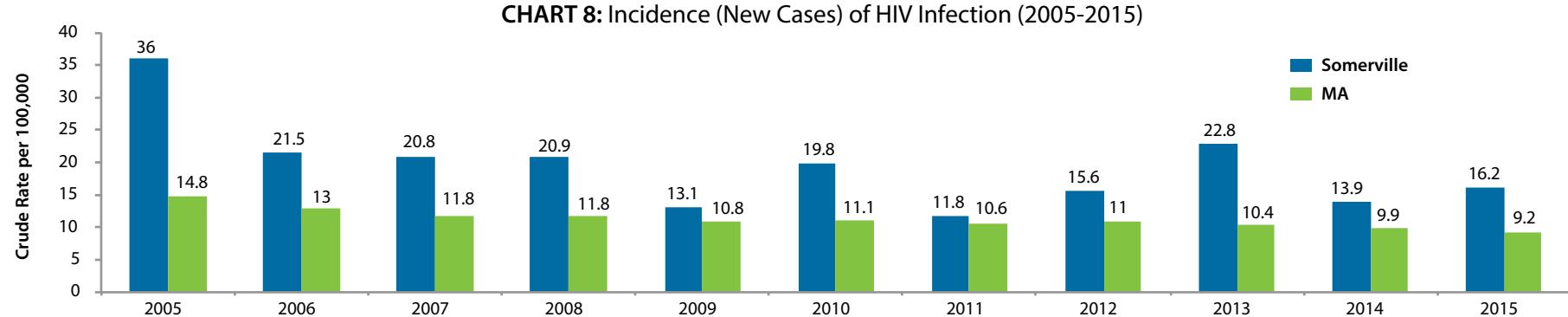
- Similar to many surrounding communities, the 3-year averages for hospitalization rates for COPD were highest for Whites followed by Blacks between 2010-2012. Rates of hospitalization for COPD among Somerville Whites and Asians were higher than the state average. However, rates for Hispanic/Latinos were dramatically lower, and rates for Blacks were lower compared to the state rates. (UHDDS).

Sexual and Reproductive Health

Some Somerville women, who delayed childbirth, are now having babies in their forties, which automatically places them in a higher pregnancy risk category. For most women, middle age will include menopause, with its changes in hormones. For both men and women, other health issues or medications can have an impact on one's sexual health and activity. Protection from sexually transmitted infections remains important in this life stage, especially with the rise of drug resistant gonorrhea.

Somerville residents in the middle adult group with HIV face additional health challenges, including more mental health and neurocognitive impairments than others in their age group. One U.S. study shows that 94% of people over 50 with HIV have at least one other chronic disease, with an average of three other conditions (Rourke, 2017).

The Cambridge Health Alliance addresses HIV infection among adults at the CHA Zinberg Clinic in Cambridge by providing primary care, counseling and testing services. Specific Haitian and Portuguese speakers' programs target equity in HIV care among CHA patients. The Zinberg clinic also offers testing and counseling for Hepatitis C, including offering resources and counseling sessions in multiple languages.



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)

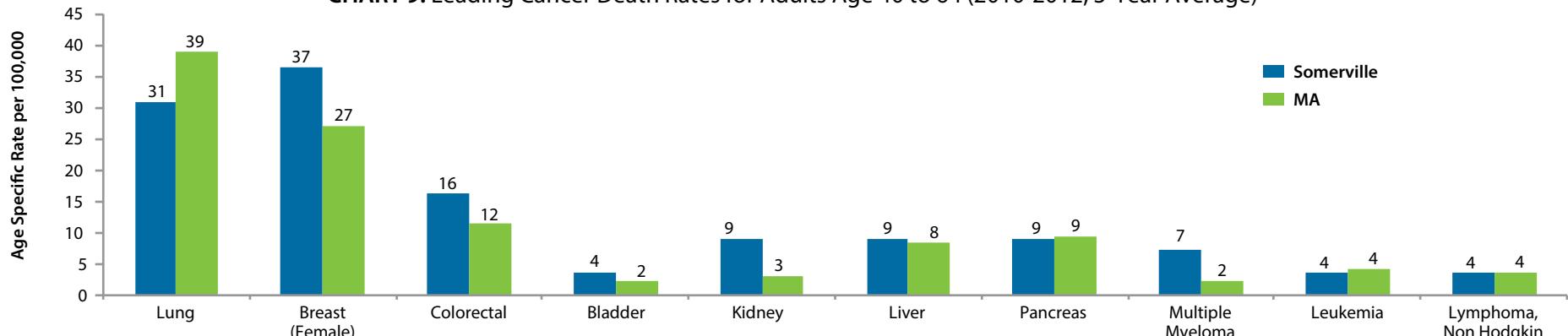
- According to chart 8, overall, there has been a decrease in the incidence rate of HIV infection in Somerville since 2005, from 36.06 per 100,000 people to 16.2 per 100,000, but it remains higher than the state rate. (UHDDS).
- According to data not shown in the chart, for the middle adult age group, 40-64, the incidence of HIV infection in 2015 was 109.43 per 100,000 (reflective of 15 new cases), a rate that is more than twice as high as Massachusetts overall (46.82 per 100,000) (MA DPH, Bureau of Infectious Disease and Laboratory Science, HIV Surveillance Program).
- The prevalence (total existing cases) of HIV infection among the middle adult age group in Somerville is 1,845.6 per 100,000, or 253 total cases.
- Residents 40-64 years of age account for over 66% of all Somerville HIV patients (UHDDS).
- The prevalence of HIV (among all Somerville age groups) is highest among White, non-Hispanic residents at 48% of all cases in 2015 (MA DPH, Bureau of Infectious Disease and Laboratory Science, HIV Surveillance Program).

Infectious disease

While HIV is often transmitted sexually, the infection can be spread through any bodily fluids, and exposure to the blood of an HIV infected person can also put a person at risk for HIV. One common behavior that increases the likelihood of transmission through blood is sharing needles, most common among those who inject drugs. In addition to risking the spread of HIV, those who share needles are at risk of contracting Hepatitis C, another dangerous virus, which, when spread, is commonly linked to the opioid epidemic.

Among Somerville residents age 40-64, there were 20 cases of Hepatitis C between 2013-2015, 3-year averages. This comprised a third of the average number of Hepatitis C cases for all age groups (MA DPH, Bureau of Infectious Disease and Laboratory Science, Office of Integrated Surveillance and Information Systems).

CHART 9: Leading Cancer Death Rates for Adults Age 40 to 64 (2010-2012, 3-Year Average)



Source: MA DPH Registry of Vital Records

Cancer

The life course approach is particularly relevant to cancer development with its multiple risk factors accumulating over time. The aging process itself increases the risk of cancer, with the majority of diagnosis in people over 60 (National Cancer Institute). Middle adulthood may hold opportunities to reduce risk factors, such as smoking, poor diet and overexposure to sun.

- As seen above in Chart 9, the leading cause of cancer death for Somerville adults ages 40-64 in the years 2010-2012 was female breast cancer (MA DPH Registry of Vital Records).
- On further exploring breast cancer diagnosis rates for 2010-2012 (3-year average), White, Black and Hispanic women did not differ significantly (222.5, 221.6 and 213.7 per 100,000 cancer diagnoses, respectively.) Compared to the state breast cancer rates, incidence rates for Somerville were significantly higher (UHDDS).

- The second leading cause of cancer death in this age range, lung cancer, becomes the top leading cause of cancer death for the next older age group, 65+, according to Chart 10 in the older adult chapter (MA DPH Registry of Vital Records).
- As depicted in the Chart 9 above, deaths in the middle adult group due to the following cancers occurred at a higher rate in Somerville than at the state level: breast, colorectal, bladder, kidney and multiple myeloma (UHDDS).

The life course approach is particularly relevant to cancer development with its multiple risk factors accumulating over time. The aging process itself increases the risk of cancer (National Cancer Institute).

Middle Adult Top 5 Causes of Hospitalizations and Deaths

Top Causes of Hospitalizations (2010-2012)	Top 5 Causes Somerville*	Age-specific rates per 100,000	Top 5 Causes Massachusetts*	Age-specific rates per 100,000
Middle Adult (40–64 years) All Causes in Somerville: n= 5,864	1. Endocrine: Diabetes Mellitus Related	2333.4	1. Endocrine: Diabetes Mellitus Related	2059
	2. Respiratory: COPD, All (Related)	2020.3	2. Respiratory: COPD, All (Related)	1999.5
	3. Mental Disorders: All	1821.9	3. Circulatory System Diseases: All	1329.4
	4. Digestive System Diseases: All	1250.4	4. Digestive System Disease: All	1293.1
	5. Circulatory System Diseases: All	1241.3	5. Mental Disorders: All	1055

Top Causes of Death (2010-2012)	Top 5 Causes Somerville	Age-specific rates per 100,000	Top 5 Causes Massachusetts	Age-specific rates per 100,000
Middle Adult (40–64 years) All Causes in Somerville: n= 255	1. Heart Disease	69.2	1. Heart Disease	74.5
	2. All Poisoning Injuries	36.4	2. Lung Cancer	38.9
	3. Lung Cancer	30.9	3. All Poisoning Injuries	22.2
	4. Chronic Liver Disease	20	4. Chronic Liver Disease	15.0
	5. Opioid Injuries	20	5. Opioid Injuries	14.1

Data Source: Uniform Hospital Discharge Data System Massachusetts Division of Health Care Finance and Policy, MDPH (MassCHIP).

The source file is maintained as a zip code based file; 3 year average estimates 2010-2012

Notes: Please note that within some groupings/classifications may overlap and be counted more than once within the rankings

Related includes secondary and primary diagnoses

*Excluded childbirth, pregnancy, puerperium in Cause of Hospitalization ranking

Mental disorders are not detailed individually via MassCHIP

Chronic Obstructive Pulmonary Diseases (COPD) include: Bronchitis (chronic and acute); Emphysema; Asthma; Bronchiectasis; Axtrinsic allergic alveolitis and Pneumonitis

Circulatory System Diseases include: Rheumatic Fever; Rheumatic diseases of the heart and blood vessels (chronic and acute); Hypertensive diseases; Heart diseases; Cereobrvascular diseases; Diseases of blood vessels

Digestive System Diseases: Diseases of oral cavity, salivary glands, jaw, esophagus, stomach, appendix, intestines, liver, gallbladder, pancreas

All poisoning injuries include: Unintentional and intentional poisoning by self or other from chemicals or noxious substances, including prescription or recreational drugs, alcohol, solvents, vapours, gases, pesticides, and biological substances.

Injuries: Opioid includes: Non-fatal Opioid-related associated with Opioid abuse, dependence and/or poisoning (overdose)

Heart Disease includes: Coronary heart disease, heart failure, ischemic heart disease, major cardiovascular disease, and acute myocardial infarction (NOT hypertension, atherosclerosis, and cerebrovascular disease)

Hospitalizations and Deaths

- As seen in Table 1, the rates of hospitalization for many of the top 5 causes in Somerville were similar to the Massachusetts rates from 2010-2012, including Endocrine/Diabetes Mellitus Related, Respiratory and Digestive System Diseases, but higher for mental health (UHDDS).
- As shown in Table 2, Heart Disease was the top cause of death for middle adults in Somerville and Massachusetts overall between 2010 and 2012, and Poisoning Injuries, Lung Cancer, Chronic liver Disease and Opioid Injuries rounded out the top 5, though in different orders, for the City and the State. (Poisoning injuries can include suicide attempts or drug overdoses, other than opioids.)

Disability

Disability can compound health disparities and access to preventive health. For instance, women with disabilities are less likely to have had a recent mammogram than women without disabilities. People with cognitive or communication disabilities may not be fully included in health care decision making. In the age of rising concerns related to obesity, it is known that people with both motor and cognitive disabilities are at higher risk for obesity. Morbid obesity, meaning someone is 100 or more pounds over his or her ideal weight or has a BMI over 40, can severely impact everyday activities and ability to work. This along with related health issues such as diabetes or heart disease, can meet the official qualifications for disability status.

Education

Of the 35–44 years group in Somerville, based on U.S. census data available through 2015, 92.6% had a high school degree or some higher education, with 62.7% with a Bachelor's degree or higher. In the 45–64 years group in Somerville, 84.8% had a high school degree or some higher education, but only 33.6% had a Bachelor's degree or higher,

notably half the rate of college degrees of the younger middle age cohort (ACS). Given the protective factors that higher education offers, this might impact or inform targeted public health initiatives. This age group is also well represented in the adult education programs, especially those offering English language classes.

Economic Stability

According to The New York Times, areas of the United States with higher income inequality tended to have lower health outcomes than areas of just low income or high income residents (Sanger-Katz, 2015). There is emerging sociological theory that this stems from wealthier residents buying their way out of community social services and investing less in the community resulting in fewer local resources, causing more stress for the less wealthy. Author Sanger-Katz asserts, "This stress may translate into mental health problems or cardiac disease for lower-income residents of unequal places." This is of particular interest in the Greater Boston area communities, including Somerville, where the income and asset inequality gap is rising. With a widening gap between the wealthiest and the poorest, there are now peaks on the ends of the socioeconomic spectrum with a dip in the middle between those with enough resources to be independent and those who are income eligible for subsidies to allow them to stay in the community and access services.

A key example of the relationship between health and economic stability is research on suicide in older men that demonstrated a distinct decrease in suicide at age 62, the threshold for social security early retirement age, indicating some link to the access to a steady income at this age for those who may be struggling financially (Desimone, 2017). However, there are effective financial penalties to collecting benefits before Full Retirement Age, which is shifting gradually up to 67, depending on date of birth. For instance, for someone born in 1957, full retirement age will be 66 and 6 months. Given that the life expectancy of someone born in 1957 is estimated at another 25+ years, financial considerations that impact whether one receives 75% or 100% of benefits

can be a substantial decision. Yet, low income residents without other income options who must take early retirement will systematically have less income over the rest of their lives than those with the means to delay the start of Social Security benefits.

Poverty

The available information for middle adults is similar to earlier adult stages, with poverty (LC-10) and income distribution changes in Somerville over the past decade. American Community Survey data from 2010-2015 for Somerville indicates an overall poverty rate of 14.7%. In 2017, the poverty threshold was \$24,600 for a family of four, the minimum income that the U.S. Census Bureau considers necessary to meet basic needs, and is adjusted for family size to determine poverty rate. The official poverty definition refers to money income and does not include noncash benefits such as subsidized housing, health care or SNAP. See the Demographics section and other life stages for additional details.

Homelessness

Families with children facing homelessness (LC-07A) may have access to state funded temporary housing, though it may not be near Somerville. If families have children in the public schools and become homeless, resources are available to maintain students in their schools. Nationally, over recent decades, more women in this age group have become homeless due to factors such as domestic violence or abusive relationships, change in marital status or illness. Healthcare services, including case management and advocacy from programs such as CHA's Healthcare for the Homeless, can provide sorely needed medical supports for homeless populations, especially in this life stage where chronic disease and disability become more prominent. Changes in approaches to social supports for this population have directed more resources to case management and to supportive and permanent housing solutions to help both men and women transition from homelessness living on the streets or in shelters to safe, supportive settings, through agencies such as the Somerville Homeless Coalition.

Affordable Housing/Housing Security

The percentage of units of housing in Somerville designated as affordable continues to grow, though it is not able to keep pace with the demands from current residents for housing costs that can allow all who desire to live in the city to remain here. Even for those who own their own home, for those facing retirement and seeking to secure future income, the incentive to sell property that may have been in the family for generations comes with the caveat that it is hard to find another place to afford in the city.

Public housing, which provides subsidies for those who are income eligible, offers a resource that has preserved some options for families, seniors and the disabled. There are 674 family units and 782 elderly units owned and managed by the Somerville Housing Authority (SHA). Waiting lists are long. One fifth of the waiting list is seeking a unit with more than two bedrooms, to house families with children and/or multiple generations. There are also over 1,000 federally subsidized Section 8 vouchers for housing, though there is an average wait of two years. However, high prices have made it difficult to find housing in Somerville, so voucher holders have had to look for housing in other communities. As of 2015, there were also 474 privately owned subsidized family units and 381 elderly units in the city (Somerville Housing Needs Assessment).

Employment and Living Wage Jobs

According to the City's Economic Development Office, the top three industries or employment in Somerville are: 1) Health Care and Social Assistance with 5,569 employees, 2) Accommodation and Food Services with 3,852 employees and 3) Retail Trade with 3,661 employees.

This is generally the period of highest income for many as individuals are established in their careers and generally have completed higher education degrees. It is also the time of life when emotional work stressors, physical demands, hazardous conditions and cumulative impacts of repetitive motions can take their toll, producing complaints such as headaches and eye strain or low back pain and carpal tunnel.

Workplace interventions can provide support and facilitate wellness for employees. Worksite programs such as yoga, Weight Watchers, walking clubs, or mindfulness can help support skills building and behavior shifts. Peer supports, especially for those dealing with family mental illness and/or substance abuse, can help promote positive mental health in times of stress. For some populations such as middle adult veterans, retirement from the military can happen early in this stage, triggering challenges in finding new work or juggling financial needs, perhaps along with continuous healthcare issues from earlier service.

A recent study of American workers, based on a 2015 survey, indicated that 20% of workers report that they deal with hostile environments at work, especially those who have front line jobs dealing with customers. On a more positive note, over half of workers surveyed reported they had good friends at work (Maestas et al., 2015).

Food Security

Food security is defined as “having reliable access to a sufficient quantity of affordable, nutritious food.” In the past five years, the demographics for who is food insecure has shifted. Especially as housing costs in Somerville has risen, the squeeze on income has created hard choices between housing, utilities and food. If an individual or family does not have help with housing costs, they may be stretching to cover other expenses such as food. In Somerville, 9.3% of households were reported to receive SNAP benefits as of 2015, with the largest percentage in zip code 02145 (the eastern side of the City). Yet, based on available information, it is suggested that as many as 61% of those who are income eligible for SNAP benefits in Somerville are not accessing them (Food Bank of Western MA). This may have some links with a years old phenomenon where rumors spread that accepting WIC or SNAP would impact an immigrant’s path to citizenship. While at the time of this publication, that has not been true, just the threat of this potentially changing has created yet another barrier to current food security for individuals and families, many with young children.



The Great Recession

The Great Recession was a period of general economic decline observed in world markets, officially lasting from 2007-2009. This was predominantly due to the real-estate market's housing bubble, including the subprime mortgage crisis here in the United States, though there were other global factors. The Great Recession resulted in the collapse of numerous financial banks in the world economy. The resulting loss of wealth led to sharp cutbacks in consumer spending. This loss of consumption, combined with the financial market chaos, also led to a collapse in business investment.

As consumer spending and business investment dried up, massive job loss followed. In 2008 and 2009, the U.S. labor market lost 8.4 million jobs, or 6.1% of all payroll employment. This was the most dramatic employment drop of any recession since the Great Depression between 1929-1938. The job loss during the Great Recession meant that family incomes dropped, poverty rose and people lost job related health insurance. The bursting of the housing bubble and the drop in the stock market precipitated a dramatic drop in family wealth. The recovery of financial stability has been stronger and faster for those individuals and businesses that had financial cushions to tide them over, but has not been as evident and has had longer lasting implications for those with less financial wealth before the recession.



Natural and Built Environment

Housing (safe, affordable and accessible)

Quality housing, inclusive of safe housing, is important at all ages, though the impact may be different. The age of Somerville housing stock means that many properties may be in need of repair or renovation. Research indicates that parental stressors due to poor quality housing have negative impacts on children. Parents and non-parents alike can be stressed by problems that arise from dated appliances, rotten porches, the presence of lead paint or rodent or bug infestations that may be beyond renters' control. Even though tenants have numerous rights in Massachusetts, if English is not one's first language or one's immigration status is insecure, claiming those rights might require an external advocate. In 2014-2016, housing security became a growing issue for renters as landlords were raising rents to levels that were not affordable on basic incomes or selling properties and triggering significant shifts towards higher income populations. Moving regularly is a known risk factor for children's health—and does little to improve the health of parents. Community organizations continue to struggle to keep up with the demand for eviction protection and homelessness prevention for those most economically vulnerable.

Safe and Secure Neighborhoods

Somerville crime showed a general decrease, based on data available for between 2012 and 2014. The crude rates per 100,000 were lower than the state and national rates, with the exception of motor vehicle theft. The rates for violent crime, murder, rape, property crimes and burglary were notably lower (Somerville Police).

Transportation

Somerville's Walk Score of 86/100 is the second highest in the state, just barely edged out by Cambridge. In 2013, it made the nation's Top 10 list. The Transit Score is 62. These are measures of the walkability of an address and the access to public transit (Walk Score).

The Green Line Extension will increase additional commuting options for Somerville residents, expanding public transit to almost all areas of the city. The companion Community Path is gradually extending the multi-modal path which will eventually allow for largely off-road people-powered transit into Boston and out past Concord. These projects were intended to serve as environmental mitigation for the increased vehicular traffic on I-93 related to the "Big Dig" construction projects which were completed in 2007.

Environmental Health

The reality of a major highway bifurcating the city has potential health impacts. Somerville, and nearby Chelsea, disproportionately have higher lung cancer and heart attack deaths. Increasingly more residents in these areas are active commuters, who may be unaware of the potential health impacts associated with exposure to ultrafine particles when being active near the highway. Cyclists along high traffic routes experience higher exposure to air pollution than commuters in buses and cars (Zuurbier et al., 2010).

While there are clear benefits to active transportation, policy and system changes in the location of housing and construction of infrastructure can help to better protect population health. Somerville state representatives, as well as Tufts professor Doug Brugge, have recognized the risk posed to vulnerable Somerville communities, especially those living near Interstate-93 and McGrath Highway and those who commute by bicycle. They are working with advocates from the Somerville Transportation Equity Partnership and the City to fund solutions for the pollution exposure problem, including physical barriers between high traffic roads in the City and nearby parks and sidewalks (Bowler, 2017).

With the combined impact on global health of intercontinental travel and the increase in extreme weather events linked to climate change, there is growing attention related to planning for pandemics. Municipalities like Somerville have efforts under way to plan for local emergency preparedness including discussions on how to address the needs of the most vulnerable populations, including animal companions, in facing future threats to health and safety whether from natural disasters or epidemics.

Access to Nature and Open Space

Access to greenspaces and nature is increasingly recognized for offering respite, solace and rejuvenation for both mental and physical wellbeing, even in small urban venues. The city has many parks, with newly built or renovated parks combining passive recreation with active uses such as community gardening or sports. Nearby amenities include the Middlesex Fells, a favorite of bikers, dog walkers and hikers, as well as the Mystic River system with improved boating options and waterside walking trails.

Social and Community Context

Many of today's middle age adults would be considered part of the Gen X and later baby-boomer generation. The social transitions that marked their childhood included higher rates of divorce and women moving from the home into the workforce in large numbers. Opportunities for out of school or after school activities were limited, so as young people, many in this group had more freedom and less adult supervision than other life stage groups, sometimes referred to as the "latchkey" or free-range generation.

As grown-ups, these middle adults tend to be the "sandwich generation," with simultaneous responsibility for children and aging parents, which can stretch life balance, with multiple impacts on health and wellbeing. Self-care and attention to one's own health may suffer when one is focused on caring for others. Stress has cumulative effects on

mental and physical health. At the same time, the later end of this life stage is when health issues may start to increase. Social conversations in one's sixties can become dominated by life's ailments and the advent of chronic diseases that require changes in one's daily activities. Community networks and social supports are especially important during such times of life.

Race

A Pew study conducted in 2016, "On Views of Race and Inequality, Blacks and Whites Are Worlds Apart," revealed some significant differences of opinion between Blacks and Whites, non-Hispanic. For example, 88% of Blacks believe the U.S. has more work to do for Blacks to have equal rights with Whites; by comparison, only 53% of Whites think there is still work needed to be done. In terms of strategies to address inequality, there are also discrepancies; 41% of Blacks and 34 % of Whites believe that bringing people of different racial backgrounds together to talk about race is important in achieving racial equality, 38% of Blacks and 24% of Whites believe that getting more elected Black officials is important, and 19% of Blacks and only 7% of Whites believe that organizing protests and rallies are very effective tactics. The national discourse between 2013 and 2017 provided increasingly public demonstrations challenging persistent structural racial inequities, ranging from increasingly outspoken voices across the social spectrum, such as the Black Lives Matter movement which rose to attention in 2014 or the White supremacist and counter rallies of August 2017.

Social Safety Network/Social Support

Some find support and solace from faith-based organizations. In the City of Somerville, there are a number of new and long standing churches, one synagogue, an active havurah and a mosque in close proximity that serves the growing Muslim populations. It should be noted that within several decades, there has been a significant drop in religious affiliation, particularly for the White population and this age range. Not long ago, there were seven active Roman Catholic parishes each with an associated parochial school. Today only five parishes and one school remain. Protestant congregations have typically seen even more decline,

with many renting space to newer immigrant congregations coming into the city in order to survive.

Somerville is a city with a history of collaborations among social services to better serve residents. Yet, there are often information or data gaps between service providers, at times requiring someone in need of assistance to visit several different offices to repeat their information and story yet one more time. At the state level, there are efforts underway to have a universal portal for accessing state services such as Mass-Health or SNAP. In Somerville, service providers are exploring methods to improve both interagency referrals and integrated data tracking to improve outcomes and reduce redundancies for residents and increase effective use of resources.

Violence (Domestic Violence, Sexual Abuse)

Domestic assault data from the Somerville Police indicates that there has been a slight increase from 2010 to 2016. Domestic assault in middle age, and later in life, occurs in two main contexts. The first is late-onset domestic violence, which begins for the first time during this age, either in a new or existing relationship. The second is domestic violence “grown old”, with experience of violence throughout a relationship continuing into middle and older age. Some victims, and survivors, may come from generations where they were less likely to have financial independence. For others, generational norms and values particularly for those over 50, may include violence as a normal part of a relationship that should be kept private and within the family. These incidents also affect others in the family, as well as the workplace, with potential impacts on physical and mental health as well as productivity.

Incarceration Rate

The incarceration rates (LC-58B) in Massachusetts have decreased since 2007. In 2015, the population under the authority of the Massachusetts Department of Corrections was 10,544. There was a high level of mental illness among the incarcerated population; in 2015, 13% of women and 8% of men had a diagnosed serious mental illness, and 56%

of females and 21% of males were prescribed psychotropic medications. The average male in Massachusetts Department of Corrections (DOC) custody was 41 years old and the average female was 37. Of the males, 46% had less than a 9th grade reading level; 32% for females. The highest proportion of inmates in Massachusetts are White, though the population of Blacks is disproportionate to the overall state population. As of January 2016, 39.7% were between the ages of 40 and 59 (MA Department of Corrections).

Community and Civic Engagement

For anyone who wants to get engaged in community—both locally and beyond—Somerville has multiple options. A quick scan of opportunities posted online shows a wide range, from requests for therapy dogs for classrooms, Girl Scout Troop Leaders, math tutors, hospice volunteers, literacy tutors, food pantry support and medical advocates. The City has developed a robust community engagement approach to planning that often offers several meetings per week one could attend, if desired. City Commissions and non-profit boards rely on the civic spirit of residents to fill these important positions that keep public programs and agencies operational. Many devote hours to their faith-based community, or friends and family in ways that foster the type of social networks that build individual and community resilience.

Another form of community engagement is the electoral system, where there can be activity on very local to national levels. Door knocking, canvassing, stand-outs and “get out the vote” efforts can absorb a lot of time and talents. Over the past decade, efforts to build local leadership capacity, including but not exclusive to running for elected office, have taken place in such venues as the City’s earlier adaptive leadership training program, Somerville Community Corporation’s long running Leadership Development Institute, and most recently, Emerge Massachusetts, which trains women to participate in the democratic process.

Recommendations for Middle Adult

Ages 40–64

■ Increase access to health promoting resources

- Increase access to health advocacy tools for English language learners and low income adults, including self-care
- Promote a culture that supports improved self-care for caregivers, emphasizing periodic health screenings for prevention such as breast or prostate cancer and diabetes
- Engage local primary care provider in health education and screening efforts that support positive aging
- Improve data collection and tracking efforts for health and wellbeing for middle adults
- Explore ways to reduce obesity in Hispanic and Black communities to reduce adverse health impacts
- Expand outreach to first-time older mothers to improve birth outcomes



■ Facilitate a community with strong social networks and support systems

- Increase in-person social networking opportunities, promoting the benefits of positive relationships for all ages
- Improve capacity of existing neighborhood associations to support an engaged community and connect to the active political scene
- Promote volunteer opportunities for engagement
- Create supports for the sandwich generation who are caring for young kids and older parents, or for spouses with disabilities
- Expand continuing and returning education opportunities for adult learners



■ Create lifelong habits to promote mental health and substance use prevention

- Establish and foster peer and professional mental health education opportunities
- Foster greater consistency in work/life balance and workplace policies across sectors, including addressing stress and other key health issues impacting this age group
- Integrate stress reduction and self-compassion promoting opportunities into community settings
- Identify new ways to acknowledge the role that alcohol can play throughout the lifespan and encourage new norms with regard to stress relief and socializing

■ Support increased physical activity and healthy eating opportunities

- Engage this age group in planning and advocacy for improved equity and infrastructure supporting active transportation, physical activity and healthy eating for all
- Explore recommendations related to near highway exposures, related to peak times for physical activity in these areas and mitigation measures to reduce exposure

Older Adult

Introduction

Somerville is a great place to live, work, raise a family—and increasingly, to grow older. Somerville is listed as an emerging age-friendly community by the Massachusetts Healthy Aging Collaborative. The city is striving to provide the infrastructures and supports to encourage “aging in place.” The Center for Disease Control defines “aging in place” as the concept of a person being able to remain living in their own home safely and independently despite age, income or ability level. The diversity, walkability and wide range of community services available in Somerville makes the city very attractive for aging baby boomers, the youngest of whom will reach the age of 65 by the year 2030.

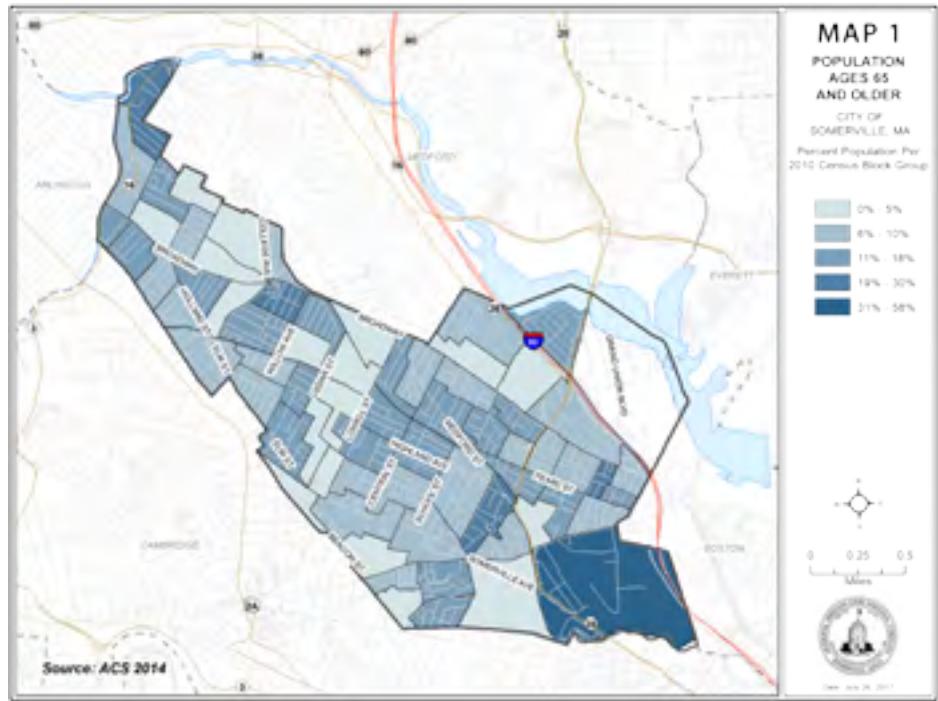
The age range for older adult is 65 years and above, the broadest age range within the report. Older adults have a wide variability in terms of health, ranging from very healthy older adults who are actively engaged in the community to those with multiple chronic diseases or disabilities who may be socially isolated. Global research indicates that overall U.S. health outcomes as people age are worse than other countries and data

within the U.S. indicates persistent health disparities in older age, influenced by disadvantages such as race and poverty at earlier life stages. Among the large number of immigrants within the city’s older adult population, many have limited capacity to communicate in English and close to a third are not U.S. citizens, limiting access to benefits available to native born residents that help support this life stage. Variability is also notable within education and economic status. One seventh of the older adults in Somerville are living in poverty, relying on social supports for housing, health and other basic needs while more of their peers are very financially secure, emphasizing the growing wealth gap in the city.

Older adults have experienced a great deal of change within their lifetime. They have experienced the “race to space” and cultural revolutions as well as taken part in wars with resulting social and economic impacts. Almost half of the veterans in the city were involved in World War II, the Korean War or Vietnam. Adults in this age have seen the transformation of the public housing system that was implemented to help returning veterans; today, this system primarily serves elderly, immigrant and low income populations. The advent of nuclear power, a force utilized to end World War II, has been redirected to providing

Older adults have a wide variability in terms of health, ranging from very healthy older adults who are actively engaged in the community to those with multiple chronic diseases or disabilities who may be socially isolated.





energy across the world, while also escalating the nuclear arms race for decades. In their lifetimes, the Berlin Wall fell and the Soviet Union was dissolved, heralding the supposed end of the Cold War. Perhaps just as impactful, technology moved from computers that took up entire rooms to small, personal computing devices that can connect one instantly to the information of the internet. Shifts in technology changed the American workplace, with far fewer remaining manufacturing jobs. This is also the group that may have been most impacted by the Great Recession, which dramatically shrunk retirement savings for many or extended the years that people needed to work.

Demographics, age specific

People age 65 or older constitute 9.4% of Somerville's population or approximately 7,387 older adults, according to the U.S. Census Bureau

American Community Survey 2011-2015 five-year estimates. Map 1 at left, demonstrates that older adults over 65 are most likely to be concentrated where this is senior housing, such as assisted living and public housing. Overall nationally, the older U.S. population is growing, more than doubling between 1975 and 2015, as the baby-boomers age. Data estimates from 2011-2015 indicated that 4.2% of the total U.S. population was over 75 years of age (Health, United States, 2016).

The race/ethnicity distribution of older adults in Somerville, according to 2015 government estimates was: 88.8% White, 5.6% Black or African-American, 4.7% Asian, and 3.6% of Hispanic or Latino origin (of any race). The race/ethnicity distribution in Massachusetts, according to 2015 US Census estimates was: 79.6% White, 7.1% Black or African-American, 6.0% Asian, and 10.6% of Hispanic or Latino origin (of any race). In 2015, just over 75% of the U.S. older adult population was non-Hispanic White, 8.8% was non-Hispanic Black, and 7.9% was Hispanic/Latino (U.S. Department of Health and Human Services). Based on the most recent available data, from 2015, 29.5% of Somerville residents 65 or older were not U.S. citizens, 23.4% spoke English less than "very well," 38.2% had a disability, and 14.2% lived below 100% of the poverty level (American Community Survey (ACS)). These are all risk factors for the development of health issues in older adults.



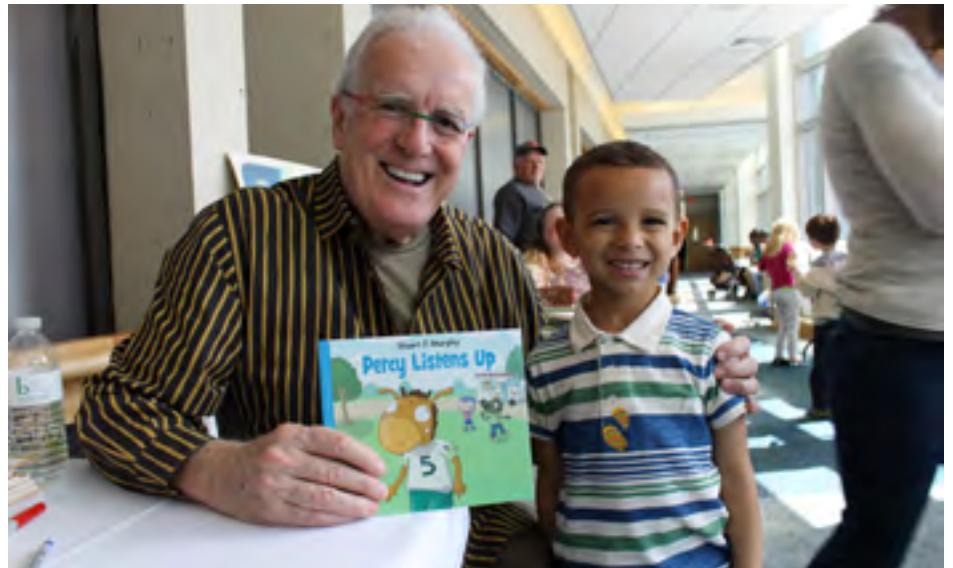
Access to Healthcare

Health Insurance Coverage

Medical Health Insurance coverage (LC-40) is one of the predictors of health and wellbeing. Most Americans over the age of 65 are eligible for Medicare, to assist with medical coverage. Additionally, low income seniors and people with disabilities have access to Medicaid support. At the time of this publication, the future of health care access for immigrants is not certain, as proposed legislation would severely impact the eligibility of immigrants and/or create waiting periods for accessing federal healthcare supports. Somerville adults age 65 or older have the highest rates of health insurance coverage of all age groups, with only 0.4% without coverage. The number of Somerville residents served by Medicare in 2015 included 27.0% who were Medicare Managed Care enrollees (where individuals pay extra premiums to help cover costs beyond Medicare coverage) and 23.5% who were dually eligible for Medicare and Medicaid (due to income eligibility).

Of the older adult population in Somerville, 65 and over, 61% reported more than 4 chronic conditions, as of 2011 (Dugan, Porrell, and Silverstein, 2015). Compared to the Massachusetts population, Somerville residents reported higher percentages of diagnosis with depression (31.5%), diabetes (34.9%), ischemic heart disease (46.8%), congestive heart failure (28.8%), anemia (51.4%) and chronic kidney disease (23.8%) (Dugan, Porrell, and Silverstein, 2015).

Yamada et al. (2015) discuss in the article “Access Disparity and Health Inequality of the Elderly: Unmet Needs and Delayed Healthcare” how increased income amongst the elderly was associated with more positive health outcomes, particularly when examining unmet needs related to medication. For lower income elders, many problems were associated with out-of-pocket expenditures for medications, an issue that correlates with poorer health outcomes.



Primary Care Provider

Increasing the proportion of adults aged 65 years and older who have a specific source of ongoing medical care (AHS-5.4) is key to promoting health in older adults. According to the Massachusetts Healthy Aging Community Profile (Dugan, Porrell, and Silverstein, 2015), 97.8% of Somerville residents over 65 received their care from a Primary Care Provider, 89.1% had a physical exam/check-up within the last year and 3.7% did not see a doctor when needed, citing cost as the reason. It is a national goal to increase the proportion of the health care workforce with geriatric certification (OA-7) to better meet the specific needs of the aging population. In 2016, Cambridge Health Alliance (CHA) provided care for 1,975 Somerville adults over the age of 65. In 2016, Medicare started covering the cost of advanced-care planning conversations, including between the primary care provider, patient and the patient's family to discuss treatment goals and patient preference as they near the end of life.

The special needs of local frail, older adults triggered the establishment, in 1987, of the CHA House Calls Program to provide primary care in the Somerville-Cambridge area for those who have difficulty leaving the home for routine medical care. House Calls staff includes 2 physicians, 5 nurse practitioners and 1 social worker. Currently expanded to an additional five cities, the program serves more than 260 home-bound older adults in the region, allowing them to remain at home and age in place.

Four CHA geriatrics physicians and four nurse practitioners in the CHA Nursing Home Program collaborate to provide primary care to over 450 older adults living in eight area nursing facilities, including in Somerville. Additionally, they provide post-hospital discharge care to older adults who are receiving skilled nursing facility-level rehabilitation in the same nursing facilities. There is also collaboration with home care services for seniors, such as the Visiting Nurses Association of Eastern Massachusetts, who are able to reside in their homes. The CHA Elder Service Plan (ESP) is one of 122 PACE (Program of All-Inclusive Care of the Elderly) programs in the country. A multidisciplinary team and support staff collaborate to provide community-based, coordinated care to adults 55 years of age and older who are considered eligible for nursing home level of care. The CHA ESP program enrolled its 400th patient in mid-2017.

Immunizations

The estimated national rate, as of 2013, for persons 65 and older who had received a pneumococcal vaccination at least once during their lifetime was highest for Whites at 64.7%; Blacks, Hispanics/Latinos and Asians were in the 45-50% range (Williams et al., 2016). The lowest rates nationally were in the Hispanic/Latino population and those living below 100% of the poverty level. In Somerville, 62.3% of the population age 65 or older had a pneumonia vaccine according to the MA Healthy Aging report from 2015. Shingles vaccines for those over 65 were reported at 26% in the same report.

Although vaccines are most notably administered to children or young adults, older adults, are at a higher risk when it comes to the flu due to age-related weakening of the immune system. For the 86% of adults 65+ who are managing a chronic condition such as diabetes or heart disease, the flu can be even more dangerous due to the likelihood of developing complications or becoming hospitalized. CDC vaccine guidelines for older adults include: Influenza (Flu), Shingles (Herpes Zoster), Diphtheria, Tetanus, Pertussis (Whooping Cough) and Pneumococcal disease (Pneumonia).

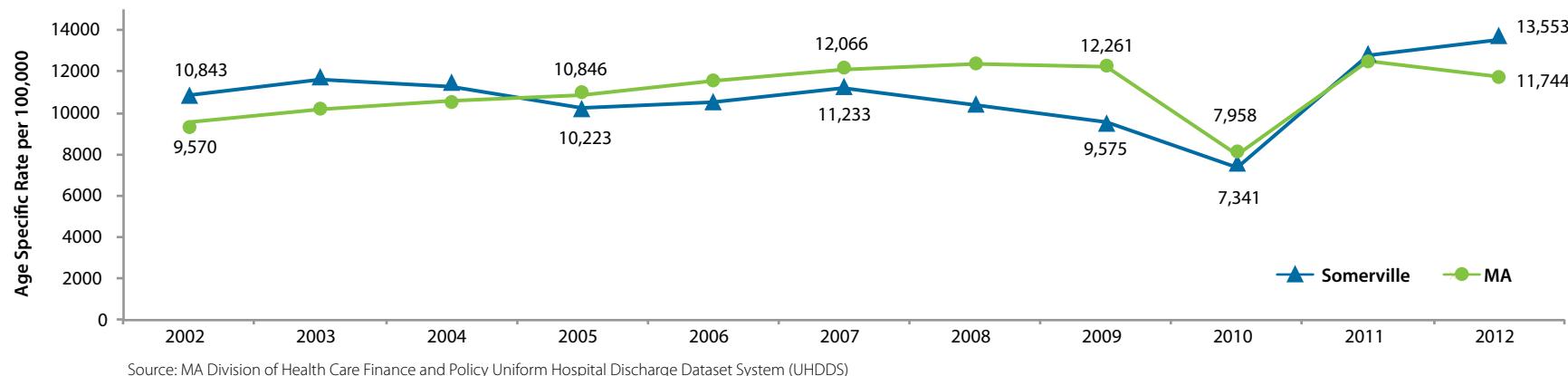
Oral Health

Fluoridation (LC-05), recognized as preventative for dental health, may not have been as readily available when today's older adults were young children, though it is now inherent in the public water supply. According to the Massachusetts Healthy Aging Community Profile for 2015, 73.4% of older adults in Somerville had an annual dental exam, compared to the state at 76.1%. Complete tooth loss, requiring dentures, was reported by 35.8% of Somerville seniors, the same as the state rate (Dugan, Porrell, and Silverstein, 2015).

Behavioral & Mental Health

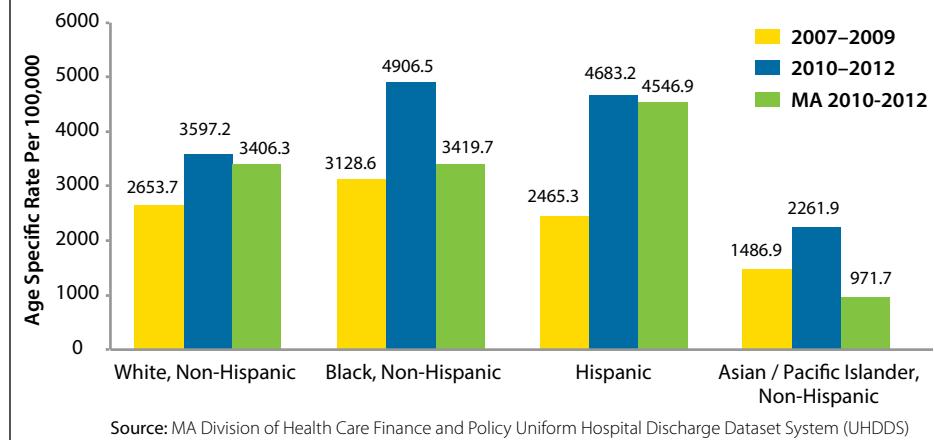
According to the Massachusetts Healthy Aging Community Profile (Dugan, Porrell, and Silverstein, 2015), on self-reported mental health (LC-34) issues, the rate of older adults who reported "15 or more days of poor mental health in the last month" was 2.6% for Somerville residents; the State reported rate was 6.7%. Satisfaction with life was high both among Somerville older adults and across the state, both at 95.8%. Two risk factors for mental health that were examined were: 1) receiving adequate emotional support (Somerville 77.4%, MA 80.7%) and 2) ever having been diagnosed with depression (Somerville 31.5%, MA 28.6%).

CHART 1: Mental Disorder Related Hospitalizations for Adults Age 65+ in Somerville and MA (2002-2012)



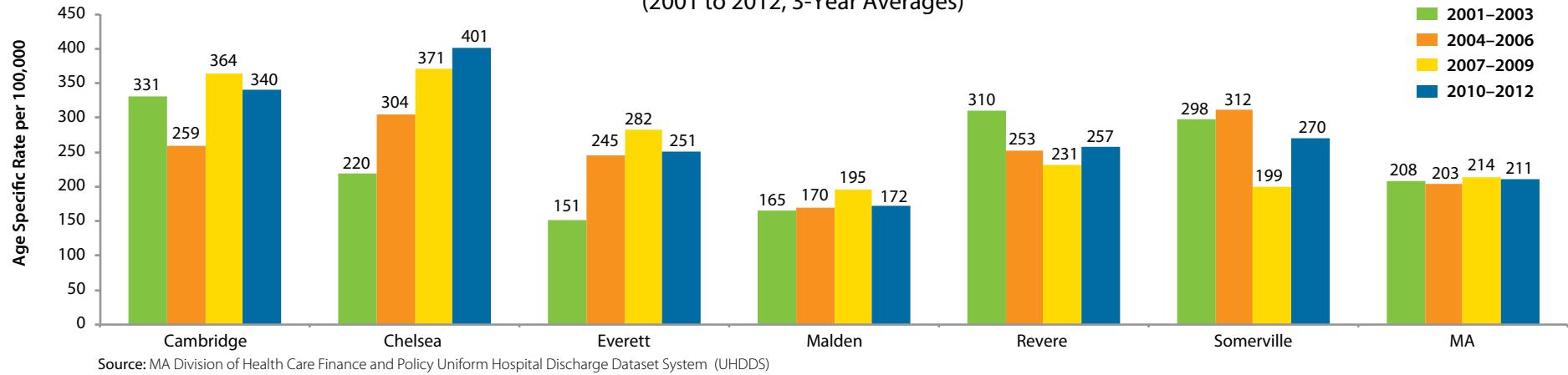
- Chart 1 illustrates that rates for hospitalizations for treatment of mental disorder among all Somerville residents 65+ increased between 2010 and 2012 and surpassed the Massachusetts average rate in 2011 and 2012 for the first time since 2004 (MA Division of Health Care Finance and Policy, Uniform Hospital Discharge Dataset System (UHDDS)).
- Additional information demonstrates that mental disorder related hospitalizations in adults age 65+ in Somerville has been at consistently higher rates among females than males, with an increased rate in both genders between 2010 and 2012.
- In general, data on mental disorder related emergency department visits in Somerville demonstrated similar trends to Massachusetts, with an overall increase between 2002 and 2012.
- In contrast to hospitalizations, data from the state reports that from 2006 to 2011, Somerville males 65+ visited the emergency department for mental disorders at a higher rate than females. However, the rate for females visiting emergency departments for mental disorder has been rising consistently and in 2012 female visits to the ED exceeded male visits.

CHART 2: Mental Disorder Related ED Visits for Adults Aged 65+ in Somerville and MA by Race (2007-2012, 3-Year Averages)



- According to Chart 2 (the 3-year average from 2010-2012), Black and Hispanic/Latino adults 65+ had the highest rate of mental disorder related emergency department visits (4,906.5 per and 4,683.2 per 100,000 visits, respectively). Asians had the lowest rate (2,261.9 visits per 100,000 visits overall) (UHDDS).

**CHART 3: Alcohol/Substance Related Hospitalizations for Adults Age 65+ in Somerville and Surrounding Cities
(2001 to 2012, 3-Year Averages)**



Substance Use Disorder/Addiction

Substance use is a growing issue among older adults, involving the abuse of alcohol, drugs and prescription medications. It is important for both families and medical professionals not to exclude the possibility of substance abuse when an older adult is presenting with symptoms typical of addiction or withdrawal.

Alcohol

Aging can lower the body's tolerance for alcohol. Older adults generally experience the effects of alcohol more quickly than when they were younger. This puts older adults at higher risks for falls, car crashes and other unintentional injuries that may result from drinking. Alcohol abuse in older adults can be complicated by the use of prescription and over the counter (OTC) medications. Combining medications and alcohol increases the occurrence of side effects and can intensify adverse reactions.

According to the National Institute on Aging, older adult drinkers usually fit within two general types: the “hardy survivors,” those who have been abusing alcohol for many years and have reached 65, and the “late

onset” group, those who begin abusing alcohol later in life. The latter group’s alcohol abuse is often triggered by changes in life such as: retirement, death or separation from a family member, a friend or a pet, health concerns, reduced income, impairment of sleep and/or familial conflict. About half of all Americans ages 50 to 70 will be at high risk for alcohol and marijuana abuse by 2020, compared with less than 9 percent in 1999, according to the Substance Abuse and Mental Health Services Administration.

- In contrast to the Hospitalization data in Chart 3 above, additional related data indicates that in the 2010-2012 period (3-year averages), the rate of Alcohol/Substance related emergency department visits for adults 65+ in Somerville was lower only than Chelsea’s, when compared to rates in surrounding cities (UHDDS).
- Relatedly, in 2010-2012, the age-specific rate of emergency department visits for adults age 65+ in Somerville was higher for both Whites and Blacks than the state. Black, non-Hispanic rates (2,024.9 per 100,000) were dramatically higher than Whites (347.4 per 100,000).

Tobacco

Nicotine dependence is also a significant problem in the elderly. Use early in life sets the stage for morbidity and mortality from this addiction. Elderly smokers not only continue to impair their respiratory systems, but are also more apt to die from respiratory diseases.

Physical Health

According to the Massachusetts Healthy Aging Community Profile 2015 (Dugan, Porrell, and Silverstein, 2015), 14.5% of Somerville's older adults self-report fair or poor health status, slightly lower than the state rate at 20.7%. National studies, such as the Health and Retirement Study Aging in the 21st Century, suggest chronic diseases are manifesting at younger ages which impacts the healthspan of the older population. Although the early onset is not changing morbidity, people are living longer with chronic disease that may impact quality of life. Women have longer life expectancy than men, but are more apt to be assessed as being frail, thus increasing risk for falls and injury while decreasing resilience (University of Michigan, 2017).



Obesity

Nationally, 11.7% of people 65 and over reported participating in leisure time aerobic and muscle-strengthening activities that meet the 2008 Federal physical activity guidelines from 1998-2014. Participation varied based on age ranging from 14.5% for 65-74 year olds down to 5.1% for those over 85 (Older Americans: Key Indicators of Well-being, 2016). In Massachusetts, data reported in 2015 indicated that 25.2% of state residents over the age of 65 were obese (Dugan, Porrell, and Silverstein, 2015). In Somerville, the Council on Aging and Parks & Recreation Departments offer a range of physical activities for older adults, such as the evidence based Fit-4-Life program developed with Tufts University. Limited data is available on healthy eating and physical activity levels in Somerville older adults.

Increased rates of obesity may be associated with more physical ailments in older adults, based on trends over the last 15-20 years. Early baby boomers (born between 1948-1953) reflect this with national increases of obesity rates by 7-10% compared to older cohorts. There are associated links between obesity and increased rates of diabetes and arthritis, both of which can impair daily living activities (University of Michigan, 2017). There is increasing attention to the connections between disability and obesity. Physical inactivity is a high predictor of obesity. Mobility or cognitive limitations can seriously impact the opportunities and options for physical activity, especially for those with limited financial resources. There is a lack of available data on obesity and related conditions for Somerville older adults.

In Somerville, the Council on Aging and Parks & Recreation Departments offer a range of physical activities for older adults, such as the evidence based Fit-4-Life program developed with Tufts University.

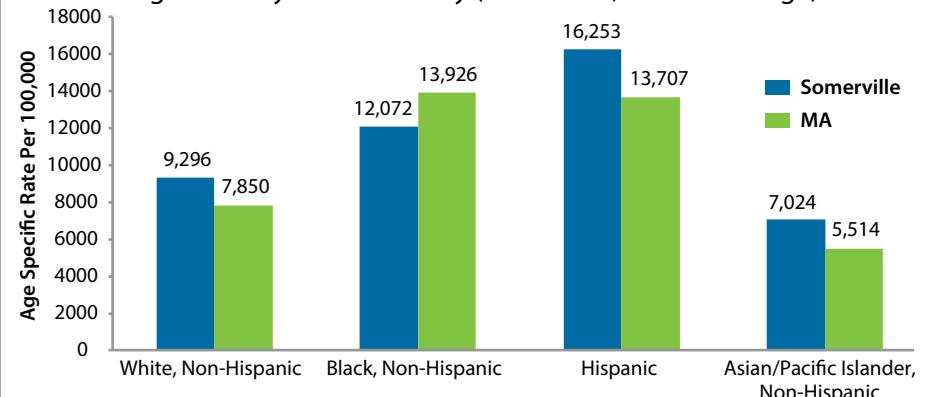


Diabetes

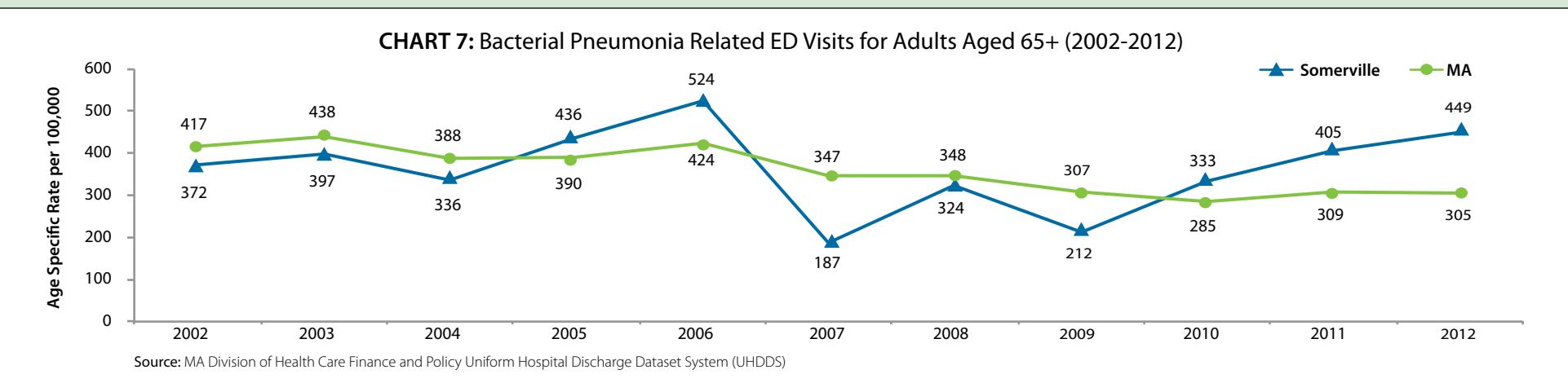
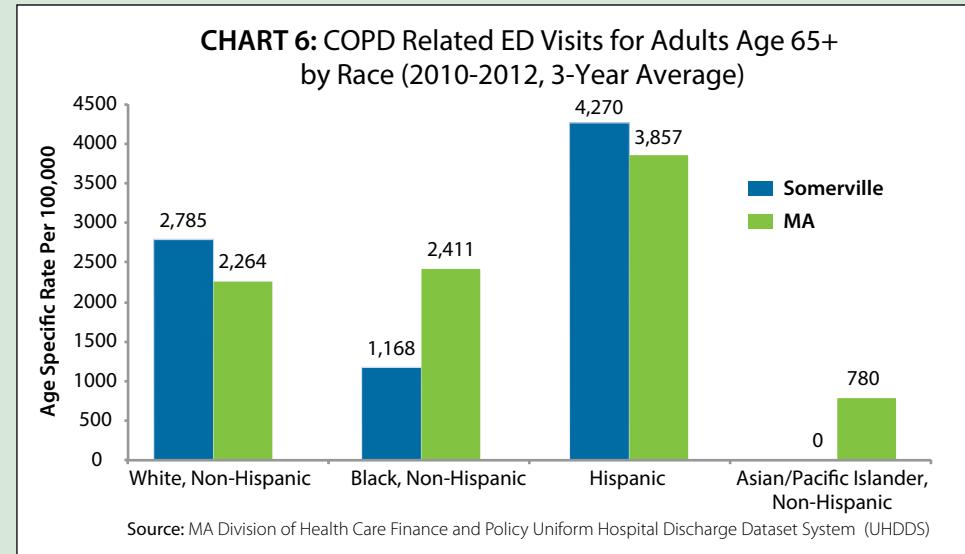
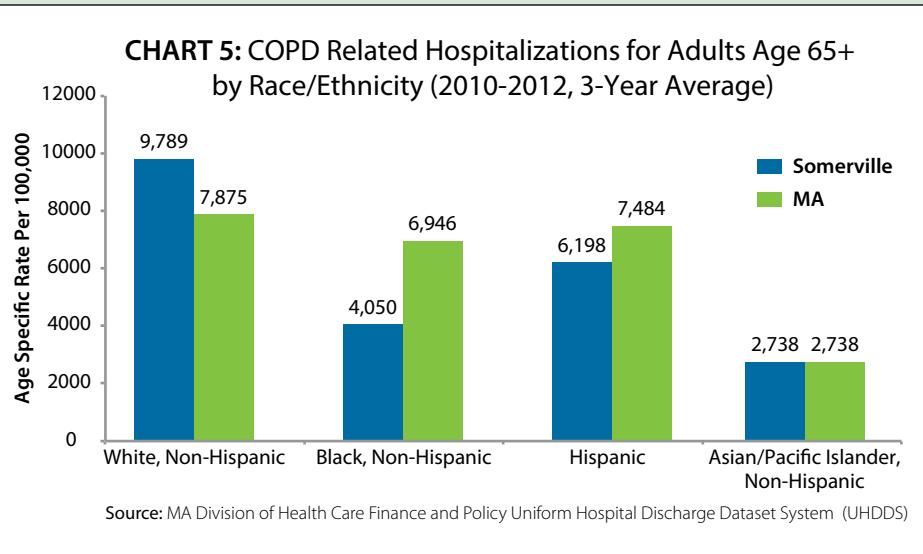
Diabetes Mellitus is a chronic disease that affects multiple body systems, requiring attention to diet and exercise levels, as well as often requiring medication for treatment to limit the negative impacts. Older adults have higher rates of diabetes than other age groups, across the U.S., with more than a quarter of Americans 65 and older with this diagnosis. Diabetes can be linked to higher risk factors for cardiovascular disease, as well as higher levels of nursing home placement. Other risk factors include a higher rate of dementia and cognitive deficits, neuropathies, falls, depression and vision impairment (Kirkman et al., 2017).

- Based on Chart 4, rates of hospitalizations between 2010-2012 (3-year average) for Diabetes Mellitus were higher in Somerville than the state rate for Hispanics/Latinos, Whites and Asians. Hispanics/Latinos and Blacks have the highest rates of hospitalizations, compared to Whites, with Asians having the lowest rate (UHDDS).
- Additional state data indicates that Diabetes Mellitus has been the leading cause of hospitalizations for residents 65 and older in both Somerville and the state as a whole.

CHART 4: Diabetes Mellitus Related Hospitalizations for Adults Aged 65+ by Race/Ethnicity (2010-2012, 3-Year Average)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)



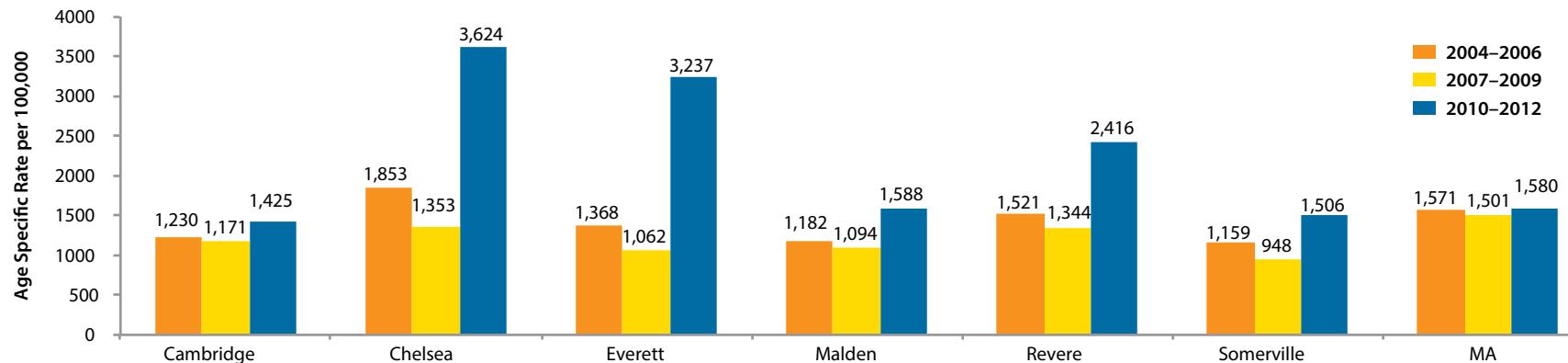
Respiratory Disease

Respiratory issues account for some of the top causes of both hospitalizations and emergency department visits for adults 65 or older. There are strong links between asthma in childhood and COPD later in life, especially for those with a history of severe asthma.

- White Somerville adults ages 65+ had the highest rate of COPD related hospitalizations between 2010-2012 (3-year average) as seen in Chart 5 (UHDDS).

- Data in Chart 6, on the rate of COPD related emergency department visits, shows the highest rates for Hispanics/Latinos, suggesting possible barriers to primary and preventative care for this population, or possibly delays in seeking health care until faced with an emergency (UHDDS).
- Bacterial pneumonia related emergency department visits in Somerville, seen in Chart 7, rose from 2009 to 2012 to hit the City's second highest rate since 2002 (448.9 visits per 100,000 ED visits overall), well over the state 2012 rate (304.5 per 100,000 visits) (UHDDS).

CHART 8: Cardiovascular Related ED Visits for Adults Aged 65+ Years (2004 to 2012, 3-Year Averages)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)

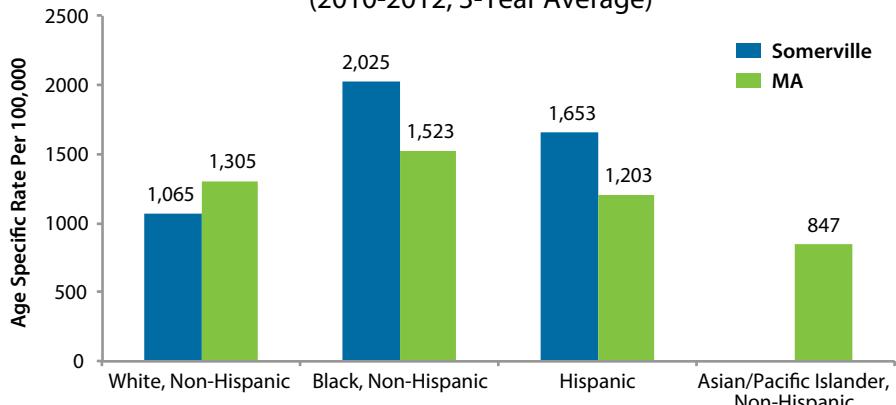
Cardiovascular Disease

According to the American Heart Association, cardiovascular disease is the number one cause of death for both men and women over 65. In Somerville, it has been the top cause of death for those 65+, and the third most likely cause of hospitalizations.

- According to Chart 8, data from 2004-2012 (3-year averages) indicates that rates of cardiovascular related emergency department visits for adults 65+ saw an overall increase (29.9%) in Somerville and an even more dramatic increase in surrounding towns, especially between 2007-2009 and 2010-2012, while the state level held fairly steady throughout.

- In Somerville, Hispanics/Latinos had the highest rate of cardiac related hospitalizations (UHDDS).
- When comparing cardiovascular related hospitalizations data with data on emergency department visits between races in Somerville among adults 65+, Asians were hospitalized for cardiovascular issues at a rate that was slightly less than one third the rate for Whites (2,976 per 100,000 hospitalizations versus 7,587 per 100,000 hospitalizations between 2010 and 2012), yet Asians visited the emergency department for cardiovascular related issues at almost twice the rate (2,262 per 100,000 ED visits) that White adults 65+ did (1,227 per 100,000).
- Somerville Hispanics/Latinos had the poorest cardiovascular health overall between 2010 and 2012, with the highest rates of cardiovascular related hospitalizations and emergency department visits in that period.

CHART 9: Stroke Related Hospitalizations for Adults Aged 65+ by Race (2010-2012, 3-Year Average)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)
For Somerville, Asian/Pacific Islander rates was not applicable

- As indicated in Chart 9, the rates of stroke related hospitalizations for Blacks and Hispanics/Latinos 65+ in Somerville, were higher by 33.0% and 37.4% respectively than Somerville Whites or the respective Massachusetts rates in 2010-2012 (3-year average), with data on Asians 65+ in Somerville at levels not reportable (UHDDS).
- Based on a comprehensive review of data for this age group, it is notable that similar to cardiovascular related hospitalizations, stroke and diabetes related hospitalizations tend to have occurred at higher rates in Black and Hispanic/Latino adults 65+ in Somerville. A notable increase was noted in the Hispanic/Latino population for cardiovascular disease related hospitalizations in the 2007-2009 period compared to 2004-2005, though the rate decreased overall.
- Between 2004 and 2012, stroke related emergency department visits for ages 65+ saw a 37% increase, the highest by double of regional cities and much higher than the increase of 4.3% in the state levels.

Health Reserve Index Pilot

Lack of physical reserves can increase risk of falls, hospitalizations and disability for aging seniors. Frailty has been defined as a clinical syndrome that increases risk of poorer health outcomes for older adults. Criteria often include: slower walking, lower grip strength, low energy, low levels of physical activity or unintentional weight loss. In 2014, a 13 item survey with an additional grip strength measurement was piloted by CHA and community partners to try to identify seniors who were at risk for losing health reserves. Of Somerville adults 60 and older, 49.8% of females (n=253) and 65% of males (n=97) met the criteria for non-frail. Respectively, 37.9% of females and 27% of males were pre-frail and 12.3% of females and 8% of males were determined to be frail (CHA).



Older Adult Top 5 Causes of Hospitalizations and Deaths

TABLE 1: Top Causes of Hospitalizations (2010-2012)	Top 5 Causes Somerville	Age-specific rates per 100,000	Top 5 Causes Massachusetts	Age-specific rates per 100,000
Older Adult (65+years) All Causes in Somerville: n= 7,201	1. Endocrine: Diabetes Mellitus Related	9870.6	1. Endocrine: Diabetes Mellitus Related	8394.1
	2. Respiratory: COPD, All (Related)	9190.1	2. Circulatory System Diseases: All	7825.6
	3. Circulatory System Diseases: All	8287.5	3. Respiratory: COPD, All (Related)	7795.8
	4. Respiratory: Pneumonia and Influenza	4508.2	4. Respiratory: Pneumonia and Influenza	3756.5
	5. Digestive System Diseases: All	3518.7	5. Digestive System Diseases: All	3249.1

TABLE 2: Top Causes of Death (2010-2012)	Top 5 Causes Somerville	Age-specific rates per 100,000	Top 5 Causes Massachusetts	Age-specific rates per 100,000
Older Adult (65+ years) All Causes in Somerville: n= 1,017	1. Heart Disease	1047.4	1. Heart Disease	1074.1
	2. Lung Cancer	337.9	2. Lung Cancer	276.3
	3. Chronic Lower Respiratory Diseases	284.8	3. Cerebrovascular Disease	237.9
	4. Cerebrovascular Disease	220.0	4. Chronic Lower Respiratory Diseases	221.5
	5. Bladder Cancer	53.1	5. Alzheimer's Disease	187.7

Data Source: Uniform Hospital Discharge Data System Massachusetts Division of Health Care Finance and Policy, MDPH (MassCHIP).

The source file is maintained as a zip code based file; 3 year average estimates 2010-2012

Notes: Please note that within some groupings/classifications may overlap and be counted more than once within the rankings
Related includes secondary and primary diagnoses

Mental disorders are not detailed individually via MassCHIP

Chronic Obstructive Pulmonary Diseases (COPD) include: Bronchitis (chronic and acute); Emphysema; Asthma; Bronchiectasis; Axtrinsic allergic alveolitis and Pneumonitis

Circulatory System Diseases include: Rheumatic Fever; Rheumatic diseases of the heart and blood vessels (chronic and acute); Hypertensive diseases; Heart diseases; Cereobrvasular diseases; Diseases of blood vessels

Chronic Lower Respiratory Disease Includes: Chronic obstructive pulmonary disease with acute lower respiratory infection; persistent abnormal dilatation of the bronchi.

Digestive System Diseases: Diseases of oral cavity, salivary glands, jaw, esophagus, stomach, appendix, intestines, liver, gallbladder, pancreas

Heart Disease includes: Coronary heart disease, heart failure, ischemic heart disease, major cardiovascular disease, and acute myocardial infarction (NOT hypertension, atherosclerosis, and cerebrovascular disease)

Hospitalizations and Deaths

- The top five causes of hospitalization, as indicated in Table 1, were similar in Somerville and at the state level, though the rates were higher across all five causes for Somerville residents 65+ than statewide during these years (UHDDS).
- The top four causes of death for Somerville residents 65+ (Table 2) were consistent with statewide results, with higher rates of death due to lung cancer and chronic lower respiratory diseases in Somerville than at the state level during these years (UHDDS).

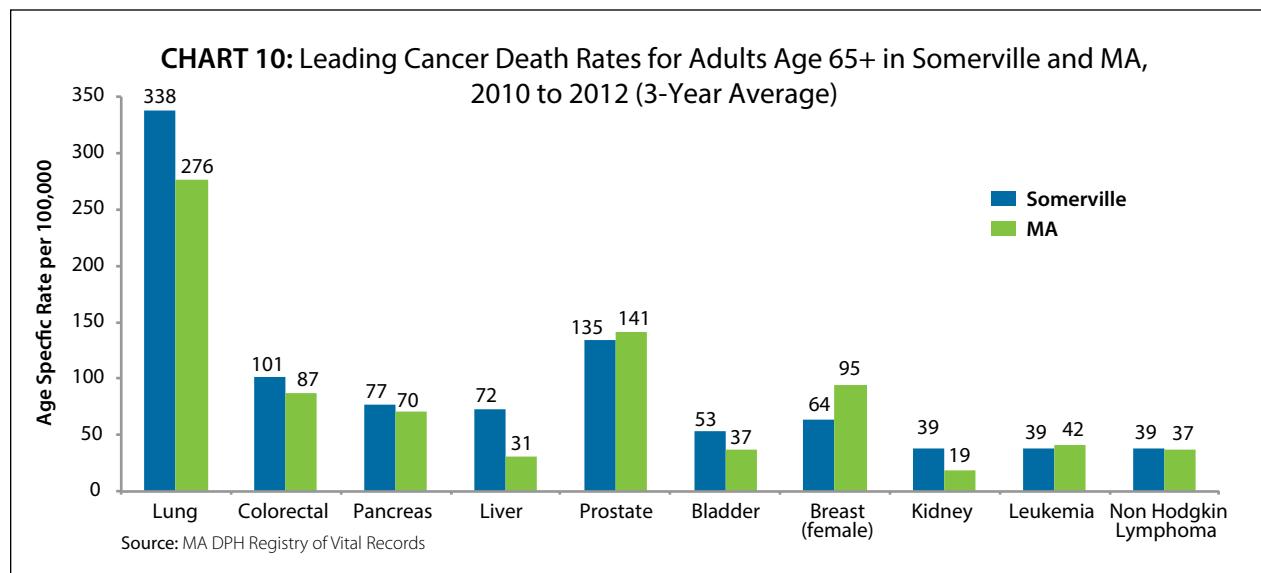
Cancer

Age is a risk factor for developing cancer, with a 10 times greater incidence of cancer in those 65 or older than younger age groups. It is estimated that as the population ages, cancer will outstrip cardiovascular disease as the leading cause of death nationally. In Somerville, cancer is the second and fifth top cause of death in those 65+ (UHDDS).

- Per Chart 10, from 2010-2012 (3-year average), lung cancer was the leading cause of cancer death in Somerville, significantly higher than the MA rate. Rates of colorectal, pancreatic, liver, bladder and kidney cancers were all higher than the state rates between 2010-2012.
- Additional data indicates that the incidence (new cases) of most cancers in Somerville has fallen since 2001. However, the rate of lung cancer diagnoses per 100,000 overall cancer diagnoses rose from a rate of 372.08 on average between 2001-2003 to 432.2 per 100,000 diagnoses on average from 2007-2009 (MA DPH, Registry of Vital Records).

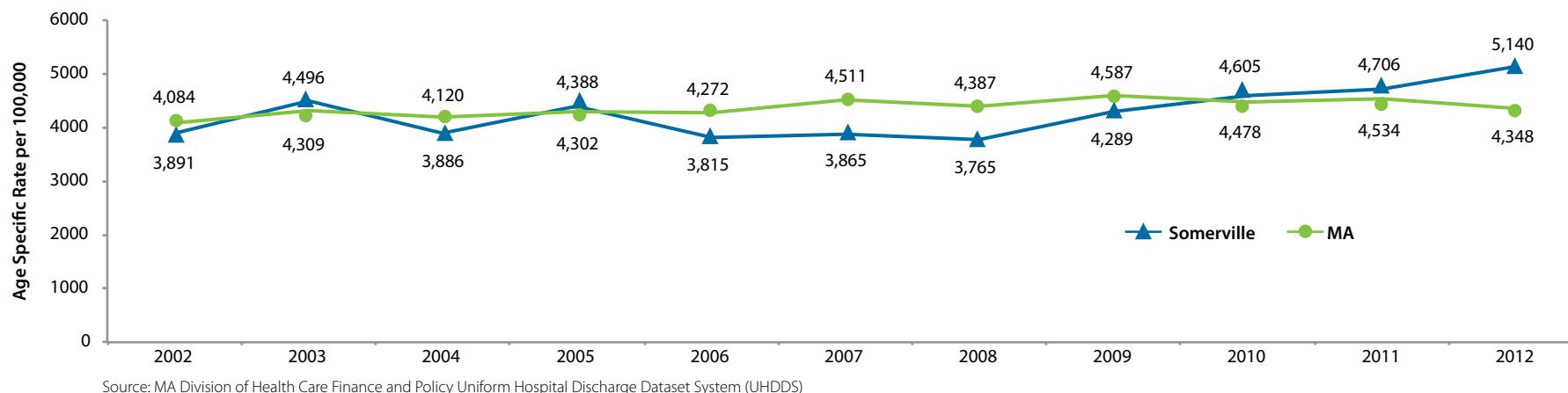
Falls

National statistics on falls and older adults indicate more than a third of people over 65 will fall each year and the risks increase with age. Falls are often associated with fractures and potential reduced mobility and/or independence and are the leading cause of injury deaths in older adults. Fear of falling also may reduce older adults' active participation in social and physical activities, creating greater risks for mental and physical



Age is a risk factor for developing cancer, with a 10 times greater incidence of cancer in those 65 or older than younger age groups.

CHART 11: ED Visits from Injuries Related to Falls for Adults Age 65+ (2002-2012)



Source: MA Division of Health Care Finance and Policy Uniform Hospital Discharge Dataset System (UHDDS)

health. Nationally, in 2014, 28.7% of older adults reported at least one fall in the past 12 months.

- As indicated in Chart 11, the rate of emergency department visits from injuries related to falls for adults 65+ has risen in Somerville since 2008. Surpassing the state 3-year average rates between 2010-2012, it was the second highest in the region after Chelsea. The actual count in 2012 was 355 ED visits for this Somerville age group due to falls (UHDDS).
- Other data shows that in both Somerville and MA, the rates of hospitalizations for falls for adults age 65+ showed a slight decline between 2004 and 2012. There was insufficient data on race/ethnicity for Somerville, though the MA rates are highest for Whites, followed by Hispanics.

Disability

National level data available from 2015 indicates that of the Somerville civilian noninstitutionalized population of this age group, 38.2% had any disability, with 61.8% having no disability (American Community Survey). The national measure of disability, at least one basic action

difficulty or one complex activity limitation, has risen for persons 65 and older over the past decade to 26.5% of the population based on 2015 data, with more U.S. females effected than males. African-Americans and those who identify as two or more races had higher levels of disability than Whites, Hispanics/Latinos, or Asians (U.S. Department of Health and Human Services). It is estimated that there is a greater than 60% probability that an adult over the age of 65 will become cognitively impaired or develop self-care difficulty of two or more basic daily functions in their lifetime.

Some studies using the Baltimore Longitudinal Study on Aging have indicated linkages between hearing impairment and dementia, though the results are not fully understood. Social isolation, due to hearing loss, may be a factor. This also potentially indicates possible intervention strategies to reduce cumulative impacts of multiple factors on an individual's health and wellbeing across life stages.

- The rates of ambulatory, self-care, hearing, vision and cognitive impairments for Somerville residents 65-74 and over 75 were both higher than the state percentages based on data available in 2014 (Dugan, Porell, and Silverstein, 2015).

Education

According to the Massachusetts Healthy Aging Community Profile (Dugan, Porrell, and Silverstein, 2015), 33.2% of adults 65+ had less than a high school education, higher than the state's 20.4%. The percentage

LIVING WITH A DISABILITY	SOMERVILLE	MA
% disabled for a year or more	30.6%	31%
Ambulatory impairment		
% 65-74 with ambulatory difficulty	18.8%	12.9%
% 75+ with ambulatory difficulty	33.8%	29.4%
Self-care impairment		
% 65-74 with self-care impairment	7.3%	3.7%
% 75+ with self-care impairment	12.9%	12.2%
Hearing Impairment		
% 65-74 with hearing impairment	9.6%	7.4%
% 75+ with hearing impairment	24.7%	21.2%
Vision Impairment		
% 65-74 with vision impairment	3.7%	3.2%
% 75+ with vision impairment	9.8%	9.3%
Cognition		
% 65-74 with cognition difficulty	5.6%	4.7%
% 75+ with cognition difficulty	14.5%	12.1%
Source: Massachusetts Healthy Aging Community Profile 2014		

of Somerville older adults with a college degree was 13.9%, lower than the state average of 25.1%. In an area like Boston that is saturated with higher education, the lower rates of both high school education and college degrees in the Somerville senior population could have influenced lifelong earning potential and wealth accumulation for many. The Somerville Council on Aging provides support for continued learning and informal education options. The public libraries, adult education classes at SCALE, and non-profits such as the The Welcome Project report seniors are consistently well represented in their English language classes.

Economic Stability

Lower education levels for over a third of Somerville seniors may have impacted economic opportunities over the life time of the 65+ population. According to 2015 American Communities Survey data, the percentage of Somerville households of individuals 65+ with an annual income of less than \$20,000 was 34.6% compared to 28.4% statewide. Of those 65 and older in Somerville, there were four main sources of income in 2015: 35.7% income (mean earnings \$59,873), 35.8% retirement income (mean of \$20,532), 85.5% income from Social Security (mean \$16,248) and 8.8% Supplementary Security Income (mean income \$8,626) (American Community Survey).

The full retirement age for Social Security benefits has been at age 65, but will be increasing gradually up to age 67, with an option for early retirement benefits at age 62, though this reduces the benefit amount by 25%. People whose work is physically demanding are more likely to retire earlier. According to the Economic Policy Institute, retirement savings for people approaching retirement in the U.S. peaked in 2007, with a drop in 2009/2010, with some increase since then to an estimated median of \$17,000, including 401(K)s, IRAs and Keogh plans. With the general rule of thumb being to save 20 times one's annual salary by age 67 to cover retirement costs, many residents will be increasingly reliant on government and social supports.

Poverty

American Community Survey data from 2011-2015 for Somerville indicates that the overall poverty rate was 14.7%. For residents 65 and older, the rate of poverty increased between 2010 and 2015 from 11.4% to 14.2%, which was higher than the Massachusetts rate for this age group at 9.2%. Poverty later in life creates particular vulnerabilities as individuals over 65 years of age often have very limited control over earning options and may also have limited or no control over housing options. Fixed incomes mean that a health crisis or other unanticipated expense can further burden a limited income. For some, this may include decisions about purchasing food, medication, or other basic needs.

Housing/Housing Stability

In the region, according to a 2017 Metropolitan Area Planning Council report on the state of equity, individuals aged 65+ are the most cost burdened renters and owners, with more than 30% of income going to housing. According to 2015 national American Community Survey data, adults 65 and older in Somerville are much more likely to be owner occupants (56%) than renters (44%) than the total population at 34% owners and 66% renters. Of renters, a higher percentage (47.3%) of 65+ adults in Somerville have more than 30% of their income going to housing than the total population (38.1%).

For those who have owned a house for decades, the prospect of selling to downsize might be attractive, but such owners are then faced with a low probability of finding affordable alternative housing in the city. It remains to be seen how the cost of housing will affect aging baby boomers who may desire to age in place. Reportedly, rental levels have seen some decrease since 2015 data was available, yet, it is unclear if this is enough change to make a difference for those looking to retire and have secure, stable housing in Somerville.

Elderly and disabled housing is available through the Somerville Housing Authority. Within Somerville there are five federal housing

locations and four state funded locations with a total of 700 units of affordable housing that can serve those 65+, with 95 units for people with disabilities. Additionally, there are four privately operated buildings serving the elderly/disabled in Somerville. The SomerVision goal of creating 1,200 permanently affordable housing units will be critical to help meet both the needs of aging boomers and young families wanting to stay in the city. In addition, there are 149 nursing home beds available in Somerville (compared to 47,990 nursing home beds in Massachusetts) at two locations, the Somerville Home (59) and Little Sisters of the Poor (90 beds total, 26 with skilled nurses and 64 residential). There are also two assisted living centers in Somerville, built and managed by the Visiting Nurses Association of Eastern Massachusetts, providing 198 units for elderly and disabled residents with affordable housing options, along with supportive services.

Employment

Of those 65 years or older in Somerville, 81.1% were not in the labor force as of 2015, with 18.8% employed (ACS). Multiple national reports indicate that since the early 1990s adults over 65 are remaining in the work market longer than in past decades. Self-reported poor health status is one of the strongest predictors of retirement, by some reports accounting for over 20% of retirement decisions. Access to financial benefits such as pensions, social security and Medicare also significantly impacts decisions about continuing to be active, or not, in the labor force. Today's older adults may have been negatively affected by the Great Recession, finding it necessary to work more years to counter losses in wealth accumulation.

Early baby boomers (those born between 1948 and 1953) generally expect to work at least one year longer than older cohorts. However, there are factors other than health and financial status that effect decisions to retire. Many boomers contend that they want to remain active and engaged, and for some, work meets that desire. For others, changes in life roles such as becoming a grandparent are a strong predictor of retirement; for women, this increases the likelihood of retirement by 8%.

Race, gender and education level factors seem to indicate that Blacks with poor health and women with less education are less likely to work past the age of accessing benefits. There is also a segment of the older adult population that would like to work, but face age discrimination following the loss of a job later in life. The majority of people follow a traditional course of fully retiring directly from full time work. However, increasingly, alternative pathways include moving to part time work or partial retirement and transitioning between these various states.

The Health and Retirement Study reported 43% of women and 50% of men who retire return to work again. The desire to be a part of the larger community and to be socially engaged, as well as the financial incentive, can all be part of why older adults may return to work post traditional retirement (University of Michigan, 2017).

Food Security

Age, as with income, is a key risk factor for food insecurity. Residents 65 years and older may increasingly be in the position of having to decide between housing costs and purchasing food or medicine. This is especially alarming for this age group when there are more chronic diseases that have links to nutrition such as Diabetes Mellitus or cardiovascular disease. Data from the Massachusetts Department of Transitional Assistance SNAP enrollment for December 2016, showed that nearly 1,500 residents over the age of 60+ utilized SNAP and were 27% of the total SNAP clients during this timeframe. Somerville Cambridge Elder Services (SCES) is an agency that works to address food security among seniors, providing Meals on Wheels, distributing senior farmers' market coupons, providing nutritional classes and counseling and partnering with the Council on Aging to host LGBT cafes. In collaboration with the Greater Boston Food Bank, both the Somerville Council on Aging and Somerville Cambridge Elder Services coordinate regular food distribution programs for seniors and people with disabilities.

Natural and Built Environment

Housing (safe, affordable and accessible)

Many seniors may have lived in their units for many years, and these units may be in need of upgrading for safety. Home modifications, such as shower bars, can help those 65 and older to age in place more safely and prevent falls and injury which can trigger significant changes in wellbeing and independence. Hoarding, or compulsive clutter, is a growing issue among older adults that can impact home safety.

Safe and Secure Neighborhoods

Police data indicates that crime in Somerville has been generally decreasing. Of all the arrests in the city in 2016, only .014% were people over the age of 61 (Somerville Police Department). More often, this age cohort may be victims of crime, especially scams targeting the elderly. Older adults in need of assistance with financial management who lack a trustworthy relative or friend may be particularly vulnerable to fraud, yet may not report it due to feelings of shame, a desire for independence or lack of awareness either that such fraud occurred or how to report it. Somerville Cambridge Elder Services provides trained volunteers to offer money management support for seniors as a preventative intervention.





Transportation

The high scores that Somerville earns on national measures of walkability, public transit and bikeability are attractive to older active adults. Attention to universal access, with curb cuts and well-marked crosswalks also contribute to safety for all ages, including seniors. As the onset of disabilities increases with age, transportation can become more challenging and less accessible; older adults report transportation as one of their top areas of need, according to surveys by the Somerville Cambridge Elder Services. Transportation supports for this life stage include a range of community resources such as subsidized shuttles, companions to attend medical appointments and special rates for public transportation passes. The City of Somerville waives parking permit fees for older adults. A number of residents over 65 are driving their own cars for transport: Between June 2016 and July 2017, the City's Traffic and Parking Department issued 4,337 senior resident permits. There were also 127 handicapped reserved parking signs in place at residential addresses in the same time period; although they may not all be for seniors.

Environmental Health and Climate Change

Elderly residents often have greater physical limitations during a climate event. These limitations include higher overall health vulnerability, such as greater susceptibility to extreme heat and impacts from

poor air quality and insect-borne diseases, among other illnesses. As a result of some of these vulnerabilities, older individuals – across all income brackets – have a greater reliance on support services, including senior centers and cooling centers during high heat events. Elderly residents that live alone may be more socially isolated and lack reliable access to transportation, which can make it more difficult for them to access support services or evacuate during emergency events. The City of Somerville currently provides transportation to seniors and disabled residents during storm events and high heat days; climate change is likely to increase demand for these types of services as such events become more frequent.

A concerning and rapidly evolving environmental issue is climate change. A report by the National Resources Defense Council claims that there will be thousands of deaths due to heatwaves by the 2100s related to climate change, specifically in urban areas. Exposure to intense heat can lead to many health complications including heat exhaustion and dehydration and can trigger heart attacks and stroke (Constible, 2017). The most recent data available from MA Environmental Public Health Tracking indicates that in 2012, 102 Massachusetts residents were hospitalized for heat stress, with over half of those adults 65 and older.

The heat index is a standard measure that includes both temperature and humidity. When the heat index rises to 104, health impacts occur due to the inability of the human body to function when internal temperatures reach that level. Globally, more deaths due to heat have been reported in those over 75. Income inequality magnifies the negative impacts for low income elders, many who live alone, making them higher risk.

Exposure to poor air quality, which is impacted by heat, traffic pollution and rising pollen levels, can be linked to cardiac and lung problems, as well as cognitive and memory issues in seniors, altering quality of life, as well as longevity. Older adults, especially frail or immune compromised adults, may also be more at risk for the increasing presence of insect borne diseases such as West Nile virus.

Social and Community Context

Race

The race/ethnicity distribution of this age group in Somerville, according to 2015 government estimates was: 88.8% White, 5.6% Black or African-American, 4.7% Asian, and 3.6% of Hispanic or Latino origin (of any race). According to a PEW report, Black adults over fifty have the worst perception on race relations in the US, with 65% believing that relations are “generally bad,” compared to 58% for those who are 18-50 (Wormald, 2016).

Social Inclusion

Metro Boston is becoming more economically segregated and potentially less inclusive. The region’s poorest households are becoming more concentrated into low income neighborhoods (State of Equity, 2017). For older adults, immigration status can impact socialization, with 29.5% of Somerville residents over 65 estimated to not have U.S. citizenship. The vast majority, 92.5%, of immigrants over 65 entered the US before 2000, with 2.2% arriving later than 2010. The language spoken at home is English for 68.3% of Somerville residents 65 or older, with 23.4% speaking English less than “very well.” There is also an aging LGBT population in the city. Several of these factors can increase social isolation or feelings of exclusion.

Social Safety Network/Social Support

Social isolation is a recognized risk factor for all ages, but is particularly recognized as a factor in the health of older adults. Isolation may be due to changes in social status such as loss of a life partner due to death, visual or hearing impairment, limited English proficiency or other trigger events that impact one’s physical or psychological ability to connect with other people causing a loss of social network or group belonging. There is a strong correlation between health and isolation.

In 2015, an estimated 42.5% of Somerville residents 65 or older were married, 27.7% widowed, 11.8% divorced and 16.4% never married. Additionally, 54.4% of older adults in the city lived alone, with 11.7% of



females living with family with no husband present. 6.8% of older adults are living with grandchildren, while 1.9% are responsible for parenting grandchildren. A significant number of this age cohort are veterans, at 14.1% (ACS).

Up to three quarters of the older population are predicted at some point to need long term care that ends up being provided by family or friends. Women are more likely to need such care, partly due to longer life expectancy. The stress of serving as caretaker for a partner with a disability can significantly increase the risk of stroke for the caregiver. The impacts of such stress are stronger for men than women. Creating systems of supports for both isolated older adults and those caring for loved ones may help decrease the negative impacts of related stressors. Family caregiver supports are available through organizations such as Somerville Cambridge Elder Services.

Violence (Domestic Violence, Sexual Abuse)

The CDC defines Elder Abuse as “an intentional act, or failure to act, by a caregiver or another person in a relationship involving an expectation of trust that causes or creates a risk of harm to an older adult.” This can be physical, sexual or emotional and can include neglect by a caretaker or financial exploitation. In the U.S. it is estimated that 10% of older adults are victims of abuse, though it is generally very under reported. The Elder Protective Services Program of Somerville Cambridge Elder Services can assist adults 60 or older with a range of supports including legal assistance, planning for harm reduction, in-house assistance and preventing loss of one’s home.

Community and Civic Engagement

Historically, Somerville older adults tend to be civically engaged in terms of consistent voter turnout. In the 2016 November election, 75% of all eligible voters participated in Somerville. This is in contrast to a low of 14% voter turnout for the Municipal Elections in 2015. Though millennials have a larger voting group by population, it remains to be seen if they can rival the engagement of seniors.

The City has a long history of residents actively participating in civic life, identifying or addressing public issues of concern. Increasingly, new retirees are turning up as volunteers in programs ranging from the



Council on Aging, the public schools, English language classes and in affordable housing and other social justice initiatives. Regionally, there are organizations such as the MA Senior Action Council, run by seniors to advocate and empower members to address key policy issues that affect health and wellbeing. Studies indicate that active participation in civic life by seniors increases longevity.

End of Life

A 2017 report stated that only 30% of U.S. adult residents have created an advance directive that outlines their health care wishes. Typically, this would be two documents. The first is a document that communicates an individual's wishes about end of life care; examples include Medical Orders for Life-Sustaining Treatment (MOLST), Living Will or Five Wishes. The second is a document stating the designated person to make decisions if the individual is unable to do so; in the state of Massachusetts this is known as a Health Care Proxy. Numerous documents are available in 10 languages on the state's website under “End of Life Care.”

Palliative care addresses the physical, emotional and spiritual needs of someone who is experiencing serious illness, helping to support someone who may be undergoing active treatment. It is about helping to coordinate care, symptom relief, support and assistance with appropriate planning and decision making.

Hospice care is a choice for those who are facing the end of life, providing support and comfort for an individual and their family. Nearly 50% of Medicare recipients that died in 2014 had received end of life care from hospice, an increase greater than 20% since 2000 (Price et al., 2017). This care is not about extending one's life, but about making one's remaining time comfortable and meaningful and assisting with care at the end of life.

Recommendations for Older Adult

Ages 65+

- **Increase access to health promoting resources for older adults**
 - Establish physical or online networking tools for seniors to access health resources, self-care and self-advocacy training
 - Increase access to self-care and health advocacy tools, especially for English language learners and low income older adults
 - Offer senior health information, free health screenings and flu clinics in a range of community venues
 - Expand stroke prevention information and knowledge of warning signs of stroke
 - Promote a culture that supports life balance and improved self-care for caregivers
 - Support home modifications for seniors to improve safety and security, exploring links with community based providers
 - Promote strategies for individuals and family members to expand end of life planning and support increased utilization of advanced care planning supports available through Medicare
 - Expand cost saving opportunities for elderly, including tax policies, as well as providing money management supports
 - Improve data collection and tracking efforts for health and wellbeing for older adults



- **Facilitate a community with strong social networks and support systems for older adults**
 - Mobilize seniors as advocates for needs identified by community's seniors and senior stakeholders
 - Promote options for intergenerational social events, to build connections across life stages
 - Explore paths to citizenship for older adults, who may qualify for exemption from English Language Requirement in the citizenship and naturalization process, depending on age and time in the U.S.
 - Create programs aimed at reaching isolated seniors, such as non-English speakers or homebound residents, to improve social connections, mental health and safety
 - Explore social networks for those living alone and/or related alternative housing options to support older adults continuing to live in the community and address housing needs

■ **Support increased physical activity and healthy eating opportunities for older adults**

- Host senior Charlie Card events at Somerville Council on Aging and/or Somerville Cambridge Elder Services
- Expand opportunities for age and mobility appropriate exercise
- Promote culturally appropriate diabetes management supports, especially for sub-populations with higher rates of related healthcare utilization
- Collaborate with regional efforts to address food security in seniors

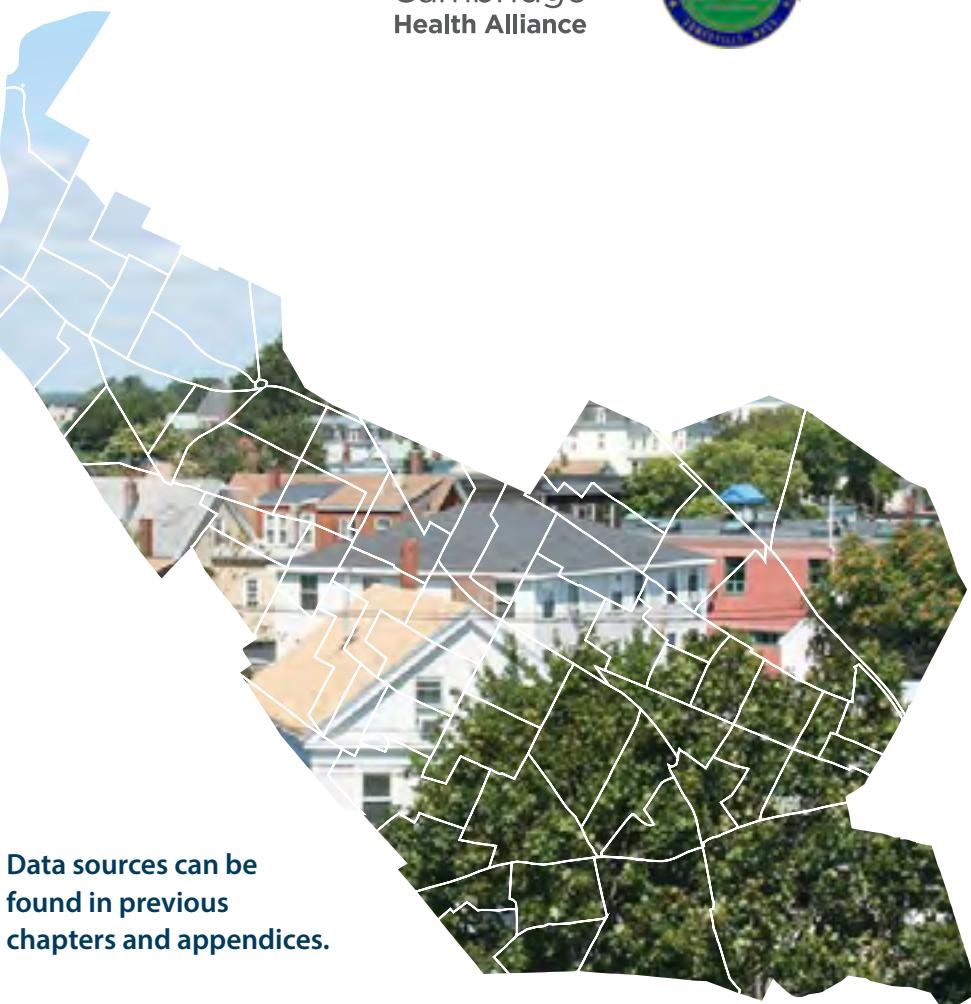


■ **Create lifelong habits to promote mental health and substance use prevention**

- Offer programs related to substance use prevention specific to an aging population, and provide opportunities for peer networking
- Explore links between isolation, mental health and substance use in older adults

The Wellbeing of Somerville Report

2017



Data sources can be found in previous chapters and appendices.

Data Summary

Somerville is a densely populated city adjacent to Boston, Massachusetts, with an estimated 81,322 people in 4.1 square miles.

Who lives here?

- The population is young, with a median age of 31.3 years. Over 32% of the population is 25-34 years of age, one of the largest such populations per capita of young adults in the country.
- Somerville continues to be a community of immigrants. Only 75.3% of residents are native born, compared to the state average of 93%. The top five countries of birth for foreign born residents are Brazil, Portugal, China, India and El Salvador.
- The school population of 4,931 students has a higher diversity than the overall population, with 36.5% White and 43% Hispanic/Latino. Language diversity is also prevalent with 26.7% of students speaking Spanish at home, 9.3% Portuguese and 12% other languages.
- People with a disability comprise 8% of residents, with the highest percentage (38%) among residents 65+.
- An estimated 2,147 Veterans live in the City; 11.4% are under the age of 35 and 14.1% are 65+.
- Somerville residents are responsible for 1,732 licensed dogs in Somerville, as of 2017.

What do we know about the context of residents' lives?

► Education

- The percentage of residents who are high school graduates or higher is 89.3%; 10.7% of Somerville residents over the age of 25 do not have a high school diploma or equivalency.
- The percent of the Somerville population over the age of 25 who had obtained a graduate or professional degree rose by 12% between 2010 and 2015.
- The Somerville district 4-year high school graduation rate in 2016 was 81.5%, while the state graduation rate was 87.5%. The adjusted 4-year graduation rate, which excludes transfers into the district, is higher than the state at 87.9% compared to state rate of 84.6%.
- The 2015-16 Somerville dropout rate across all grades was 1.9%, half the rate in the prior year (3.7%).



► Economic Stability/Income

- The median income for Somerville is \$73,106, an increase of 16% from 2006 to 2015. Based on the actual cost of living in the Greater Boston area, a single adult needs a minimum income of \$27,040 and two working adults with two children need to earn \$71,843 to meet basic needs.
- Of the total population, 14.7% percent of residents live in poverty; 22.7% of children under 18, 14.2% of people 65 and over and 43.2% of families with a single female head of household had incomes below the poverty level. The city poverty rate is higher than the Massachusetts average.
- Of community members living in poverty, 11.8% identified as White, compared to 19% as Asians, 26% as Hispanic/Latino, and 36.6% as Black/African Americans, based on data available through 2015.





►Health care coverage

- In Somerville, as of 2015, residents ages 35-64 were the least likely to have health insurance, with 6.1% having no health coverage, higher than the state level for this age range.
- Of Somerville residents who had MassHealth insurance coverage, 54.7% lived in zip code 02145, 27.2% in 02143 and 18% in 02144.

►Housing

- Somerville has 33,720 housing units, 65.2% were built prior to 1940.
- Rental units comprise 66% of the housing units with 34% of units occupied by the property owners.
- The Somerville Housing Authority owns and manages subsidized housing including 674 family units and 782 elderly units, as well as Section 8 housing.
- Since 2000, single-family home sales have increased in price by 112% (30.5% since 2012) while median rent increased by 43%. The average market rate rent in 2015 was \$2,567 for a two-bedroom apartment,

an amount requiring a household income of around \$90,000 to keep housing expenses within the recommended 30-40% of total income.

- As of 2015, 39.1% of renter households in Somerville were rent-burdened, defined as households paying more than 30% of gross income towards housing. Just over thirty eight percent of owner households were cost-burdened.
- The City's SomerVision Comprehensive Plan for 6,000 new housing units by 2030 includes an additional 1,200 permanently affordable units.

►Food Security

- In 2015, 9.3% of Somerville's 32,000 total households received some SNAP benefits, an increase of 4.9% from 2010.
- It is estimated that of those who are income eligible for SNAP, 61% are not enrolled in the program, referred to as the SNAP gap.
- In 2016, for the first time, the Youth Risk Behavior Survey in Somerville addressed food insecurity, with 9.4% of high school students responding that they had gone hungry; 18.2% of those identified as Haitian Creole speakers and 10.3% of Spanish speakers were food insecure.

►Safety and Security

- Somerville has been a Sanctuary City for 30 years, a municipality that does not prosecute undocumented immigrants for violating federal immigration laws.
- Somerville data indicates that overall crime is decreasing, with 739 arrests in 2016 compared to 967 in 2010. The overall crime rates in Somerville are 20% lower than the U.S. rates, based on 2015 data.
- In 2016, there were 198 domestic assaults recorded in Somerville for all ages, with 18% involving juveniles.

► Employment

- Unemployment is low at 3.7%. 80% of working Somerville residents are employed in jobs outside the city.
- Compared to 19.8% of nondisabled adults over 18, 64.1% of disabled adults in Somerville were unemployed.

► Transportation

- Somerville commuters are almost three times as likely to use public transportation to commute and more than twice as likely to walk or bike as the state rate and notably less likely to drive alone than the Massachusetts or U.S. average.
- Somerville's Walk Score of 86/100 is the second highest in the state. The Transit Score is 62/100.
- Public transportation will be enhanced by the extension of the Green Line and the Community Path, yet public transit will remain limited for north-south travel.

► Environmental Health

- The Mystic River was awarded water quality ratings of A- for swimming and boating safety measures.
- Close proximity of Somerville neighborhoods to two major state highways is linked to increased exposure to air pollution.
- In Somerville, 57 units of Somerville housing have been de-leaded since 2012 in partnership with Federal grants.



► Open Space and Access to Nature

- There are roughly 158 acres of publicly-accessible open spaces within Somerville, only 37% city-owned.
- This represents 6% of the City's land area and translates to roughly 2 acres of open space for every 1,000 Somerville residents.

► Community Engagement

- In the 2016 presidential election, Somerville had 54,360 registered voters with 40,874 votes cast, a 75% turnout.
- In February 2017, over 4,000 people attended the ONE Somerville rally.

► Prenatal/Early Childhood

- In 2016, of the total births, 61.6% of Somerville births were to mothers who identified as White (non-Hispanic), 16.2% Hispanic/Latino, 13.3% Asian and 5.7% Black (Non-Hispanic). In 2015, over one fifth of mothers were unmarried.
- In 2015, the percentage of children who were born premature was 10.3% in Somerville (90 of 876 births) and 10.4% of all births to Somerville mothers were reported to be low birth weight (91 out of 876).
- The teen birth rate in Somerville has declined since a peak in 2007-2009, to 7.0 per 1,000 live births or 12 babies born to teens ages 15-19 in 2015, with highest rates among Hispanic/Latino teens.
- For Somerville new mothers, the intention to breastfeed, based on response at time of birth, varied by age of mother with lower rates for

teen mothers (78.6%) and higher rates for mothers over 30 years (94.3%) between 2011-2013.

- Between 2013-2015, of the 1,101 CHA patients aged 2-5 years who lived in Somerville who had an office visit where height and weight were measured, 32.2% of the children were overweight or obese.
- Between 2010 and 2016, the percentage of births to Somerville mothers with some post high school level education increased from 32.3% to 44.8%, while the percentage with less than a high school or high school only education background decreased from 31.4% to 12.8%.
- Of students entering Kindergarten in the Somerville Public Schools for the 2017-2018 school year, 93% had early education and/or care experience.
- Costs of early care and/or education vary greatly, ranging from an average of \$25,000 per year for infants to \$16,000 for preschool age children.



► School Age/Adolescent (6-18 years)

- Between 2010-2017 school years, the Hispanic/Latino student population increased from 35.9% to 43.0% to become Somerville Public Schools largest ethnic group.
- The English Language Learners population in Somerville grew from 16.0% in 2010 to 19.2% in 2017, compared to 9.5% of MA students in 2017. The percentage of Somerville students' whose first language was not English, at 49.3%, was more than double the percentage at the state level.
- In the 2016-2017 school year, 60.2% of Somerville students were classified as high needs, higher than the 45.2% state average.
- Among 2015 graduates of the Somerville school district, 70.7% attended college.
- In 2016, 31.2% of Somerville high school students felt depressed, defined as feeling sad or hopeless almost every day for two weeks or more in a row, at some point during the prior 12 months.
- In 2015, 12.2% of all Somerville middle school students self reported seriously considering suicide; the rate was 16% among Hispanic/Latino students.
- Among Somerville high school students, 7.9% of students engaged in binge drinking in the 30 days prior to being surveyed, continuing a downward trend since the 2002 rate of 26.3%.

Between 2010-2017, the Hispanic/Latino student population increased from 35.9% to 43.0% to become Somerville Public Schools largest ethnic group.



- A decrease in trend data since 2010, 12.9% of Somerville 9th graders reported substance use, including marijuana or alcohol, in the past 30 days for 2016.
- In the 2016-2017 school year, of a total of 1,439 Somerville students measured in grades 1, 4, 7 and 10, 18.5% were considered overweight and 24% obese, showing slight decreases from last year but still higher than the state rates of 16.0% and 15.3%, respectively.
- Between 6th and 12th grades there was an 80% decrease in the number of Somerville students reporting that they get 8+ hours of sleep, on average, with a decrease in high school students from 29.2% getting at least 8 hours of sleep in 2012 to 26.4% in 2016.
- Of the 274 Somerville high school students who reported having ever had sexual intercourse in 2016, 44.4% had been sexually active by age 14.
- In 2016, 60.4% of sexually active high school students reported using a condom the last time they had intercourse, a 15.4% drop from 2014.



- In the 2016-17 school year, 352 students enrolled in the district had an asthma diagnosis, representing 7.1% percent of the district's students.
- In Somerville in 2014 and 2015 respectively, 29% of high school students and 24% of middle school students reported that they lived in a household in which there was a smoker other than themselves.
- During the 2016-2017 school year, 94 students who attended Somerville Public Schools reported experiencing homelessness.
- Of 2016 Somerville High School students, 80% had an adult outside of school they feel they can talk to and 64.4% had an adult in school with whom to talk.
- Among the 282 high school students reporting they witnessed bullying in school in 2016, 44% of students did nothing and 3% joined in.
- In Somerville, 15.2% of Black middle school students worried during 2014-15 about being treated differently based on their race or ethnicity.
- Non-domestic violent incidents, including robbery and assault, involving youth decreased from 52 in 2010 to 31 in 2016.

► Early Adult (18-24 years)

- Trends in rates of emergency department visits for mental health for this age have been higher for Black, non-Hispanics.
- From 2014-2016, 13% of fatal narcotics overdoses and 22% of non-fatal overdoses in Somerville were among people aged 16-25.
- Arrests of 16-20 year olds in Somerville have decreased dramatically from 151 in 2010 to 69 in 2016.
- More than 20% of Somerville adults over 18 had no leisure time physical activity and only 28.5% of males and 37.5% of females reported eating five or more servings of fruits and vegetables in a day.
- In 2016, 59 women in this age group residing in Somerville gave birth; a 25% decrease from 2012, when there were 79 births in this cohort.
- There has been an overall increase in the rate of new cases per year of chlamydia, gonorrhea and syphilis among all Somerville residents since 2005. The incidence (new cases) rate of each of these three sexually transmitted infections more than tripled between 2005 and 2015 and the most currently available data indicates they are occurring at higher rates in Somerville than statewide.



► Young Adult (25-39 years)

- Rates for mental health related emergency department visits for young adults ages 25-39 in Somerville were 71% higher for males than females (2010-2012).
- Black young adults had the highest rate of mental health hospitalizations in this age group, between 2010 and 2012.
- Between 2010 and 2012, there were 12 suicides among young adults (25-39), the most of any adult life stage.
- Heroin was the most commonly used substance among 25-29 year olds in Massachusetts admitted to treatment in 2013, while alcohol ranked second.
- In the 25-40 age group, there was an average of 27 confirmed or probable cases of hepatitis C over the three years between 2013 and 2015.
- Asthma and other respiratory diseases were among the top five causes of hospitalization for this age group (2010-2012).
- Non-fatal overdoses for narcotics increased from 96 in 2010 to 191 in 2016. Fatal overdoses for narcotics rose from 3 in 2010 to 21 in 2016, with the sharpest increase starting in 2014. More recent 2017 data indicated these trends have shown decreases in Somerville.

Somerville's population is young, with a median age of 31.3 years. Over 32% of the population is 25-34 years of age, one of the largest such populations per capita of young adults in the country.





► Middle Adult (40-64)

- Substance abuse treatment admission rates specifically for heroin in Somerville among residents age 50-54 were twice as high in 2012 than Massachusetts rates; alcohol was the second substance related to medical intervention.
- Rates of diabetes related emergency department visits for Somerville adults ages 40-64 were higher among Blacks and Hispanics in the 2010-2012 period. The rates for Black adults were slightly higher than the state average, as well as surrounding communities, accounting for 227 visits.
- Trends for COPD related emergency department visit rates steadily rose for all races in Somerville between 2004 and 2012.
- For the middle adult age group, the incidence (new cases) of HIV infection in 2015 was 109.43 per 100,000 with 15 new cases, a rate that is more than twice as high as MA overall; this age group accounts for over 66% of all Somerville residents living with HIV.
- For Somerville adults of this age, the leading cause of cancer death in the years 2010-2012 was lung cancer, though deaths due to female breast cancer were at a rate higher than the state.
- Heart Disease was the top cause of death for middle adults in Somerville and MA overall between 2010 and 2012.
- In the 45 to 64 age group in Somerville, 84.8% have a high school degree or higher, with only 33.6% with a Bachelor's degree or higher, notably half the rate of college degrees of the 35-44 age cohort.

►Older Adult (65 and over)

- The race/ethnicity distribution of this age group in Somerville, according to 2015 government estimates was: 88.8% White, 5.6% Black or African-American, 4.7% Asian and 3.6% of Hispanic/Latino origin (of any race).
- Of Somerville residents 65+, an estimated 29.5% do not have U.S. citizenship, 92.5% of whom entered the U.S. before 2000 with 2.2% entering since 2010.
- The language spoken at home is English for 68.3% of Somerville residents age 65 or older, but 23.4% report speaking English less than "very well."
- Of the Somerville noninstitutionalized population in this age group, 38.2% had any disability and 61.8% had no disability, as of 2015.
- Black and Hispanic/Latino adults 65+ had the highest mental health related emergency department visit rates of all races, and Asians had the lowest.
- The age-specific rate of alcohol/substance related emergency department visits for adults age 65+ in Somerville was higher for both Whites and Blacks than the state. Black (Non-Hispanic) rates were dramatically higher than White rates.
- Self-reported satisfaction with life was high both among Somerville older adults and across the state, both at 95.8%.
- Diabetes Mellitus has been the leading cause of hospitalizations for residents 65 and older in both Somerville and the state as a whole. Between 2010-2012, Hispanics/Latinos and Blacks had the highest rates of hospitalizations among this age for Somerville residents.
- Data from 2004-2012 on cardiovascular health indicates health disparities. Hispanics/Latinos had the highest rate of cardiac related hospitalizations.
- Rates of stroke related hospitalizations for Blacks and Hispanics/Latinos 65+ in Somerville, were higher by 33.0% and 37.4%, respectively, than Somerville Whites or the respective MA rates.
- Lung cancer was the leading cause of cancer death in Somerville, significantly higher than the MA rate.
- The percentage of Somerville older adults with a college degree was 13.9%, lower than the state average of 25.1%.
- Poverty rates for this age group increased between 2010 and 2015 from 11.4% to 14.2%, higher than the Massachusetts rate for this age group at 9.2%. The percentage of Somerville 65+ households with an annual income of less than \$20,000 was 34.6% compared to 28.4% statewide.
- Adults 65 and older in Somerville are more likely to be owner occupants (56%) than renters (44%) than the total population (34% owners and 66% renters). Of renters, a higher percentage (47.3%) of 65+ adults in Somerville spend more than 30% of their income on housing than does the total population (38.1%).
- 2016 data indicated nearly 1,500 residents over the age of 60+ utilized SNAP and were 27% of the total SNAP clients at that time.
- Close to 60% of residents over 65 drive their own cars for transport; in the year June 2016 through June 2017, the City's Traffic and Parking Department issued 4,337 senior resident permits.
- In 2015, an estimated 42.5% of Somerville residents 65 or older were married, 27.7% widowed, 11.8% divorced and 16.4% never married.
- 54.4% of older adults in the city live alone, with 11.7% of females living with family with no husband present. 6.8% of older adults are living with grandchildren, while 1.9% are responsible for parenting grandchildren.

Acknowledgments

Who created The Wellbeing of Somerville Report 2017?

This report is the result of contributions from across the city of Somerville. It has been shaped through the feedback of community members, agencies and service providers, municipal employees, clinical staff and public health workers and academic interns.

The coordination of the effort is led by the Somerville Community Health Agenda of the Community Health Improvement Department at Cambridge Health Alliance in collaboration with the City of Somerville Health and Human Services Department, with data support from the Institute of Community Health. This report is the result of collaboration and contributions from a broad group of partners who participated in discussions and/or focus groups to select data points of interest and importance to the community of Somerville. In developing this report, partners also assisted with collecting and analyzing secondary data related to public health from a variety of lenses.

Community stakeholder groups for focus groups and feedback included such organizations as the By All Means Community Cabinet, Early Childhood Advisory Council, the Immigrant Service Providers, Shape Up Somerville Steering Committee, Somerville Youthworkers Network and an informal gathering of Somerville Senior Providers. These sessions provided valuable insights and feedback, as well as provocative questions to help direct exploration of data and recommendations. Over 80 community members who spent an evening together in late April 2017 also

helped to provide diverse perspectives on the most pressing issues impacting the health of Somerville residents across the lifespan and recommendations to improve the health of all residents.

Agency and community partners also served as readers and editors, to insure both accuracy and accessibility of the data and information contained in the report. In addition, many talented and dedicated academic interns from local universities assisted with the development of this report, from reviewing progress on all the recommendations from the 2011 report to final editing assistance.

Disclaimer

The content is solely the responsibility of the authors and does not necessarily represent official views of these agencies. This report is an ongoing effort to reflect some community-defined indicators that relate to health broadly defined. This report also highlights a range of data sources, including data from the Massachusetts Department of Health and Youth Risk Behavior Survey data collected from Middle and High School students.

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Appendix A: Data Resources

Some data sources are available to the public online and are linked in the web version of Appendix A, while others were provided by local agencies for the purpose of this report.

Demographics

American Community Survey, United States Census Bureau	2006-2015	The Kaiser Family Foundation, Health Insurance Coverage of Children 0-18	2015
Massachusetts Department of Elementary and Secondary Education, Profiles	2010-2017	Living Wage Calculator, Boston-Cambridge-Newton. Livingwage.mit.edu	2017
United States Department of Labor, Bureau of Labor Statistics	1990-2016	Massachusetts Department of Public Health, MA Births State Report	2015
Massachusetts Department of Labor and Workforce Development	2016	Massachusetts Department of Public Health, Registry of Vital Records and Statistics, Bureau of Health Statistics, Research and Evaluation	2015
Massachusetts Department of Public Health, Registry of Vital Records and Statistics Bureau of Health Statistics, Research and Evaluation	2017	Massachusetts Department of Public Health, Uniform Hospital Discharge Data System, Division of Health Care Finance and Policy	2012
The Greater Boston Housing Report Card	2009-2015	Massachusetts Pregnancy Risk Assessment Monitoring System	2011
		Project Bread, 2015 Status Report on Hunger in Massachusetts, Projectbread.org	2015
		Somerville Police Department	2010-2016
		Somerville Public Schools	2017

Prenatal/Early Childhood

American Community Survey, United States Census Bureau	2006-2015	The State of Obesity, Adult Obesity in the United States Stateofobesity.org	2016
Cambridge Health Alliance	2016-2017	The State of Obesity, Obesity Among WIC Participants Age 2-4, 2000-2014 Stateofobesity.org	2016
Community Action Agency of Somerville, Somerville Head Start	2016	US. Census Bureau, Poverty Thresholds	2017
City of Somerville Data Farm, Raise a Family, Somervillema.gov	2014	Youth Risk Behavior Survey, Somerville High School Health Survey	2006-2016
Data Resource Center for Child & Adolescent Health, National Survey of Children with Special Healthcare Needs	2010		
Food Bank of Western Massachusetts, MA SNAP GAP	2017		

Adolescent/School-Aged

American Community Survey, United States Census Bureau	2006-2015	Somerville Public Schools	2015-2016
Association of Maternal & Child Health programs, Life Course Indicators Online Tool	2014	The UN Refugee Agency (UNHCR), Children on the Run	2014
Cambridge Health Alliance	2014-2017	Youth Risk Behavior Survey, Somerville High School Health Survey	2006-2016
Centers for Disease Control, Adolescent Health	2017	Youth Risk Behavior Survey, Somerville Middle School Health Survey	2003-2015
Data Resource Center for Child & Adolescent Health, National Survey of Children with Special Healthcare Needs	2010		
Department of Children and Families, Cambridge/Somerville	2016		
Food Bank of Western Massachusetts, MA SNAP GAP	2017		
Massachusetts Department of Elementary and Secondary Education, Profiles	2010-2017		
Massachusetts Department of Public Health, Current Statistics (Overdose Deaths Data)	2017		
Massachusetts Department of Public Health, MA Births State Report	2015		
Massachusetts Department of Public Health, The Status of Child Weight in Massachusetts	2014		
Massachusetts Department of Public Health, Uniform Hospital Discharge Data System, Division of Health Care Finance and Policy	2012		
Massachusetts High School Youth Risk Behavior Survey (MA YRBS)	2006-2015		
Massachusetts Youth Health Survey	2015		
Office of Disease Prevention and Health Promotion, Healthy People 2020 Topics and Objectives	2008-2015		
Somerville Department of Health and Human Services	2015-2016		
Somerville Police Department	2010-2016		

Early Adult

American Community Survey, United States Census Bureau	2006-2015
Center for Disease Control and Prevention, 500 Cities Project: Local Data for Better Health	2017
Food Bank of Western Massachusetts, MA SNAP GAP	2017
Massachusetts Department of Elementary and Secondary Education, Profiles	2010-2017
Massachusetts Department of Public Health	2016
Massachusetts Department of Public Health, Community Health Information Profile Diabetes Risk Factors	2005-2013
Point in Time Count, Somerville Continuum of Care, 1/25/2017	2017
Somerville Fire and Police, COHR Narcotics Misuse Master Database	2014-2016
Somerville Police Department	2010-2016
Uniform Hospital Discharge Data System, Massachusetts Division of Health Care Finance and Policy, Massachusetts Department of Public Health	2012
Walk Score, Living in Somerville	2017

Young Adult

American Community Survey, United States Census Bureau	2006-2015
Cambridge Health Alliance	2015
City of Somerville Data Farm, Work, Somervillema.gov	2012
City of Somerville Data Farm, Raise a Family, Somervillema.gov	2012
Federal Bureau of Investigation, Uniform Crime Reporting Program	2015
Institute for Community Health	2016
Living Wage Calculator, Boston-Cambridge-Newton. Livingwage.mit.edu	2017
Massachusetts Department of Corrections, Prison Population Trends	2015
Massachusetts Department of Public Health, Bureau of Infectious Diseases and Laboratory Sciences, Division of STI Prevention	2005-2015
Massachusetts Department of Public Health, Bureau of Substance Abuse Services	2013
Massachusetts Department of Public Health, State Report (MA Births)	2015
Massachusetts Department of Public Health, Uniform Hospital Discharge Data System, Division of Health Care Finance and Policy	2012
Massachusetts Health Council, Report on Preventable Conditions and Social Determinants	2017
National Highway Traffic Safety Administration	2014
Somerville Department of Health and Human Services	2017
Somerville Fire and Police, COHR Narcotics Misuse Master Database	2014-2016
Somerville Police Department	2015
Somerville Housing Needs Assessment	2015
Registry of Vital Records and Statistics, Bureau of Health Statistics, Research and Evaluation	2015

The State of Obesity, Adult Obesity in the United States
Stateofobesity.org

2016

Walk Score, Living in Somerville

2017

Middle Adult

American Community Survey, United States Census Bureau	2006-2015
Cambridge Health Alliance	2015
Food Bank of Western Massachusetts, MA SNAP GAP	2017
Massachusetts Department of Corrections, Prison Population Trends	2015
Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Science, HIV Surveillance Program	2015
Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Science, Office of Integrated Surveillance and Information Systems	2015
Massachusetts Department of Public Health, Bureau of Substance Abuse Services	2013
Massachusetts Department of Public Health, Registry of Vital Records and Statistics, Bureau of Health Statistics, Research and Evaluation	2015
Massachusetts Department of Public Health, Uniform Hospital Discharge Data System, Division of Health Care Finance and Policy	2012
Somerville Fire and Police	2017
Somerville Police Department	2017
Somerville Housing Needs Assessment	2015
The State of Obesity, Adult Obesity in the United States Stateofobesity.org	2016
Walk Score, Living in Somerville	2017

Older Adult

American Community Survey, United States Census Bureau	2006-2015
Massachusetts Department of Public Health, Registry of Vital Records and Statistics, Bureau of Health Statistics, Research and Evaluation	2015
Massachusetts Department of Public Health, Uniform Hospital Discharge Data System, Division of Health Care Finance and Policy	2012
Massachusetts Environmental Public Health Tracking	2012
Massachusetts Healthy Aging Data Report: Community Profiles	2015
Somerville Police Department	2016
Somerville Traffic and Parking Department	2017
U.S. Department of Health and Human Services, National Center for Health Statistics, "Health, United States, 2016"	2017

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Appendix B: Citations

Introduction & User Guide

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Appendix C: Glossary

Accountable Care Organizations

Accountable Care Organizations (ACOs) are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care to their Medicare patients. The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors. When an ACO succeeds both in delivering high-quality care and spending health care dollars more wisely, it will share in the savings it achieves for the Medicare program (Accountable Care Organizations, 2017).

ACS – American Community Survey

An annual survey conducted by the U.S. Census Bureau in all U.S. counties and in Puerto Rico. It provides critical economic, social, demographic, and housing information to this country's communities every year. The survey provides communities with up-to-date information they need to better understand community issues, respond to needs, and allocate programs and resources. In recent years, the ACS has become more accessible online, and is now available to the public at factfinder.census.gov. Users can search for data exclusive to Somerville residents or compare data with other cities or the entire state.

ACEs – Adverse Childhood Experiences

Childhood experiences, both positive and negative, have a tremendous impact on future violence victimization and perpetration, and lifelong health and opportunity. As such, early experiences are an important public health issue. Much of the foundational research in this area has been referred to as Adverse Childhood Experiences (ACEs). Adverse Childhood Experiences have been linked to: risky health behaviors; chronic health conditions; low life potential, and early death. As the number of ACEs increases, so does the risk for these outcomes. The wide-ranging health and social consequences of ACEs underscore the importance of preventing them before they happen. CDC promotes lifelong health and well-being through Essentials for Childhood – Assuring safe, stable, nurturing relationships and environments for all children (About Adverse Childhood Experiences, 2016).

Affordable Care Act (ACA)

The comprehensive health care reform law enacted in March 2010 (sometimes known as ACA, PPACA, or “Obamacare”). The law has 3 primary goals: 1. Make affordable health insurance available to more people. The law provides consumers with subsidies (“premium tax credits”) that lower costs for households with incomes between

100% and 400% of the federal poverty level; 2. Expand the Medicaid program to cover all adults with income below 138% of the federal poverty level. (Not all states have expanded their Medicaid programs); 3. Support innovative medical care delivery methods designed to lower the costs of health care generally (Affordable Care Act, n.d.).

Age Specific Rate per 100,000

A way to compare rates of disease, death, injury and other health outcomes between different age ranges; used to compare rates of health outcomes in different communities; ex. The amount of men over 50 diagnosed with cancer per 100,000 in New York City compared to Boston.

Association of Maternal and Child Health Programs

Life Course Indicators (LCIs)

The Association of Maternal and Child Health Programs developed a set of 59 Life Course Indicators which are designed to promote a standard set of indicators to be applied to measure progress and improve maternal and child health. The Life Course Indicators were selected to address the social determinants of health among mothers and children in America. AMCHP Life Course Indicators selected for this report were chosen because existing Somerville data aligns with the indicators or because they are of particular national importance. The indicators chosen do not represent City-wide priorities, and while all AMCHP indicators are worth addressing, many could not be discussed in the report due to space limitations.

Behavioral Health

Behavioral health is inclusive of the emotions, behaviors and biology relating to a person's mental well-being, their ability to function in everyday life and their concept of self. While often used with Mental Health, Behavioral Health also includes the biological component of wellness. For example, Behavioral Health encompasses all contributions to mental wellness including substances and their abuse, behavior, habits and other external forces.

CDC – Center for Disease Control

The Centers for Disease Control and Prevention (CDC) is a federal agency that conducts and supports health promotion, prevention and preparedness activities in the United States, with the goal of improving overall public health. Established in 1946 and based in Atlanta, the CDC is managed by the Department of Health and Human Services (HHS) (Centers for Disease Control and Prevention, 2017).

Demographics

Statistical data relating to the population and particular groups within it; what ethnicities, ages, races, religions, genders make up a population in a particular area.

English-Language Learners, or ELLs

Students who are unable to communicate fluently or learn effectively in English, who often come from non-English-speaking homes and backgrounds, and who typically require specialized or modified instruction in both the English language and in their academic courses.

Equity

Everyone having access to fair and equal treatment under the law, regardless of race, social class or gender. Equity and equality are two strategies to produce fairness, but they are distinct. Equity is giving everyone what they need to be successful. Equality is treating everyone the same.

Equality aims to promote fairness, but it can only work if everyone starts from the same place and needs the same help. Equity is a focus on ensuring that those who have been disadvantaged for any number of reasons, including due to structural inequalities, are given what they need to be successful.

Federal Poverty Level

A measure of income issued every year by the Department of Health and Human Services (HHS). Federal poverty levels are used to calculate eligibility for Medicaid, the Children's Health Insurance Program (CHIP) and other programs and benefits. In 2017, the federal poverty level (FPL) for a family of 4 is \$24,600(adapted from <https://www.healthcare.gov/glossary/federal-poverty-level-FPL/>).

Health

A state of complete physical, mental and social wellbeing and not merely the absence of disease; influenced by many socioeconomic factors.

Physical Health: good body health, being healthy includes regular physical activity, good nutrition and adequate rest.

Mental Health: cognitive and emotional wellbeing: a state of wellbeing in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.

Healthy Communities Initiative

Involves a wide range of local institutions, community groups and private citizens, as well as health professionals, in community development efforts to improve conditions that encourage and support healthy living, engaging citizens in helping realize visions for a healthier community.

Health Disparity

A health difference that is closely linked with social, economic or environmental disadvantage.

Health Equity

Healthy People 2020 defines health equity as attainment of the highest level of health for all people. Health Equity means efforts to ensure that all people have full and equal access to opportunities that enable them to lead healthy lives (<https://healthequity.sfsu.edu/content/defining-health-equity>).

Health Span

The period of a person's life during which they are generally health and free from serious or chronic illness.

Healthy People 2020

The U.S. CDC (Center for Disease Control) develops science-based "Healthy People" objectives, revised every 10 years. Leading Health Indicators (LHI) are high priority health issues and actions that can be taken to address them. Topics include: access to health services, clinical preventative services, environmental quality, injury and violence, maternal, infant and child health, mental health, nutrition, physical activity and obesity, oral health, reproductive and sexual health, social determinants, substance abuse and tobacco. The Healthy People 2020 leading health indicators were selected to strategically incorporate determinants of health and health disparities, as well as to promote health across life stages to "promote quality life, healthy development, and health behaviors across all life stages." The indicators selected for inclusion in the Healthy People 2020 leading health indicators were also informed by the National Prevention Strategy. Healthy People 2020 leading health indicators selected for The Wellbeing Report 2017 were chosen because there is existing Somerville data which aligns with the indicators or because they are of particular national importance. The indicators chosen do not represent City-wide priorities, and while all HP-2020 indicators are worth addressing, many could not be discussed in the Report due to space limitations.

High Needs

According to the Massachusetts Department of Elementary and Secondary Education a high needs classification includes students with disabilities and English Language Learners in addition to students who are homeless or in the foster system, those who perform far below grade level, and students who otherwise are in need of special assistance and support (MA DESE and U.S. Department of Education).

Life Course Indicators

See 'Association of Maternal and Child Health Programs Life Course Indicators (LCIs)' above.

Life Course Theory

Considering a range of factors that impact health, not just in one stage of life, but across all the life stages. Looks at patterns across time and populations. Family, social, economic and environmental factors impact health equality.

MWRA - Massachusetts Water Resources Authority

The public authority in the Commonwealth of Massachusetts that provides wholesale drinking water and sewage services to Somerville and other municipalities and industrial users. MWRA receives water from the Quabbin and Wachusett Reservoirs and the Ware River in central and western Massachusetts. For sewage, it operates an effluent tunnel in Boston Harbor for treated sewage as well as a treatment center on Deer Island at the mouth of the harbor, among other properties.

MAPP- Mobilizing for Action Through Planning and Partnerships

A community-driven strategic planning process for improving community health. Facilitated by public health leaders, this framework helps communities apply strategic thinking to prioritize public health issues and identify resources to address them. This approach drove the earliest Somerville health data inquiry process.

Median Income

Median income is the amount which divides the income distribution into two equal groups, half having incomes above the median, half having incomes below the median. The medians for households, families and unrelated individuals are based on all households, families and unrelated individuals, respectively. The medians for people are based on people 15 years old and over with income (U.S. Census Bureau, 2004).

Population Health

Health outcomes of a group of individuals, including the distribution of such outcomes within the group. The framework for population health includes three areas:

- Health outcomes (morbidity, mortality, quality of life)
- Health determinants that influence distribution (medical care, socioeconomic status, genetics)
- Policies and interventions that affect these determinants (social, environmental, individual) (http://www.rwjf.org/en/culture-of-health/2013/01/defining_population.html)

Risk and Protective Factors

There are certain determinants of health which are risk factors and others which are considered protective factors for health outcomes. Just like the fact that there can be biological risk factors for disease, such as obesity as a risk factor for diabetes, family and community risk and protective factors can also increase or decrease the odds of poor health outcomes.

Risk factors can be described as "a characteristic at the biological, psychological, family, community or cultural level that precedes and is associated with a higher likelihood of problem outcomes." Conversely, a protective factor is associated with a lower likelihood of problem outcomes.

Individual risk factors can have multiple outcomes. For example, an adverse experience such as the observation of or experience of abuse is associated with anxiety as well as depression and substance abuse.

Risk factors are correlated and those with some risk factors are likely to experience many risk factors. Risk factors and protective factors are cumulative, and somebody with more risk factors is more likely to have multiple or worse negative health outcomes, while those with many protective factors are at a reduced risk for negative outcomes (SAMHSA).

SAMHSA – Substance Abuse and Mental Health Services Administration

The agency within the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities (SAMHSA).

Social Determinants of Health

A range of personal, social, economic, and environmental factors that contribute to an individual's health and wellbeing, including equity. Education, housing, and the built and natural environment, the economic climate and social structures are all factors contributing to individual and population health. For example, people with a quality education, stable employment, safe homes and neighborhoods and access to preventive services tend to be healthier throughout their lives. The world health organization (WHO) defines social determinants of health as "the conditions in which people are born, grow, live, work and age, and which are shaped by the distribution of money, power and resources at global, national and local levels and mostly responsible for health inequities." The CDC mentions that factors that impact social determinants of health are those that are "not controllable by the individual but affect the individual's environment."

YRBS- Youth Risk Behavior Survey

National survey conducted every two years to monitor priority health risk behaviors that contribute to the leading causes of death, disability and social problems among youth and adults in the United States. Similar surveys are conducted at the state and local levels on varied schedules, assessing similar risk factors. These health risk behaviors include:

- Behaviors that contribute to unintentional injuries and violence
- Sexual behaviors related to unintended pregnancy and sexually transmitted infections, including HIV infection
- Alcohol and other drug use
- Tobacco use
- Unhealthy dietary behaviors
- Inadequate physical activity

Walk Score/Bike Score/

Walk Score is a number between 0 and 100 that measures the walkability of any address, usually between two points.

Bike Score is a number between 0 and 100 that measures the bikeability of any address, usually between two points

Wellbeing

Wellbeing is comprised of numerous dimensions that influence an individual's quality and duration of life. Wellbeing integrates mental health (mind) and physical health (body) resulting in more holistic approaches to disease prevention and health promotion. Wellbeing is a valid population outcome measure beyond morbidity, mortality and economic status that tells us how people perceive their life is going from their own perspective. Results from cross-sectional, longitudinal and experimental studies find that wellbeing is associated with: self-perceived health; longevity; healthy behaviors; mental and physical illness; social connectedness; productivity; factors in the physical and social environment. Wellbeing can provide a common metric that can help policy makers shape and compare the effects of different policies measuring, tracking and promoting wellbeing can be useful for multiple stakeholders involved in disease prevention and health promotion. Wellbeing is associated with numerous health, job, family and economically related benefits. Individuals with high levels of wellbeing are more productive at work and are more likely to contribute to their communities (adapted from <https://www.cdc.gov/hrqol/wellbeing.htm>).

Notes:

Prenatal & Early
Childhood (Birth–4yrs)

Pages 22–43

- Gaps remain in utilization of adequate prenatal care for teen mothers.
- Infant mortality very low.
- Teen birth rates have declined.
- High risk populations disproportionately represented in premature and low weight births.
- Lack of screening on adverse childhood experiences, despite known impacts.
- Adequate housing and food have long term positive impacts on children's health.
- Early childhood obesity can have lifelong impacts.
- Childcare expense is a stress for many families.

School Age &
Adolescent (5–18yrs)

Pages 44–69

- English is not the 1st language of almost ½ of Somerville students.
- 31% of HS students self-report mental health issues, including depression.
- Substance use is decreasing.
- More children are in foster care or guardianship; increasingly due to substance use of parents.
- Childhood obesity in 24% of school students measured; health system data indicates disparities.
- By high school, only 26% of students report adequate sleep.
- With 23% poverty rates for children under 18, housing and food security disparities exist.

Early Adult
(18–24yrs)

Pages 70–89

- Mental health issues surface, including serious mental illness.
- Fatal overdoses have claimed lives.
- Identification of cases of sexually transmitted infections tripled over 10 years, to rates higher than state wide.
- Economics of housing combined with college costs is creating multiple stressors.
- Mobile devices are ever present; dominating social interactions.
- Educational disparities influence lifelong health and wealth.
- Immigration status strongly impacts education and employment options.

Young Adult
(25–39yrs)

Pages 90–109

- Represent 40% of total population.
- Mental health issues persist, with indication of racial/ethnic disparities.
- Mental health historically a top cause of hospitalizations.
- Non-fatal and fatal overdoses increased since 2010, showing slight decreases in 2017.
- Trend of asthma and respiratory diseases among top 5 causes of hospitalization.
- High cost of housing impacting options and choices.

Middle Adult
(40–64yrs)

Pages 110–129

- Trend of higher alcohol/substance related emergency room visits.
- Diabetes data indicates racial/ethnic disparities.
- Identification of new cases of HIV infection twice state rate in 2015.
- Heart disease has historically been leading cause of death.
- Age-specific rates of death from breast cancer were higher than the state.
- As of 2015, 1/3 have a college degree or higher.

Older Adult
(65+yrs)

Pages 130–151

- Close to 30% are not U.S. citizens and 23% do not speak English very well as of 2015.
- Over 38% reported some disability, as of 2015.
- Diabetes and heart disease data shows racial/ethnic disparities.
- Historically, lung cancer is leading cause of cancer death, higher than state.
- Poverty rate for 65+ rose to over 14%; 27% are on SNAP.
- Over 1/2 live alone, a risk for isolation; 7% live with grandchildren, 2% are parenting grandchildren.



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