2014

Working Together to Build a Healthier Greater Nashua

Community Health Assessment

City of Nashua

Division of Public Health and Community Services

18 Mulberry Street, Nashua, NH 03060

603-589-4560 www.nashuanh.gov

GREATER NASHUA

COMMUNITY HEALTH ASSESSMENT

October 2014

CITY OF NASHUA, NEW HAMPSHIRE

DIVISION OF PUBLIC HEALTH
AND COMMUNITY SERVICES

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Donnalee Lozeau

MAYOR

Dear Community:

Three years ago, the City of Nashua completed the first Community Health Assessment and Community Health Improvement plan in our area's history. I am now pleased to share our second Community Health Assessment with you.

The City of Nashua; Division of Public Health and Community Services continues to impress me with their accomplishments and I am proud of their success in effectively collaborating with medical providers, schools, community services and towns throughout our region. Efforts such as this Community Health Assessment would not be possible without these partnerships, and I thank all those who played a role in supporting and completing this crucial source of information for our community.

As you know, an assessment is only useful when utilized. Our community is a better place today because of the many projects that germinated from our first assessment; things like the community gardens, art murals, lighting of the Heritage Rail Trail, elementary school and early childhood healthy eating and active living programs to name a few. We have also been successful in bringing community forums and educational materials to our residents that aim to improve access to healthcare and raise awareness to the complexities of mental health.

The great work by our Division of Public Health and Community Services and their many supporters and partners that brings you this second assessment will continue, making the greater Nashua community a thriving and healthy place to call home!

Sincerely,

Donnalee Lozeau

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603.589.3260 · fax 603.594.3450 · NashuaMayor@NashuaNH.gov

Letter from Director Kerran Vigroux

Dear Colleagues,

It is with great excitement that I write this letter for the second Community Health Assessment (CHA) for the City of Nashua and the Greater Nashua Public Health Region. I am proud of the strides that we have made over the past three years taking the health data we collected from the 2011 CHA and converting data into action through our collective work on the 2012 Community Health Improvement Plan. I am eager to see us continue this work to make our communities healthier and safer places to live and work. I hope you will not only find the information contained in this report useful to your agency, but also as an effective tool to promote health throughout our community.

I would like to thank the over 25 organizations that have participated in this assessment for their generosity of time, energy and dedication in support of this project. I want to also thank the agencies that helped fund the Community Health Assessment; the City of Nashua, Southern New Hampshire Health Systems and St. Joseph Healthcare. Without their support, this project would not have been possible.

Over the course of the past nine months, many of you have spent time working with my staff. I am very proud of their hard work, expertise and dedication. I know there have been many meetings and hours of planning and I just want you to know how grateful my staff and I are for your support and involvement. We are looking forward to continuing these partnerships as we move towards the planning of the next Community Health Improvement Plan and continue creating a safer and healthier greater Nashua.

Sincerely,

Kerran Vigroux, BS, MPH
Director
Division of Public Health and Community Services

Acknowledgements

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Kerran Vigroux	City of Nashua DPHCS
Chris Wiillians	Greater Nashua Chamber of Commerce
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Thank you for your support and dedication to making our communities a healthier place to live, work and play!

Executive Summary

This is the second Community Health Assessment (CHA) for the City of Nashua and the Greater Nashua Public Health Region (GNPHR). A CHA is a process by which community members gain an understanding of the health concerns and needs of the community by identifying, collecting, analyzing and disseminating information on the community's assets, strengths, resources and needs. There are many health topics covered in this CHA, including access to healthcare, maternal health, chronic conditions, emergency preparedness, and substance misuse. The overarching goals of the CHA are to engage community partners, identify emerging health issues, provide information to community members and set the foundation for future programs and grant opportunities for the GNPHR. As appropriate, the data in the report are compared to the New Hampshire State Health Improvement Plan objectives and the Healthy People 2020 objectives.

As part of this assessment, the City of Nashua, Division of Public Health and Community Services and CHA Advisory Board wanted to collect qualitative data from residents in the City of Nashua and the twelve surrounding towns of Amherst, Brookline, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Pelham and Wilton to enhance the data that was collected in the 2011 CHA, which was primarily quantitative data. This project was funded by the City of Nashua, Southern New Hampshire Health System and St. Joseph Healthcare. In addition, data was collected utilizing databases from the New Hampshire Department of Health and Human Services and the Centers for Disease Control and Prevention.

In the 2011 Community Health Assessment, the top health issues identified were obesity, access to health care and mental health. Not surprisingly, three years later, these same issues rise to the top, along with substance misuse. In all five of the focus groups held with residents in the region as well as in Nashua, mental health/substance misuse and access to care were identified in the top three health priorities. Obesity was identified as one of the top three health priorities in four out of five focus groups.

Behavioral health, which includes substance misuse and mental illness, affect a large proportion of the population. For example, about 25% of high school students in the GNPHR used marijuana at least once in the past month and 45% think it would be easy for them to get marijuana if they wanted too. About 16% of all adults in the GNPHR report binge drinking and 20% of women of childbearing age binge drink. Another staggering statistic is that 35% of high school students in the region had at least one drink of alcohol in the past month and 20% were binge drinking in the past month. Adults in the region experience about 3.5 mentally unhealthy days each month and 19% of high school students in the region cut or burn themselves on purpose. Between 2008 and 2013, there were 124 suicides in the GNPHR and in high school students from the regional high schools, between 11% and 18% have seriously considered attempting suicide. It is evident through the numbers and the information gathered through the focus groups that behavioral health is a health

priority in the GNPHR and more work needs to be done in the realm of behavioral health to enhance the health and well-being of residents in the region.

Healthy eating and active living topics are covered in the CHA as well. About 64% of adults in the region are obesity or overweight and it continues to be a public health challenge. About 12% of Nashua high school students are obese and 17% of Nashua's third graders are obese. Over 50% of GNPHR adults are meeting aerobic physical activity guidelines for substantial health benefits and they eat fruits and vegetables 2 times a day.

It is too early to see what the long term effects of the Healthcare Marketplace and the New Hampshire Health Protection Program will be but prior to the start of these programs, about 11% of residents, and 3% of children in Nashua, did not have health insurance. In all of the focus groups, the broad theme of access to and coordination of care resonated with attendees who clearly recognize the importance of getting the right care at the right time. Some residents in the region are having difficulty accessing care and affording health care services.

Although there are health challenges in the GNPHR, there are areas where we are excelling. For example, 70% of our third graders have dental sealants and the hospitalization rate for congestive heart failure is significantly lower in the GNPHR than throughout NH, and it was significantly lower in 2009 than 2000. Only 1% of newborns in the GNPHR have a very low birth weight and eight towns in the region have at least 90% of their mothers refraining from smoking during pregnancy.

Following the publication of this CHA, the City of Nashua, Division of Public Health and Community Services will work with community partners and stakeholders to publish the 2015 Community Health Improvement Plan (CHIP) and develop the 2016-2019 Community Health Improvement work plan. The Improvement Plan will identify the emerging health issues from the CHA, and lay a foundation for a work plan to improve the health of the community.

The CHA, CHIP and DPHCS's Strategic Plan are part of the process for becoming voluntarily accredited as a local health department through the Public Health Accreditation Board, a non-profit organization that was created to promote and manage the national public health accreditation program.

There have been great strides in improving the health of Nashua and the GNPHR since the first publication of the CHA in 2011. With continued collaboration with community partners and stakeholders, the region will continue to become a healthier place to live, work, learn and play.

Alone we can do so little; together we can do so much.

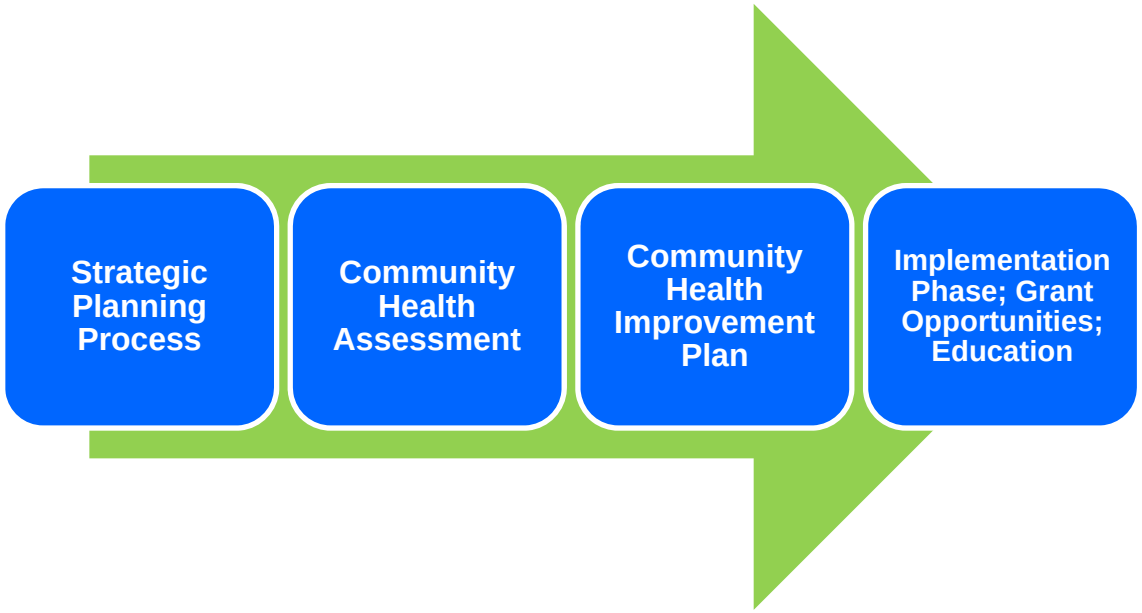
- Helen Keller

Introduction

Contents

This is the second Community Health Assessment (CHA) for the City of Nashua and Greater Nashua Public Health Region (GNPHR). The first assessment was published in September 2011 and highlighted the top health issues for our community. A CHA is a process by which community members gain an understanding of the health concerns and needs of the community by identifying, collecting, analyzing and disseminating information on the community's assets, strengths, resources and needs. There are many health topics covered in this CHA, including access to healthcare, maternal health, chronic conditions, emergency preparedness, environmental health and substance misuse. The overarching goals of the CHA are to engage community partners, identify emerging health issues, provide information to community members and set the foundation for future programs and grant opportunities for the GNPHR. Following the publication of this CHA, the City of Nashua, Division of Public Health and Community Services will work with community partners and stakeholders to develop the 2016-2019 Community Health Improvement Plan (CHIP), which will identify the emerging health issues from the CHA, and lay a foundation for a work plan to improve the health of the community over a three year period (Figure I.1). The CHA, CHIP and DPHCS's Strategic Plan are part of the process for becoming voluntarily accredited as a local health department through the Public Health Accreditation Board, a non-profit organization that was created to promote and manage the national public health accreditation program.

Figure I.1 Community Health Assessment Process

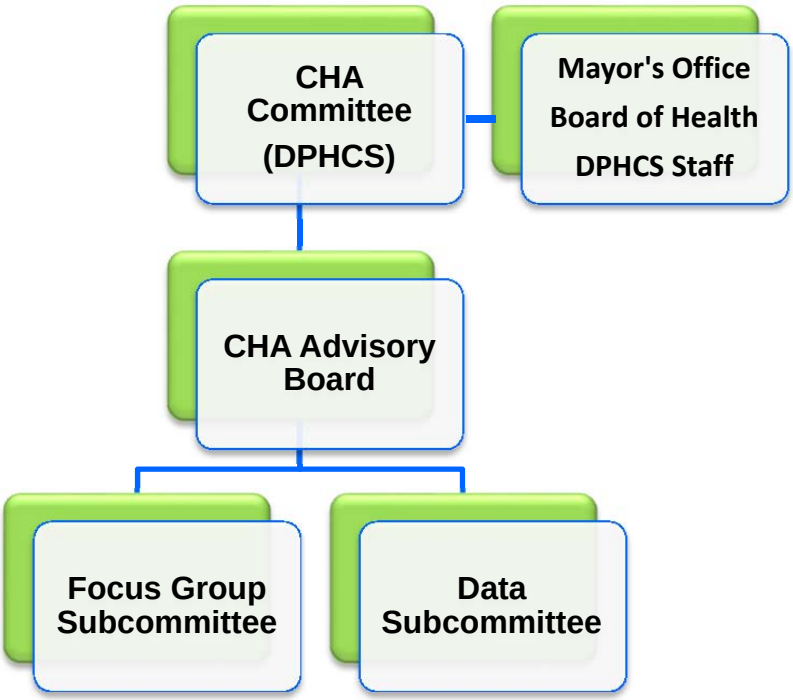


The steps for conducting a CHA are detailed below and outlined a nine-month timeframe from November 2013 to August 2014.

Figure I.2 Steps for Conducting a CHA

In November 2013, the DPHCS formed the CHA Committee, a team of staff members from each department within the Division, that worked together to formalize a plan of action, write the CHA and perform internal duties such as scheduling and organizing events. The Epidemiologist was identified as the lead coordinator for the project. Also during this time, the CHA Committee started to recruit medical, collegiate and social service organizations for the CHA Advisory Board. The Board was composed of 24 individuals from 22 organizations. The responsibilities of the Board were to attend four meetings, lend expertise to the DPHCS, review materials and data, become an advocate for the process, identify resources, and help disseminate the final report. Two subcommittees were developed under the Board to assist with planning: the Focus Group Subcommittee and the Data Collection Subcommittee (Figure I.3).

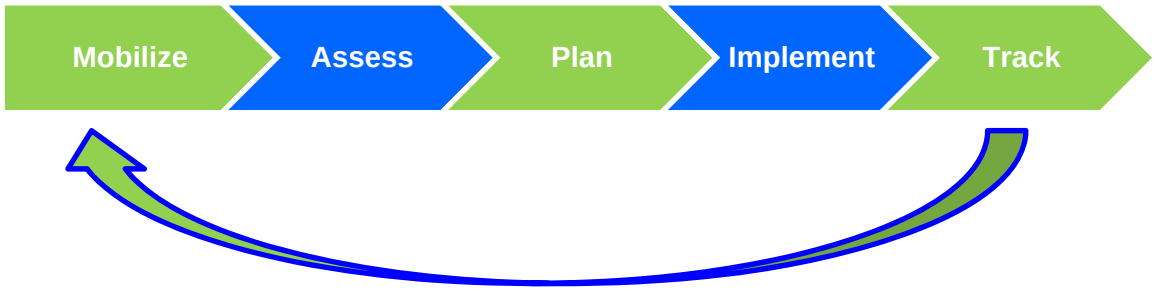
Figure I.3 Organization/Communications Chart for the CHA



Healthy People 2020

Healthy People 2020 is a program of the US Department of Health and Human Services and the vision for Healthy People 2020 is, "A society in which all people live long, healthy lives". For three decades, Healthy People has set 10-year national objectives for improving the health of Americans. The objectives for Healthy People are to track and monitor health indicators over time to see if the targets set by Healthy People are being met. To assist organizations in implementing Healthy People 2020 (HP2020), a framework called, Mobilize, Assess, Plan, Implement, Track (MAP-IT) was developed for planning and evaluating public health interventions (Figure I.4). This figure was adapted to include an arrow that shows the process is ongoing. MAP-IT follows a similar process to the one developed by the DPHCS and the steps outlined in conducting a CHA (Figure I.1; Figure I.2). When available, the data in the CHA will be compared to the HP2020 objectives and goals.

Figure I.4 Healthy People 2020's MAP-IT



New Hampshire State Health Improvement Plan

The New Hampshire Department of Health and Human Services, Division of Public Health Services released the *New Hampshire State Health Improvement Plan (SHIP) 2013-2020: Charting a Course to Improve the Health of New Hampshire* in 2013. This document describes the most significant health issues currently facing New Hampshire and highlights ten key health areas and their health outcome indicators. The plan includes goals to meet for 2015 and 2020. Where comparable, the 2014 Community Health Assessment will include these goals and will highlight if Nashua and the GNPHR meet the goals outlines in the SHIP.

Plan Priorities:

- Tobacco
- Obesity/Diabetes
- Heart Disease and Stroke
- Healthy Mothers and Babies
- Cancer Prevention
- Asthma
- Injury Prevention
- Infectious Disease
- Emergency Preparedness
- Misuse of Alcohol and Drugs

Data Sources

For the CHA, primary data (data that is collected firsthand), and secondary data (data that is collected by another organization), was gathered from various sources within the City and the State of New Hampshire. Primary data was collected by conducting focus groups in the GNPHR while secondary data was collected from local agencies in Nashua, the New Hampshire Department of Health & Human Services (NH DHHS) and the New Hampshire Department of Environmental Services (NH DES). National data from organizations such as the Centers for Disease Control and Prevention were also utilized in this CHA.

Focus Groups

As part of this assessment, the DPHCS and Advisory Board wanted to collect qualitative data from residents in the City of Nashua and the twelve surrounding towns of Amherst, Brookline, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Pelham and Wilton to enhance the data that was collected in the 2011 CHA, which was primarily quantitative data. This project was funded by St. Joseph Hospital and Southern New Hampshire Health System.

The Community Health Institute (CHI), the NH office of JSI Research and Training Institute, Inc., was contracted by the DPHCS to assist with the design, facilitation and analysis of ten focus groups as part of their qualitative research for the CHA. Focus group discussions were audio

recorded, with permission of the participants, then summarized. DPHCS staff facilitated the recruitment and promotion of the focus groups to residents, key leaders and healthcare providers in the region and coordinated the location, food and incentives for the focus groups. CHI facilitated the ten focus groups in March and April 2014 with a total of 104 participants. The Community Health Assessment Advisory Board sought participation from a broad and diverse cross-section of the community, and decided upon a focus group approach consisting of three topic-specific focus groups with professionals that target oral health, the aging population, and youth behavioral health. Additionally, seven focus groups were scheduled in the towns of Nashua, Milford, Merrimack, and Hudson with a combination of residents, key leaders, and healthcare providers. While it was the intention of DPHCS to conduct separate regional focus groups with key leaders/providers and residents, the Hudson and Merrimack focus groups were a mixture of both populations. Focus groups scheduled in Milford, Merrimack and Hudson gathered input from residents, key leaders and healthcare providers living and working in those towns, as well as the twelve surrounding towns in the region. The full report of the focus group process can be accessed on the City of Nashua, Division of Public Health and Community Services website: http://bit.ly/1vmQvtd.

GIS Project

The Nashua Assessing Department uses ArcGIS for their daily assessing needs and has the capability to broaden the use of ArcGIS to other city departments. The DPHCS has partnered with the Assessing Department to utilize ArcGIS for many projects, with the most recent projects focusing on the CHA. Throughout the CHA, mapping was used to highlight data by census tract in Nashua.

Secondary Data

Secondary data was collected primarily from the NH DHHS, the NH Department of Environmental Services (NH DES) and the Centers for Disease Control and Prevention (CDC). Some of the databases used by NH DHHS and NH DES are highlighted below.

Emergency Department and Inpatient Hospitalizations Database: This database includes information from emergency department visits and inpatient hospitalizations for New Hampshire residents. The data in this database is coded using the International Statistical Classification of Disease (ICD-9) codes, or codes that designate diagnosis and cause of death in the medical records.

New Hampshire Behavioral Risk Factor Surveillance System (BRFSS): This is a telephone survey of adults 18 years and over, but does not include adults living in institutions. The BRFSS is supported by the CDC and is administered in all the states and U.S. territories.

New Hampshire Youth Risk Behavioral System (YRBS): This is a national school-based survey conducted by the CDC to monitor health risk behaviors, asthma and obesity in young adults. The health risk behaviors include tobacco, alcohol and drug use, sexual risk behaviors, unhealthy diet behaviors and physical inactivity. The states, local education, health agencies and U.S. territories can also conduct the YRBS.

New Hampshire Environmental Public Health Tracking Program / Environmental Health Data Integration Network (EHDIN): Funded by the CDC, this initiative is to "improve public health by providing science-based information on the trends and distributions of environmentally-related diseases". EDHIN is the network that provides access to the data and information on environmental health.

NH Trauma and Emergency Medical Services Information System (TEMSIS): a web-based, statewide data system for collecting data on ambulance runs in New Hampshire.

CHA Data Subcommittee

The CHA Data Subcommittee met on a regular basis during this process and provided data and feedback for the CHA. The medical partners from St. Joseph Healthcare, Southern NH Health System, Dartmouth Hitchcock-Nashua and Lamprey Health Care – Nashua Center, worked together to query their electronic medical records for four indicators to include in the CHA. They were:

- Children ages 12-21 that live in the Greater Nashua Region who had a preventative exam in the past 12 months.
- Adults 18-85 years with diagnosed hypertension that live in the Greater Nashua Region and have had a blood pressure below 140/90 within the past 12 months.
- Newborns diagnosed with NAS from January 1, 2009 to December 31, 2013.
- Number of emergency department visits from 2009-2013.

There are some limitations to the data collected and they include:

- We cannot de-duplicate records of individuals that may be in more than one electronic health record system,
- There are providers that are not affiliated with these health systems in the region and their medical records were not a part of this query,
- We defined a timeframe for each indicator (e.g. 12 months) and some individuals may fall slightly outside of this window (e.g. 13 months) and still be access the appropriate services or reaching certain health goals.

This collaborative effort was a huge success and a demonstration of what can be accomplished when medical partners work together to conduct a CHA. The group is currently looking at additional data projects such as collected body mass index data.

U.S. Census Bureau

The U.S. Census Bureau collects a multitude of data through surveys of the American people. Information is collected every ten years for the U.S. Census, with the most recent having been conducted in 2010. Other surveys include the American Community Survey which is conducted every year, and the Economic Census and Census of Governments survey, which is conducted every five years. In this report, data was used from both the 2010 U.S. Census and the 2008-2012 American Community Survey.

Additional Data Sources

2-1-1 New Hampshire
Centers for Disease Control and Prevention
Harbor Care Health and Wellness Clinic
Healthy People 2020
Lamprey Healthcare – Nashua Center
Nashua Police Department
Nashua Regional Planning Commission
Nashua School District
NH Cancer Registry
NH Department of Education
NH Department of Environmental Services
NH Department of Health and Human Services
NH Electronic Disease Surveillance System
NH Environmental Public Health Tracking Program
NH Trauma and Emergency Medical Services Information System
Office of Medicaid Business and Policy
Substance Abuse and Mental Health Administration
ServiceLink Aging and Disability Resource Center
Southern NH Services, Inc
US Department of Health and Human Services

Notes to the Reader

The following section provides additional information that may be useful to the reader.

Geography

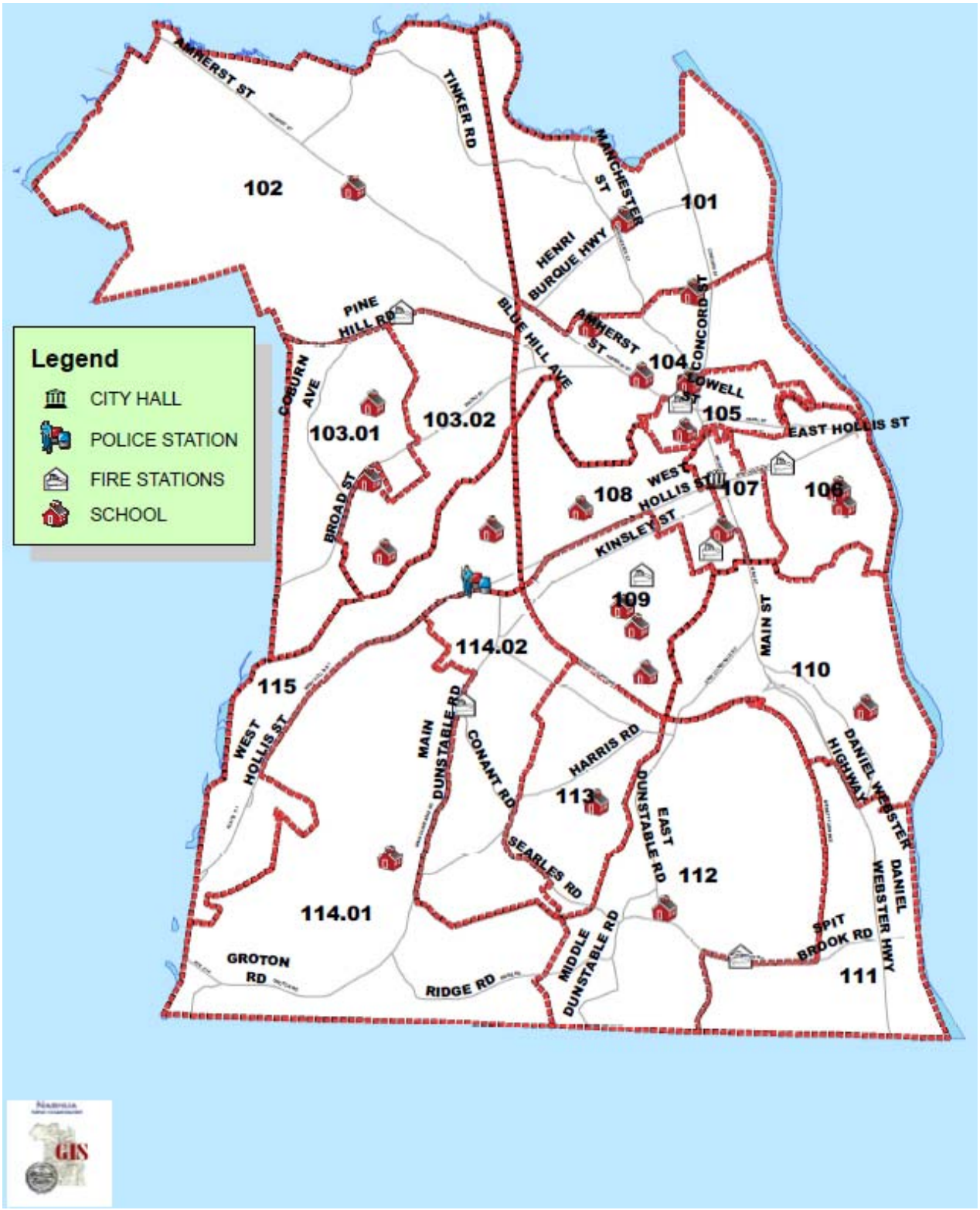
The three geographies mentioned most often throughout the report are the City of Nashua, the Greater Nashua Public Health Region (GNPHR) and the State of New Hampshire. The City of Nashua is located in the southern portion of New Hampshire's Hillsborough County, approximately halfway between the Cities of Lowell, Massachusetts, and Manchester, New Hampshire. According to the 2010 U.S. Census, it's nearly 31 square miles are home to an estimated 86,494 people, or roughly 6.6% of New Hampshire's total population of 1,316,470 people. It is the second largest city in New Hampshire, with Nashua's population more than double that of Concord, the state's capitol and third largest city. Throughout the State of New Hampshire, there are thirteen public health regions and the GNPHR is composed of thirteen towns which include the towns of Amherst, Brookline, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Nashua, Pelham and Wilton.

When possible, the data may be compared between geographies. For instance, the Nashua specific data will be compared to regional data and state data to see how they compare to one another. In some cases, data for the region and Nashua are not available due to small sample sizes. When this occurs, data for the state or Hillsborough County will be shown.

Figure I.5 Greater Nashua Public Health Region

Source: City of Nashua GIS Department

Figure I.6 City of Nashua Census Tracts



Source: City of Nashua, GIS Department

Technical Language

Although efforts were made to reduce the amount of technical language throughout the CHA, there still remains some language that may be unfamiliar to readers. Below are definitions for the most commonly used technical language in the CHA report (adapted from the 2011 New Hampshire State Profile).

Statistical Significance: The word "significant" is a statistical term with technical meaning and does not define a health condition as important or not important. Differences calculated from small sample sizes or populations are less likely to show statistical significance.

Confidence Intervals: A confidence interval (CI) describes the level of variability in a sample estimate and specifies the range in which the true value of the population that the sample represents is likely to fall. We use the 95% confidence level, which means that this population value falls within 95% of the confidence intervals estimated from samples of this population. If the 95% confidence intervals of these estimates do NOT overlap, these estimates differ statistically significantly from each other at the 0.05 significance level.

Rate: The number of events per 1,000, 10,000 or 100,000 population. Rates that are calculated with small sample sizes (<20 events) are unreliable. A crude rate does not factor in other variables such as age and commonly used crude rates include birth and death.

Incidence: The number of new cases revealed or diagnosed during a specific time period. Represented as a rate.

Prevalence: The number of cases identified at a specific time. Represented as a rate.

Mortality: A health event resulting in death. Represented as a rate.

Age-Adjusted: The rate that would occur if the population had the same age distribution as that of the United States. This allows for comparison between populations with different age distributions.

Acronyms

There are many acronyms throughout the CHA report. To assist the reader, a list of acronyms can be found in Appendix 1.

Community Spotlight:
Greater Nashua Public Health Advisory Council

As of July 2014, the regional network and public health partners will be known as the Greater Nashua Public Health Advisory Council and the Community Health Assessment Advisory Board that is mentioned in this report is merging into the Greater Nashua Public Health Advisory Council Executive Committee. As we move forward and work on our 2015-2018 Community Health Improvement Plan, the Executive Committee will take the lead role in moving us forward. For more information on this initiative, please contact the Division at 603-589-4560 or visit: *http://bit.ly/GNPHAC*.

"Equity means that no group has poorer health due to reasons outside its control, but within society's control."

-MEIZHU LUI, Unnatural Causes

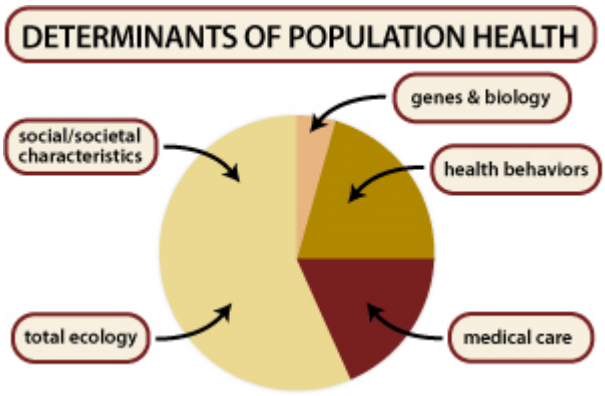
Social Determinants of Health

Source: *Baltimore City Health Department*

Contents

The outcomes of health, both positive and negative, are determined by much more than who we are or what we do as individuals. The unequal distribution of money, power, and resources within our communities limits or creates barriers to healthy life choices. Although an individual may want to begin a healthy diet, it is harder to change their behavior if they have limited access to a grocery store but an abundance of fast food around their home. People in lower social and economic circumstances have twice the risk of major illness and premature death as those of a higher socioeconomic status.[1] The Centers for Disease Control and Prevention (CDC) estimates that only 25% of population health can be attributed to genes, biology, and health behaviors.[2] Determinants such as social/societal characteristics, medical care, and our environment influence a much larger portion of our health, wellbeing, and ability to thrive. Ultimately, health isn't just about who we are, but also the factors impacting where we live, learn, work and play. Emphasizing a focus on individual-level and population-level determinants of health is one of the primary objectives of Healthy People 2020. This chapter will explore the social determinants of health, and how they work to enhance or inhibit healthy communities.

Figure 1.1 Social Determinants of Health Model, CDC

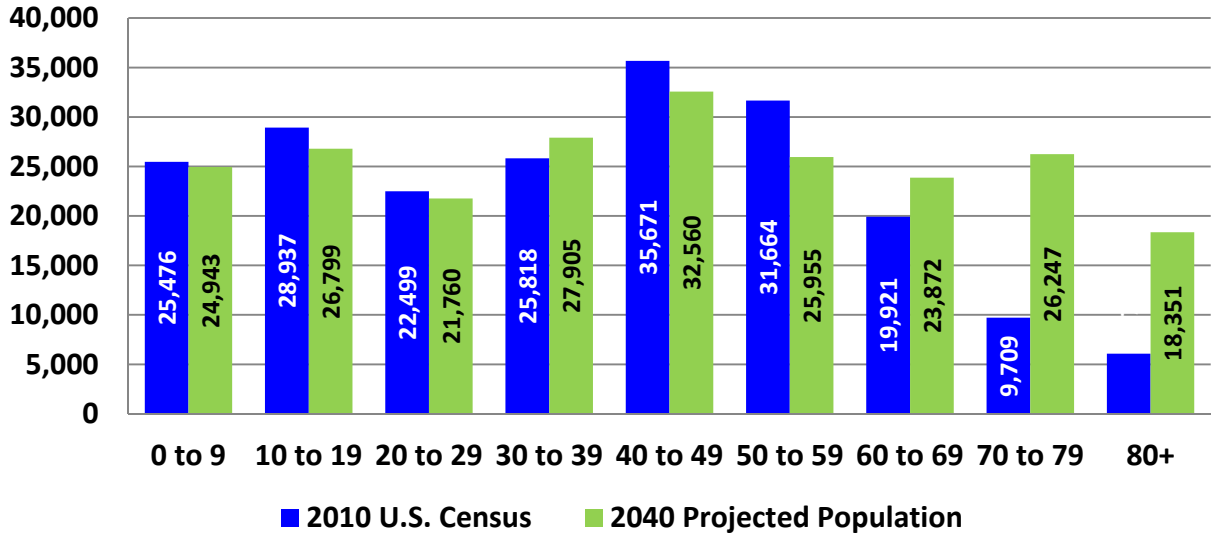


The City of Nashua rests along the Merrimack River in the southern portion of New Hampshire's Hillsborough County. Known as "The Gate City," it has a history as both a hub of culture and a midpoint of travel between the cities of Boston, MA and Concord, NH. Its 31 square miles are home to an estimated 86,823 people, making up 6.6% of the total population of NH and giving it the title of the second largest city in the state. As one of only two, full-service health departments in New Hampshire, the City of Nashua Division of Public Health and Community Services (DPHCS) provides public health services to a geographic area known as the Greater Nashua Public Health Region (GNPHR). This 205,845 person region is composed of the City of Nashua and the twelve surrounding towns of Amherst, Brookline, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Pelham and Wilton[3].

"We do not seek to improve public health simply by informing individuals of health risks. This is fairly obvious when the health risk comes from the environment… This idea might be less obvious when it comes to behaviours related to chronic disease, but the same insights apply. Individuals choose to drink, smoke, or eat more calories than they consume in physical activity, but their choices are influenced by the environment"

- Sir Michael Marmot

Figure 1.2 Population by Age from 2010 to 2040, NRPC



Source: Adapted from an original chart prepared by Nashua Regional Planning Commission (NRPC). Data Source: US Census Bureau, NRPC

In New Hampshire, approximately 48.4% of the total population is under 40 years of age. In Nashua, approximately 52.5% of the population is under 40 years of age. Nearly a quarter of the Nashua population is under the age of 20 years, with 17.9% between the ages of 5 and 19 years, and 6.6% under the age of 5 years. According to the 2008-2012 American Community Survey, the largest segment of the Nashua population is persons 40 to 59 years of age which makes up 29.5% of the total population. Of the remainder, 11.8% are aged 60 to 74 years and 6.2% are aged 75 and older. Broken down by gender, the population of Nashua is approximately 49.7% male and 50.3% female. The proportion of adult men to women in the Nashua population remains slightly larger until age 60, where the proportion reverses and women compose a larger percentage of the population (Table 1.1).

Source: Nashua PAL

Table 1.1 Population Estimates by Gender, 2008-2012

Age	Total	Male	Female
New Hampshire	**1,317,474**	**650,048**	**667,426**
Under 5	5.3%	5.5%	5.1
5 to 19 years	19.4%	20.1%	18.8%
20 to 39 years	23.7%	23.8	23.3%
40 to 59 years	31.7%	32%	31.4%
60 to 74 years	13.7%	13.5%	14%
75 years & over	6.2%%	5%	7.3%
Nashua	**86,823**	**43,180**	**43,643**
Under 5	6.6%	6.4%	6.7 %
5 to 19 years	17.9%	19.1%	16.8%
20 to 39 years	28%	28.2%	27.8%
40 to 59 years	29.5%	30.5%	28.7%
60 to 74 years	11.8%	10.9%	12.6%
75 years & over	6.2%	4.9%	7.4%
Source: US Census Bureau. 2008-2012 American Community Survey			

Table 1.2 Median Age 2008-2012

Median Age	
United States	37.2
New Hampshire	41.1
Amherst	43.5
Brookline	40.9
Hollis	44.2
Hudson	40.4
Litchfield	38.5
Lyndeborough	43.9
Mason	41.8
Merrimack	41.8
Milford	39.5
Mont Vernon	42.5
Nashua	38
Pelham	40.1
Wilton	44.8
Source: US Census Bureau. 2008-2012 American Community Survey	

New Hampshire is considered to be an aging state with a median age that is 41.1 in comparison to the median age of 37.2 of the nation. Nashua, (38), Milford (39.5), and Litchfield (38.5) hold the youngest median ages of the region. The remaining towns have median ages more consistent with the state, ranging from 40.1 in Pelham to 44.8 in Wilton[4]. In a trend consistent with the rest of the state, the GNPHR is projected to see an increase in the elderly population. By 2040, the number of individuals over 70 years old in the region will almost triple (Figure 1.2). Having services for health issues specific to the aging population will become an increasing priority for the region in the next few decades. For example, in 2012, the estimated percentage of adults 65+ with a disability in the region ranged from 17.7% in Mason to 34.5% in Wilton[5]. In time, the region will see a highly increased demand for resources, equipment, and providers specializing in geriatric health. Racial and ethnic minorities in the state however have much younger median ages when compared to the rest of the population: [6]

- Black/African American: 27.9
- Asian: 32.3
- Hispanic/Latino: 24.3
- Some Other Race: 25.0

Race, Ethnicity and Language

Despite making up a little under a quarter of the U.S. population, racial and ethnic minorities often bear a disproportionate burden of poor health outcomes than their white peers, even at similar income and education levels. The GNPHR is one of the most diverse areas in the state, with the greatest percentage of racial and ethnic minorities residing in Nashua (14.3%). The American Community Survey estimates indicate that 85.7 % of the Nashua population identifies as white, versus 94.2% of the state's overall population. The next largest group identifies as Hispanic or Latino, which makes up 9.7% of the city's population, but only 2.8% of the overall state population. When compared to the rest of New Hampshire, Nashua also has a larger percentage of individuals identifying as Asian and Black or African American at 7.0% and 2.1% respectively (Table 1.3). 15% of all foreign born individuals in the state are residents of Nashua. Racial and ethnic minorities residing in Nashua make up approximately 16% of all racial and ethnic minorities in the entire state of NH. The percentage of racial and ethnic minority residents in the remaining GNPHR towns ranges from 0.2% in Pelham to 5.7% in Hudson (Table 1.3). [7]

The Gardener's Tale

The following parable, paraphrased here, illustrates how structural racism impacts outcomes and perpetuates inequities over time. Imagine a gardener who has two packets of seeds, one for red flowers and one for pink flowers, and two flower boxes, one with poor soil and one with rich soil. The gardener, who loves red flowers, plants the red flower seeds in the box with the rich, fertile soil, and plants seeds for pink flowers in the box with poor, rocky soil. The seeds in the rich soil grow into big and beautiful flowers; the pink seeds in the poor soil fare poorly, becoming straggly, anemic-looking plants. As the seeds self-sow in the boxes, the progeny of the red flowers in the rich soil continue to thrive, while the pink flowers in the poor soil struggle to survive. The gardener concludes, "I was right to prefer the red flowers."

- *Dr. Camara Jones- "A Gardener's Tale" as paraphrased in "Health in All Policies"*

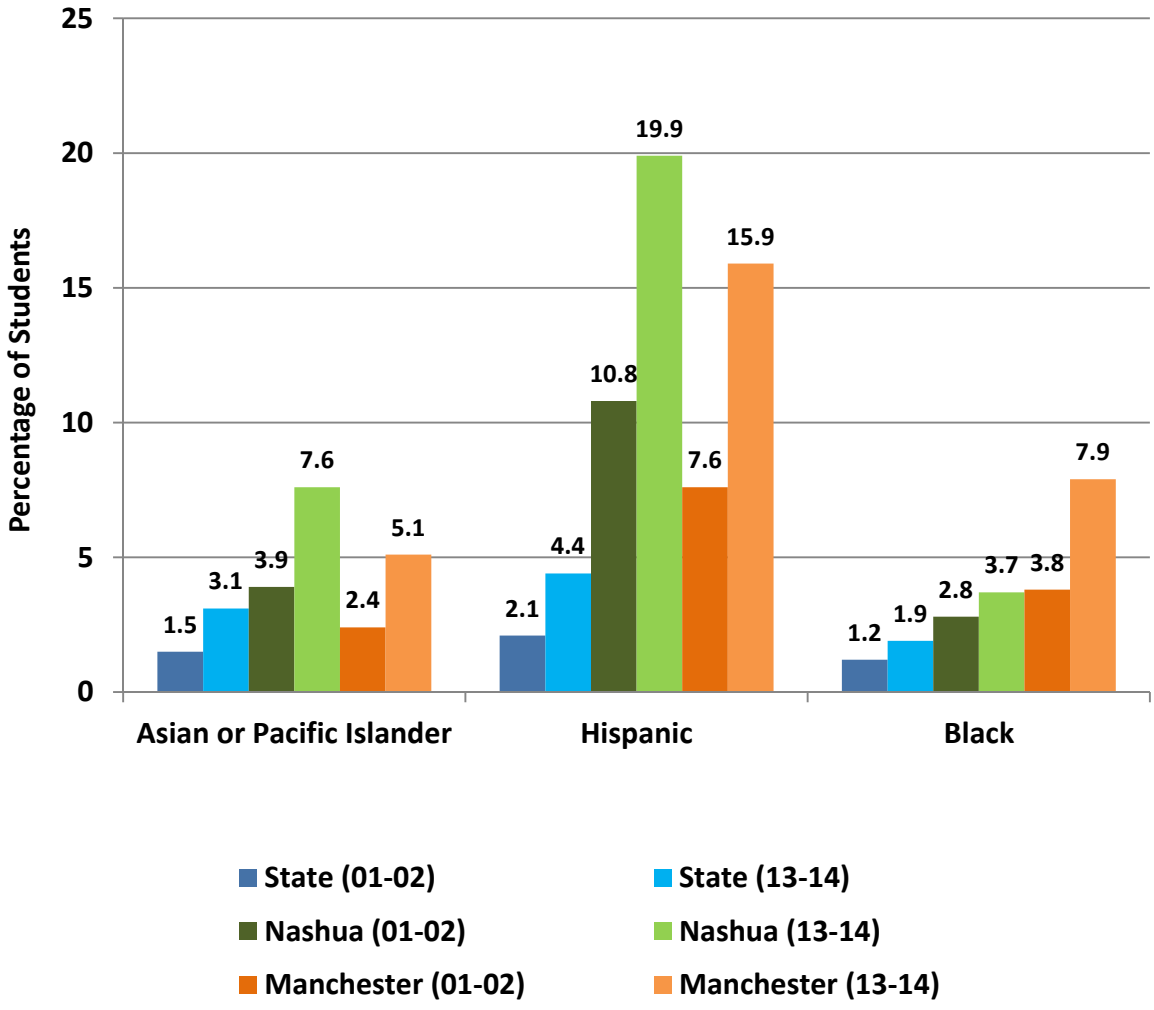
Table 1.3 Race and Ethnicity by Town, 2008-2012

	White	Hispanic /Latino	Black/ African American	Asian	Some Other Race	Two or More Races	American Indian/Alaskan Native	Native Hawaiian/ Pacific Islander
United States	74.20%	16.40%	12.60%	4.80%	4.80%	2.70%	0.80%	0.20%
New Hampshire	94.20%	2.80%	1.20%	2.20%	0.70%	1.60%	0.20%	0%
Manchester	85.70%	7.30%	4.50%	3.90%	2.20%	2.30%	0.10%	0.03%
GNPHR								
Amherst	93.70%	5.90%	0%	1.70%	1.10%	3.10%	0.40%	0%
Brookline	96.70%	2.40%	0.20%	0.90%	0%	1.00%	1.20%	0%
Hollis	95.70%	4.90%	0.10%	1.00%	2.10%	0.90%	0.10%	0%
Hudson	94.30%	4.30%	0.90%	3.60%	0.20%	1.00%	0%	0%
Litchfield	96.70%	2.90%	1.30%	0.80%	0%	1.30%	0%	0%
Lyndeborough	97%	0.50%	0%	0.30%	0%	2.00%	0%	0.70%
Mason	94%	0.50%	0.40%	2.70%	0.70%	2.10%	0%	0%
Merrimack	95.30%	2.40%	0.30%	2.50%	0.90%	0.90%	0.10%	0%
Milford	96.80%	1.60%	0.50%	1.20%	0%	0.80%	0.70%	0%
Mont Vernon	98.80%	2.20%	0.10%	0.50%	0%	0.60%	0%	0%
Nashua	85.70%	9.70%	2.10%	7.00%	2.70%	2.30%	0.20%	0.01%
Pelham	96.50%	1.60%	0.60%	0.70%	0.10%	1.60%	0%	0.50%
Wilton	98.80%	0.80%	0.02%	0.50%	0%	0.50%	0%	0.10%

Source: American Community Survey, 2008 - 2012

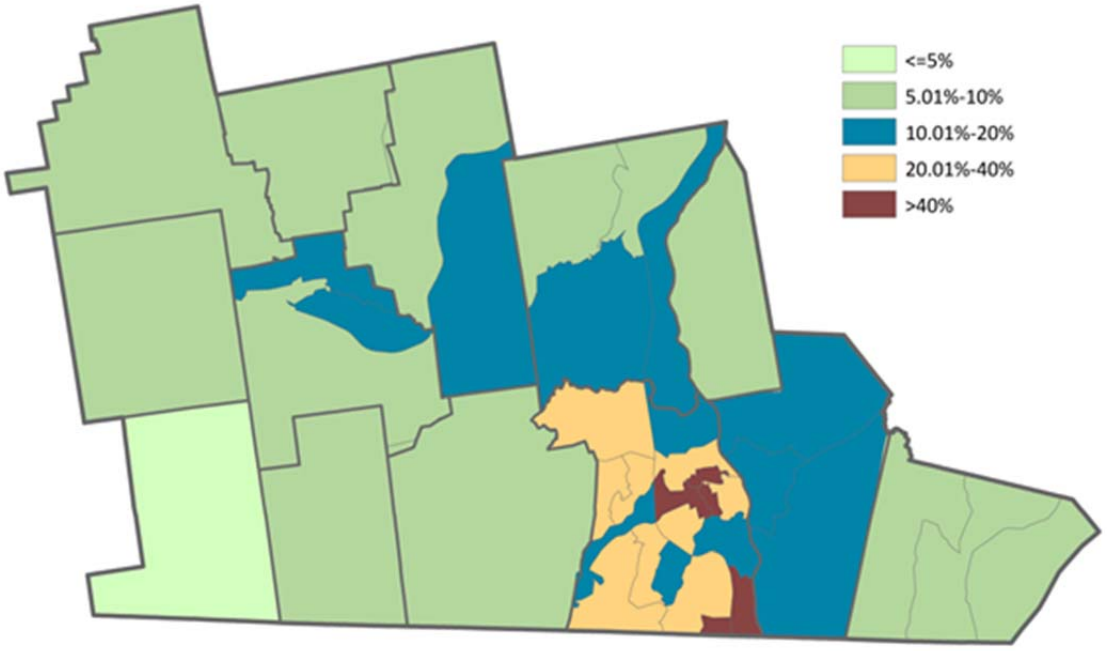
National population data shows that the growth of racial and ethnic minorities is occurring at a faster rate than those of their white counterparts. Younger median ages in minority groups, higher birth rates, increased immigration rates and a growing percentage of multi-racial children has led to increasing levels of diversity nationwide[8]. A similar trend can be found in the GNPHR. Nearly all towns have a greater percentage of child minorities as a percent of the population than adult minorities (Figure 1.4; Figure 1.5). In the Nashua School District, minority children made up over 25% of all enrollments versus the 12% of ethnic/racial minorities seen statewide. When compared to the entire state and Manchester, Nashua schools have a greater percent of Asian and Hispanic minorities (Figure 1.3)[9]. As these children age, they will further the trend of increasing racial and ethnic diversity throughout the entire region.

Figure 1.3 Student Enrollments by Race and Ethnicity, 2001-02; 2013-14



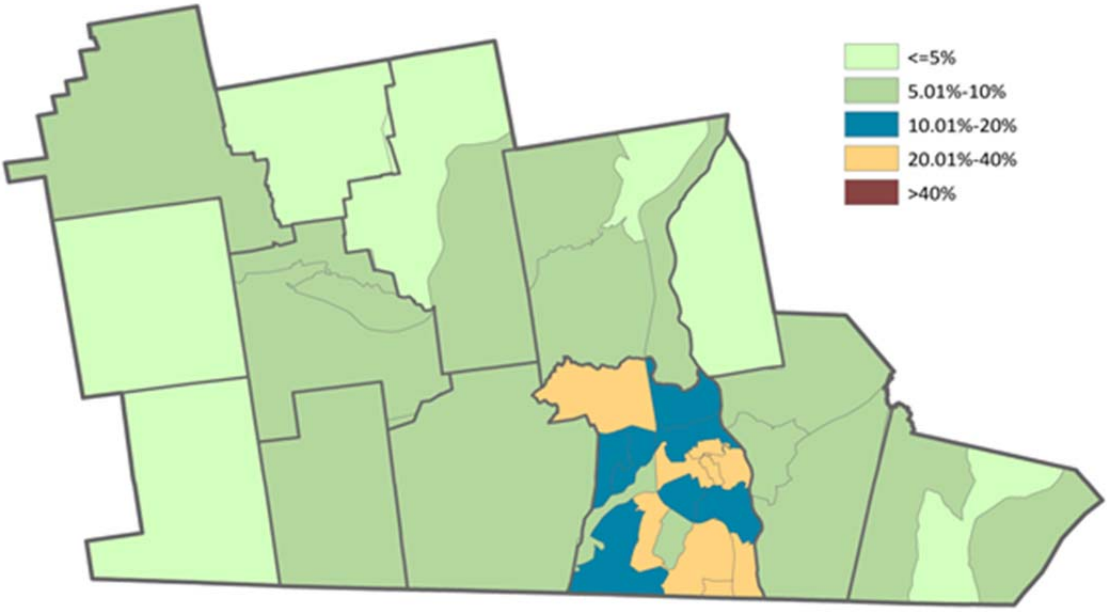
Source: NH Department of Education. School and District Profiles

Figure 1.4 Child Minorities as a Percent of the Population



Source: Adapted from an original chart prepared by Nashua Regional Planning Commission (NRPC). *Data Source: US Census Bureau*

Figure 1.5 Adult Minorities as a Percent of the Population

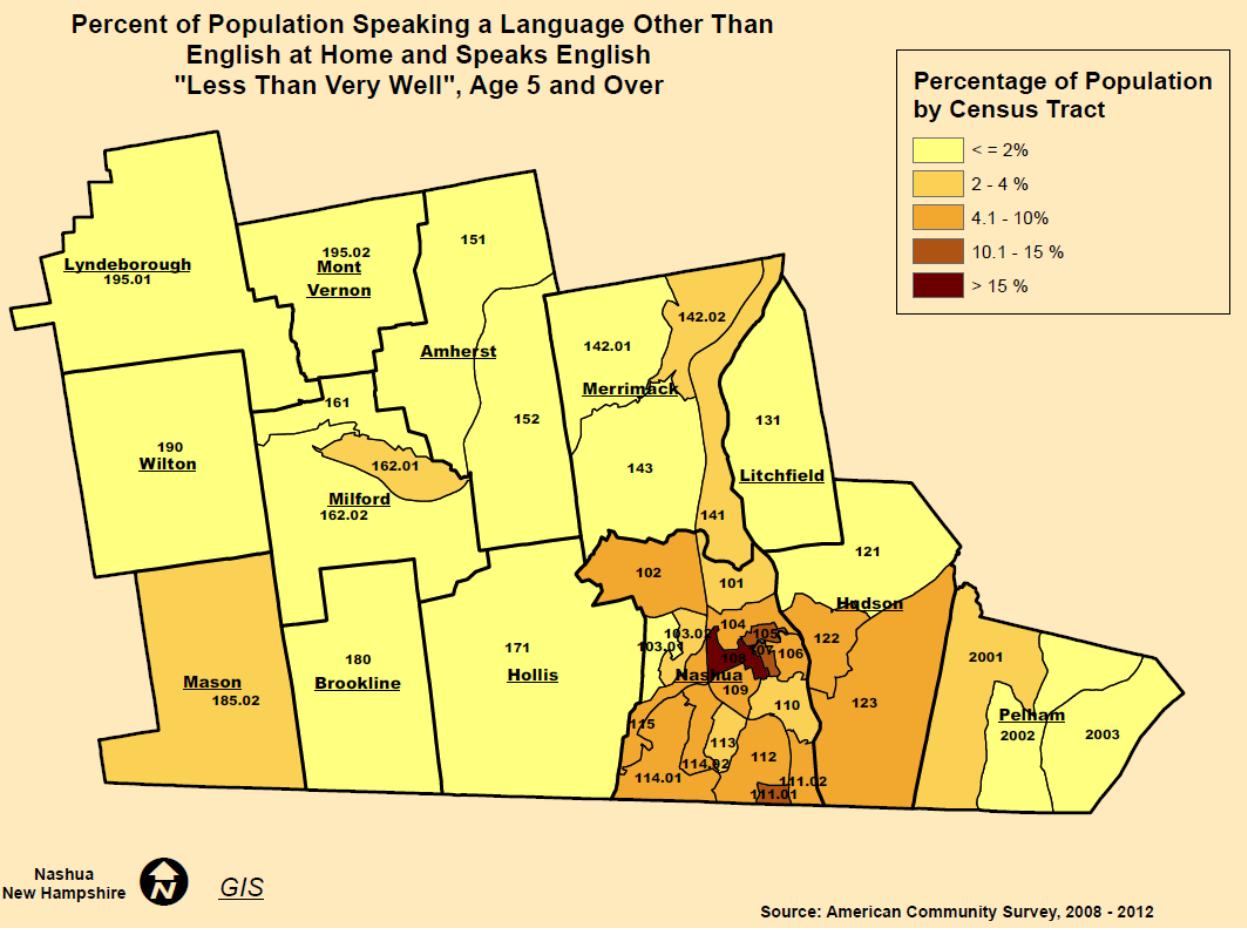


Source: Adapted from an original chart prepared by Nashua Regional Planning Commission (NRPC). *Data Source: US Census Bureau*

As both the state and region continue to grow in diversity, it will be of increasing importance to address the language needs and health barriers that exist for individuals with limited English proficiency (LEP) and for whom English is not their primary language. Evidence shows that LEP patients often face disparities in access to health care, decreased likelihood of having a consistent medical home, and more serious adverse outcomes from medical errors and drug complications[10].

Although English is the primary language used in the GNPHR, the region also houses a wide array of individuals speaking other languages. Students in the Nashua School District speak 53 different languages. In the 2013-14 school year, 5.6% of all students in the Nashua School District were classified as Limited English Proficient (n=655), which is much greater than the percentage of LEP students state wide (1.9%)[11]. In the region, the percentage of individuals speaking a language other than English at home ranges from 19.4% and 12.2% in Nashua and Hudson respectively, to 3.1% in both Mont Vernon and Lyndeborough. Towns with the greatest number of individuals speaking language "less than very well" include Nashua (7.7%), Hudson (4%), and Mason (2.2%). Geographically, the greatest percentages of LEP speakers reside in the Nashua census tracts of 111.01, 105, and 108 (Figure 1.6).[12]

Figure 1.6 Population that Speaks a Language Other than English at Home, 2008-2012

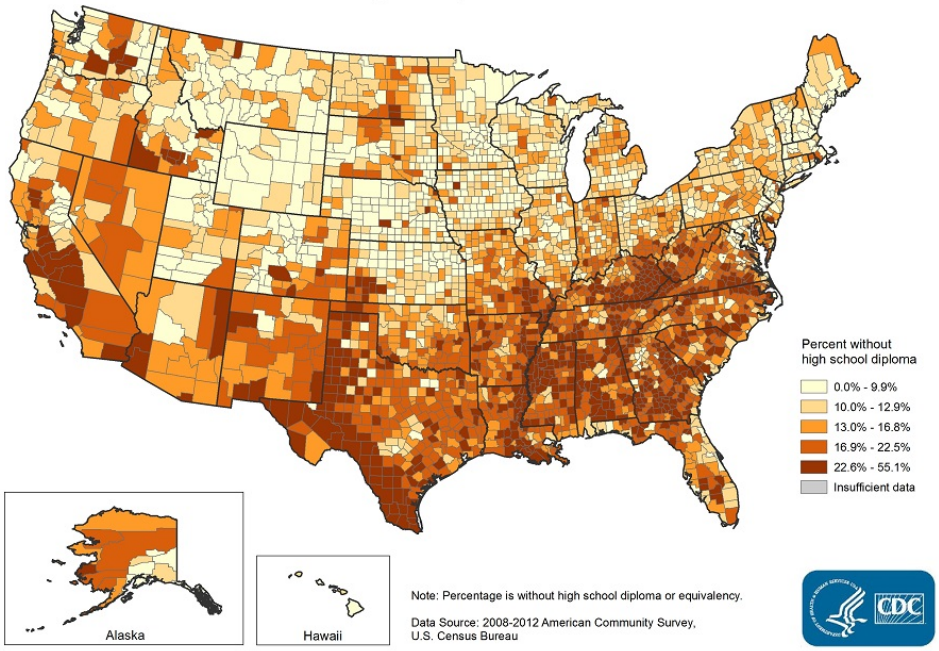


Source: American Community Survey, 2008-2012

Education

Many studies have found that educational attainment is one of the greatest indicators of health outcomes. Education is correlated with having a higher income, which in turn enables individuals to exercise greater influence over their health choices and outcomes. Lower education levels are often correlated with poor health, greater stress levels, and lower health outcomes,[13] while greater educational attainment is associated with greater quality of life, health-promoting behaviors, and a longer life expectancy[14].

Figure 1.7 Percentage Without a High School Diploma, Ages 25+, 2008-2012



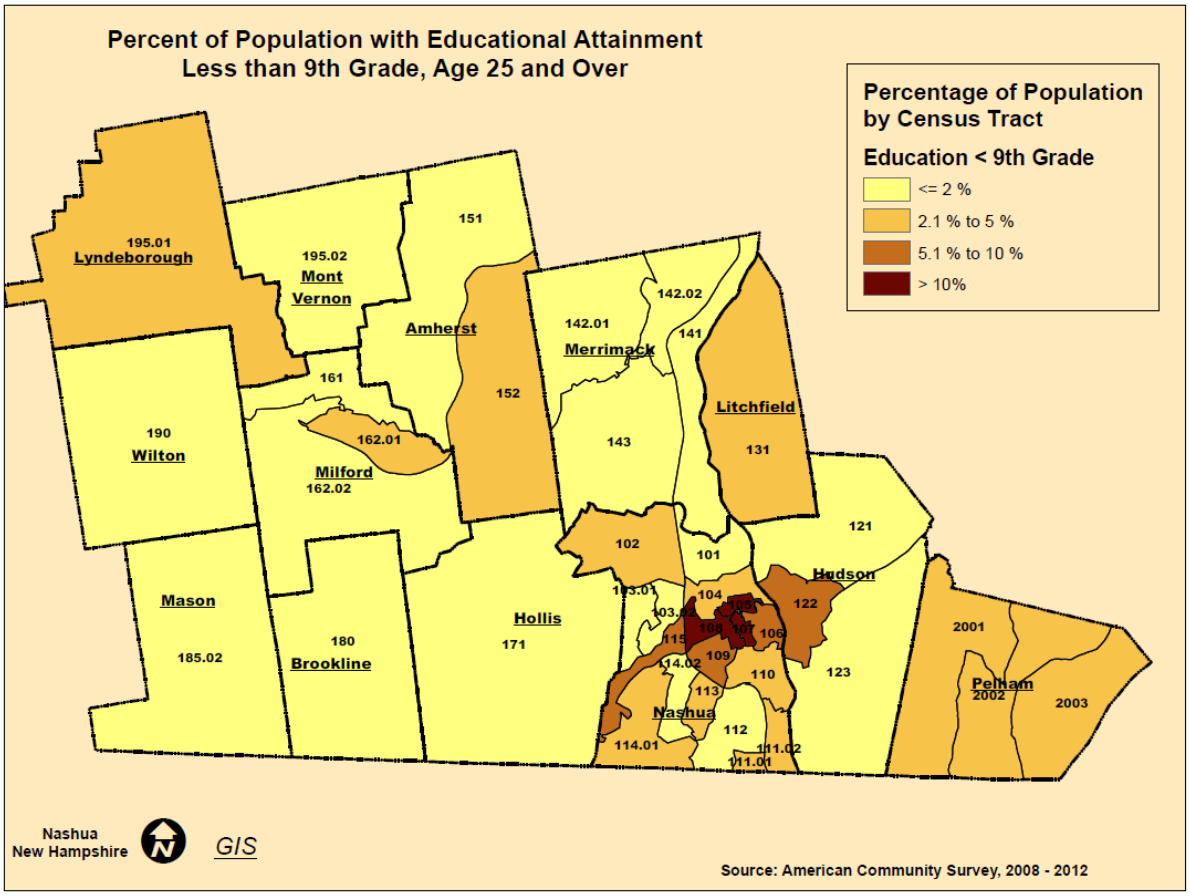
Source: Centers for Disease Control and Prevention

Every decade, the U.S. Department of Health and Human Services sets a number of goals, objectives, and targets to guide health promotion and disease prevention efforts nationwide. These goals, known as Healthy People 2020, cover health topics in all areas including chronic and infectious diseases, and the social determinants of health. The HP2020 target for individuals 18-24 who have obtained a high school diploma is 97.9%[15]. In the state of New Hampshire, 87.9% of the population 18-24 has obtained a high school diploma or equivalent, which falls short of that HP2020 objective. For the population aged 25 and older, however, over 90% have achieved a high school diploma or higher degree. This gives NH one of the highest percentages of high school graduates in the nation (Figure 1.7).[16] Each GNPHR town is also well over the HP2020 target objective of 82.4% of students graduating with a regular diploma 4 years after the 9th grade. However, there are still disparities in educational attainment throughout the region. Of those who have completed less than a 9th grade education level, the greatest percentage of individuals can be found in the Nashua census tracts of 105 (14.4%), 107 (10.5%), and 108 (15.1%) (Figure 1.8). In addition, the Hudson, Wilton-Lyndeborough, and Nashua School Districts see the highest 4-year dropout rate in the GNPHR at 6.36%, 5.48%, and 4.56% respectively. (Table 1.4)[17]

Table 1.4 Dropout Percentages and Rates by District, 2012-2013

	Annual Dropout Percentage	4 Year-Cumulative Rate
New Hampshire	**1.29%**	**5.06%**
Hollis-Brookline Cooperative	0.23%	0.92%
Hudson	1.63%	6.36%
Litchfield	0.40%	1.59%
Merrimack	1.01%	3.98%
Milford	0.67%	2.65%
Nashua	1.16%	4.56%
Pelham	1.00%	3.94%
Souhegan Cooperative	0.25%	1.00%
Wilton-Lyndeborough Cooperative	1.40%	5.48%
Source: NH Department of Education		

Figure 1.8 GNPHR, Percent with Less than 9th Grade Education, ACS, 2008-2012



Source: American Community Survey

Free and Reduced Lunch Program

Since 2007, nearly all school districts have seen an increase in the number of students eligible to receive free and reduced lunch (FRL). When compared to the percentage of students eligible statewide in the school year 2013-2014 (28.3%), Nashua has a greater percentage of student eligibility at 42.4%. However, the Manchester School District has a much greater eligibility percentage for FRL with over half of its students eligible for the program (51.0%). Of the towns in the GNPHR, excluding Nashua, all have a lower percentage of student eligibility than the state average, with the highest percentage in the Wilton-Lyndeborough School District where 26.5% of all students are eligible for FRL[18].

Table 1.5 Free/Reduced Lunch Eligibility by School District

	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
New Hampshire	19.5%	20.9%	24.0%	25.7%	26.7%	27.3%	28.3%
Manchester	36.3%	39.9%	39.01%	45.8%	47.7%	48.9%	51.0%
Amherst	2.3%	3.5%	4.6%	6.0%	5.9%	5.3%	5.8%
Brookline	3.2%	4.9%	9.3%	8.5%	8.5%	8.4%	8.4%
Hollis	3.0%	2.1%	3.2%	3.7%	3.7%	5.9%	4.3%
Hollis-Brookline Cooperative	3.0%	3.7%	5.7%	4.0%	4.4%	5.6%	5.3%
Hudson	8.6%	9.1%	13.3%	14.3%	16.0%	15.7%	16.6%
Lyndeborough	18.5%	20.0%	21.2%	N.A.	N.A.	N.A.	N.A.
Mason	N.A.	N.A.	15.7%	15.7%	10.7%	12.5%	10.6%
Merrimack	6.5%	6.7%	8.7%	9.4%	10.0%	11.5%	10.5%
Milford	15.7%	17.0%	19.9%	21.0%	23.2%	21.6%	21.2%
Mont Vernon	8.4%	4.8%	6.2%	7.2%	8.8%	7.9%	10.3%
Nashua	30.6%	31.7%	36.3%	38.3%	40.4%	41.0%	42.4%
Pelham	5.9%	6.9%	9.3%	9.4%	10.0%	11.8%	12%
Souhegan Cooperative	2.4%	2.9%	4.0%	5.1%	6.3%	5.3%	5.0%
Wilton	14.2%	19.5%	24.6%	N.A.	N.A.	N.A.	N.A.
Wilton-Lyndeborough Cooperative	9.6%	11.4%	19.2%	22.2%	30.0%	28.3%	26.5%

Source: NH Department of Education

Women, Infants & Children/Head Start

Since the late 1960s, the Women, Infants, and Children (WIC) and Head Start programs have worked to improve the nutrition, health, and education status of young families nationwide. In its nearly 40 years of permanent service, WIC has grown from 88,000 participants nationwide, to providing over 8.6 million women, infants, and children with nutritional needs, nutritious food, education, and health referrals at no cost to the participant.[19] Head Start has served more than 31 million children and families since its creation and in the year 2013 the program was funded to provide services to nearly 1 million children and pregnant women in the United States[20]. In 2013, New Hampshire WIC provided services to 17,610 participants and Head Start received funding for 1,618 spaces for Head Start services, which are known as opportunities.[2122] The vendor of WIC and Head Start Services for the City of Nashua and the rest of Hillsborough County is Southern New Hampshire Services (SNHS).

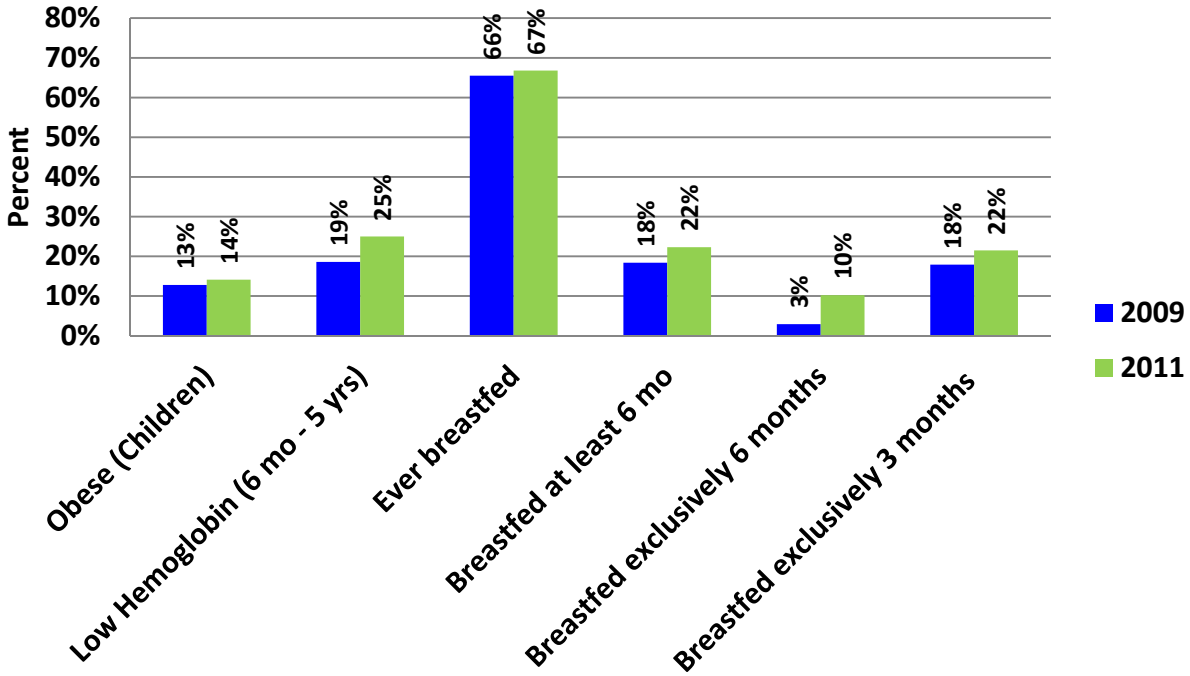
SNHS Head Start has consistently received funding for a total of 149 service opportunities for children and their families in the City of Nashua since the addition of the Early Head Start Program in 2010. These opportunities are divided between the following programs:

- Part–Day Head Start: 4 hours of comprehensive preschool services including developmental, health and nutrition screenings, family support and parenting education and breakfast and lunch. – **71 Opportunities**
- Head Start with Wrap Around Child Care: For families who are working, going to school, or involved in a NH Employment Program. - **40 Opportunities**
- Center Based Early Head Start: Developmental screening, assessments and activities to enhance the development of infants and toddlers. - **16 Opportunities**
- Home Based Early Head Start: Weekly home visits for each enrolled family and child to promote parental ability to support the child's development. - **22 Opportunities**[23]

From 2012-2013, SNHS Head Start offered 596 funded opportunities at any given time to Hillsborough and Rockingham County residents. However, an individual may not remain in the Head Start program for an entire year due to changes in residence, income, etc. As a result, SNHS Head Start has serviced a total of 776 participants from 2012-2013. Of its entire service area, SNHS estimates servicing 15% of the income eligible children and families with an average monthly enrollment of 100% in its programs.[24] Reported outcomes of children reaching proficiency in Work Sampling domains range from a 32% increase in areas associated with Creative Arts Expression to a 44% increase in proficiency in Logic and Reasoning.

Of the 17,610 WIC participants statewide, Hillsborough County and Nashua WIC participants make up 38.7% of all enrollments with 1,728 in Nashua and 5,085 in Hillsborough County. Since 2009, the average monthly benefit received per participant has decreased $6.64 to $115.76 in 2013.[25] As of June 2014, Nashua WIC provides nutrition services to 181 pregnant women, 74 breastfeeding women, 155 postpartum women, 442 infants, and 904 children for a total of 1756 participants. From 2009 to 2011, WIC has also observed an increase in the percentage of infants that have been breastfed for all recorded time frames (Figure 1.9). Nashua WIC serviced a greater percentage of children with low hemoglobin levels in 2011 than previously seen in 2009. In 2010, the percentage of infants serviced by WIC who had either a high or low birth weight was 7.6% and 9.6% respectively.[26]

Figure 1.9 Status of WIC Clients 2009, 2011



Source: NH DHHS

Income and Poverty

Income is a social determinant of health with widely reaching impacts. When individuals are unable to obtain access to affordable food, medical care and housing, their health and quality of life in all areas usually suffers as well. Access to financial resources and financial stability grants both individuals and families greater resilience to external pressures that may be detrimental to health and wellbeing.[27]

Table 1.6 Household Income by Geography, ACS, 2008-2012

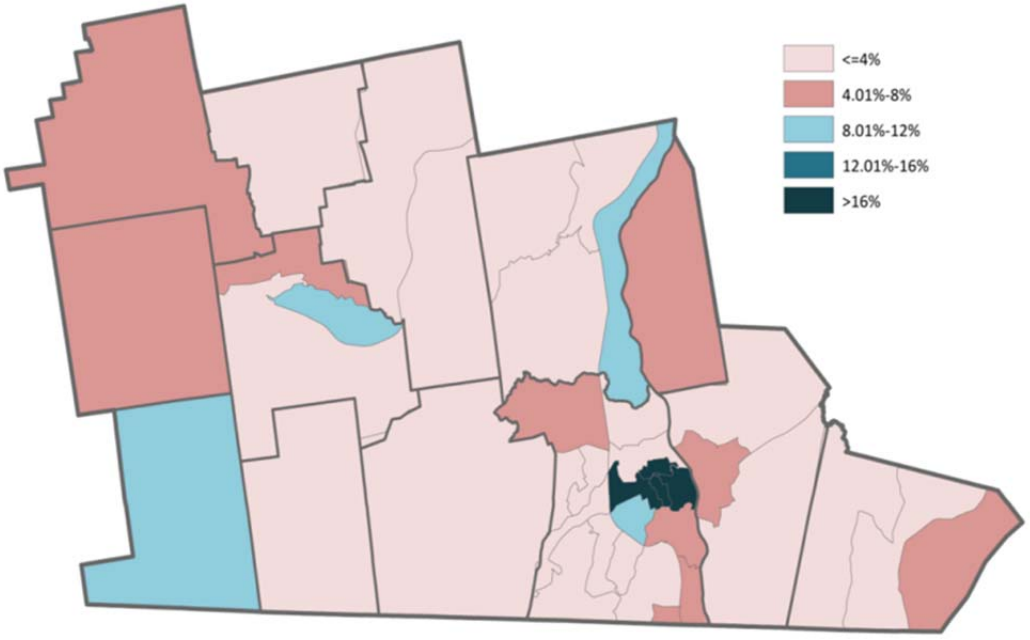
	Median Household Income	Percent Below Poverty Level
United States	53,046	14.9%
New Hampshire	64,925	8.4%
Hillsborough County	70,472	8.0%
Manchester	54,320	14.1%
GNPHR		
Amherst	113,260	3.6%
Brookline	102,785	2.9%
Hollis	102,159	1.2%
Hudson	85,500	3.9%
Litchfield	10,8466	4.8%
Lyndeborough	85,457	4.9%
Mason	88,750	10.9%
Merrimack	90,014	2.8%
Milford	68,451	5.9%
Mont Vernon	93,828	4.2%
Nashua	65,671	9.3%
Pelham	96,852	3.6%
Wilton	68,693	7.1%
Source: American Community Survey, 2008-2012		

New Hampshire is considered to be one of the nation's "healthiest, wealthiest" states, with the U.S. Census Bureau ranking the state second for the highest median household income from 2010-2012 ($68,415)[28]. According to the American Community Survey estimates, this is significantly higher than the national median household income of $53,046. In the GNPHR, the median household income varies greatly between towns with the lowest being Nashua at $65,671 and the highest being Amherst at $113,260 in 2012 (Table 1.6).

Despite having this relative level of affluence, experiencing poverty is a reality for many families in the state of New Hampshire and the Greater Nashua Public Health Region. Compared to the national percentage of individuals below poverty (14.9%), all towns in the GNPHR have lower poverty levels than the nation, with percentages ranging from 1.2% in Hollis to 10.9% in Mason (Table 1.6; Figure 1.10).[29]

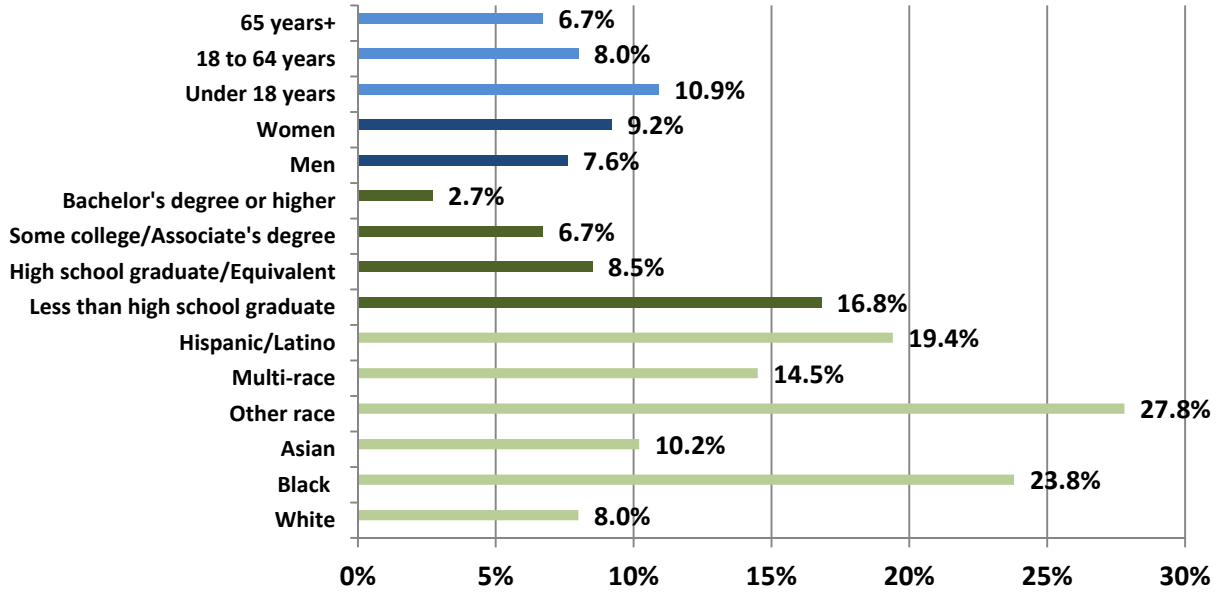
Poverty is not evenly distributed geographically or among population groups. Nashua census tracts 105 (29.2%), 106 (27.2%), 107 (30.5%), and 108 (29.3%) all have poverty levels greater than the national baseline (Figure 1.10). Statewide, racial/ethnic minorities, individuals without high school diplomas, and women, particularly those with children, all experience a disproportionate burden of poverty than their white, more educated, male counterparts (Figure 1.11). When compared to both the state and the rest of Hillsborough County, a greater percentage of families in Nashua are living below the poverty level. Female householders, particularly those with children, experience poverty at a much greater percentage than families of any other type across all geographies (Table 1.7.).

Figure 1.10 Percent of the Population in Poverty



Map prepared by the Nashua Regional Planning Commission (NRPC). Data Source: American Community Survey 2007-2011, U.S. Census Bureau.

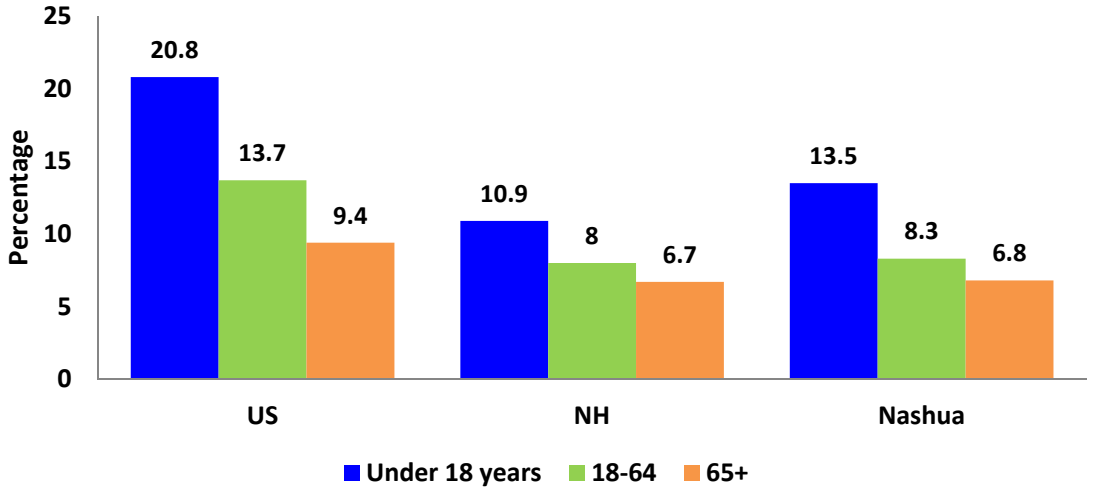
Figure 1.11 Percentage of Population below Poverty Level by Select Social Determinants of Health



Source: American Community Survey, 2008-2012

The percentage of residents living below the poverty line for both NH and Nashua was below that of the United States at all ages. Although poverty can be observed in all age brackets, children have the greatest percentage of individuals in poverty. Although a greater percentage of child poverty is consistent across geographies, there is a larger percent of Nashua children in this category (13.5%) when compared to the entire state (10.9%). These estimates have also increased since 2009, when the percent of children falling below the poverty were 11% and 9% for Nashua and the state respectively (Figure 1.12.)[30]

Figure 1.12 *Age Distribution of Individuals Below the Poverty Level, 2008-2012*



Source: American Community Survey 2008-2012

Table 1.7 Percent of Families Living Below the Poverty Level

	Families	Married-couple Families	Female Householder
United States	10.9%	5.4%	30.1%
New Hampshire	5.6%	2.3%	22.5%
Hillsborough County	5.6%	2.0%	22.6%
Nashua	6.7%	2.2%	23.2%
With Related Children Under 18 Years of Age			
United States	17.2%	7.9%	39.1%
New Hampshire	9.4%	2.9%	31.2%
Hillsborough County	9.4%	2.7%	30.0%
Nashua	11.1%	3.0%	34.5%
Source: American Community Survey, 2008-2012			

Employment

Economic recovery from the recession of the late 2000s is a process that is still occurring throughout the United States. In 2009, the national unemployment rate spiked and has seen a gradual decline in the years following. However, the national unemployment rate is 6.1% as of June 2014, remaining higher than the pre-recession level of 4.6% in 2007.[31] The New Hampshire Employment Security Economic & Labor Market Information Bureau (NHES – ELMI) estimates that as of 2012, unemployment levels in the Greater Nashua region have ranged from 4.2% in Lyndeborough to 7.2% in Pelham (Table 1.8)[32]. According to the U.S. Department of Labor, New Hampshire has the 7th lowest unemployment rate in the U.S. at 4.4% as of June 2014[33]. NH labor force participation rates (the share of the population above 16 who is either employed or actively looking for work) were also impacted by the recession. From 2003 to 2013, New Hampshire labor participation rates dropped from 71.5 to 69.3[34].

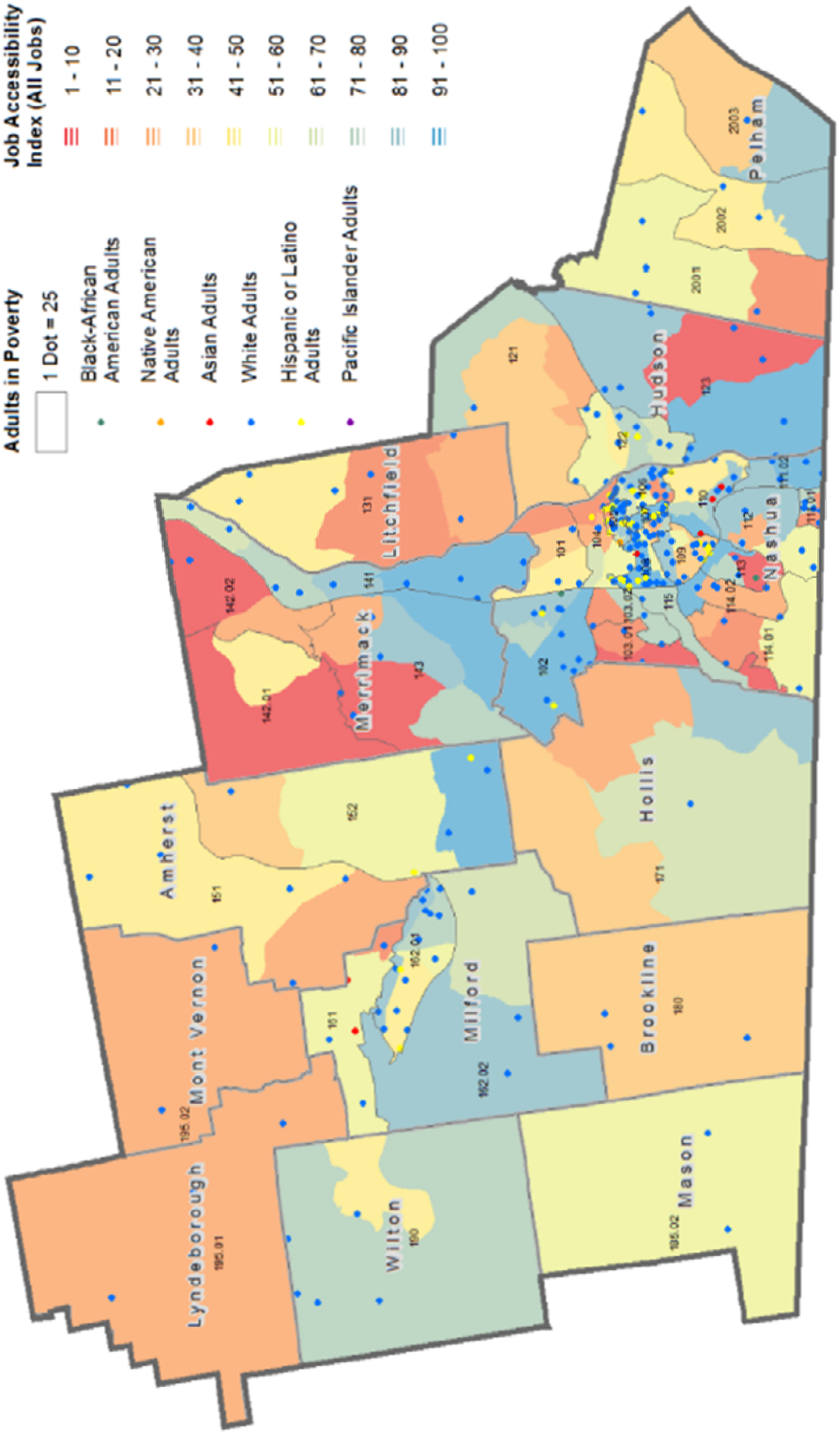
Table 1.8 Labor Force and Unemployment Average, NH and GNPHR, 2012

	Total Labor Force	Annual Unemployment Average (2012)
New Hampshire	742,582	5.5%
Amherst	6,057	4.8%
Brookline	2,761	4.8%
Hollis	4,098	4.7%
Hudson	14,900	6.0%
Litchfield	5,026	5.2%
Lyndeborough	1,021	4.2%
Mason	835	4.7%
Merrimack	16,008	4.9%
Milford	9,227	4.7%
Mont Vernon	1,375	4.5%
Nashua	49,766	6.1%
Pelham	7,507	7.2%
Wilton	2,173	4.8%
Source: NHES – ELMI		

The New Hampshire Employment Security Economic & Labor Market Information Bureau projects that employment in all major occupation groups will increase over the next decade, with healthcare support being the fastest growing group (22.6% increase from 2012-2022)[35]. Triggered by the growth of the aging population, demand for home health aides and personal aides will increase, as well as the need to replace workers who retire. Additional areas that will see major growth are computer and mathematical positions, healthcare practitioners and technical positions, and personal care and service occupations.

The job accessibility index is a measure of factors that influence ability to obtain employment including the distance to job locations, the amount of job opportunities and the level of competition for those jobs. Throughout the region, accessibility to employment is at moderate levels, independent of race, ethnicity or income. However, there is variation in job accessibility by geography. Nearly all towns in the Greater Nashua region have areas of lower job accessibility, with the lowest pockets found around the more rural communities. Areas in community centers or major regional corridors however have relatively higher levels of job accessibility (Figure 1.13).

Figure 1.13 Job Accessibility and Adults in Poverty by Race and Ethnicity



Source: US Department of HUD Office of Police Development and Research, 2013; Nashua Regional Planning Commission

Housing and Neighborhoods

Quality housing is a strong indicator of a healthy life. Poor housing often comes with health risks such as lead poisoning and increased injuries and illnesses. By having safe, affordable and stable housing, individuals and families are in an optimal position to focus on other areas of life such as education. Households that spend more than 30% of their income on housing are classified as housing burdened and can have difficulties affording other basic necessities such as food and clothing. According to the U.S. Department of Housing and Urban Development, 12 million households nationwide spend more than 50% of their incomes on housing. [36]

On average, about a third of all households in each town in the GNPHR in the region experience a housing burden (Table 1.9). This is significantly lower than both the nation and state as a whole, in which over half of all homes experience housing cost burden. Percentages of cost-burdened households in the GNPHR range from, 27.1% (n=132) in Mason to 42.2% in Milford (n=2460) and included almost 28,000 households.[37] In 2014, the average cost of a two-bedroom apartment with rent and utilities at Fair Market Rent in New Hampshire was $1,049 per month. To afford this type of housing, households must earn at least $3,498 monthly or an hourly wage of $20.48. A minimum wage worker in NH would need to work 111 hours per week for 52 weeks each year in order to spend less than 30% of their income on housing. The estimated mean wage for a renter in the state is $13.35, resulting in gaps between what is affordable for many residents and what the Fair Market Rent is for the state (Table 1.10). [38]

Table 1.9 Housing Burden, 2007-2011

	Household Cost Burden Less than 30%	Household Cost Burden Greater than 30%	Percentage of Burdened Households
United States	74,764,275	39,791,625	53.2%
New Hampshire	326,010	185,210	56.8%
Amherst	2635	1310	33.2%
Brookline	955	705	42.4%
Hollis	1740	915	34.5%
Hudson	5905	2875	32.7%
Litchfield	1,840	890	32.6%
Lyndeborough	384	193	33.5%
Mason	353	131	27.1%
Merrimack	6235	3175	33.7%
Milford	3365	2460	42.2%
Mont Vernon	523	302	36.6%
Nashua	22,090	12,890	36.8%
Pelham	2,794	1,445	34.1%
Wilton	850	549	39.2%
Source: U.S. Department of Housing and Urban Development			

Table 1.10 Gap between Affordable Rent and Fair Market Rent, New Hampshire, 2014

Mean Renter Wage Earner	Extremely Low Income Households	Minimum Wage Earner	SSI Recipient
$355	$466	$672	$833
Source: National Low Income Housing Coalition			

Homelessness

Over 600,000 people in America are experiencing homelessness on any given night in the United States and nearly a quarter of those are children[39]. Homelessness is considered to be an "invisible" epidemic, having much greater prevalence than what is easily observed. For example, the U.S. Department of Housing and Urban development estimates that only 14% of individuals experiencing homelessness were counted in statewide Continuum of Care counts. Unfortunately, experiencing homelessness is so common that for many people the odds that they will become homeless are greater than the likelihood of receiving a cancer diagnosis or becoming a victim of a violent crime.[40] Racial and ethnic minorities and males make up the largest percentage of the nation's sheltered homeless population at 61% and 63% respectively. Nationwide, 63.1% of sheltered homeless households are composed of one individual. The Substance Abuse and Mental Services Administration (SAMHSA) indicates that nearly a third of chronically homeless individuals have mental health conditions and half of the chronically homeless also have a co-occurring substance use disorder.[41]

In 2012, the homeless population in New Hampshire made up 0.2% of the total homeless population of the United States. In the GNPHR, barriers to ending chronic homelessness include limited availability of affordable housing units and a lack of employment that provides a living wage[42]. In January 2014, of the total 2,210 homeless individuals in the state of New Hampshire as captured by the 2013 Annual Point in Time Count 27.8% (n=635) of those individuals could be found in Hillsborough County. Contrary to the national trend, the majority of homeless in the county are a part of family units (63.6%) with 158 families either sheltered, unsheltered, or temporarily residing with a relative or friend. About 83% of the homeless population of Hillsborough County resides in either a shelter or with a family or friend. However, that means nearly 1 out 3 homeless individuals in Hillsborough County is unsheltered on a given night. According to 2013 Point in Time estimates of sheltered clients for the Nashua/Hillsborough County CoC, 76 children made up over half of the total number of sheltered homeless in the area.[43]

"Poor health is both a cause and a result of homelessness. Many people are reduced to homelessness because of poor health, which can rapidly escalate into employment problems, financial difficulties and housing issues with over half of personal bankruptcies in the US resulting from health issues"

National Coalition for the Homeless

Lesbian, Gay, Bisexual and Transgendered Populations

The Lesbian, Gay, Bisexual, Transgendered and Queer community (LGBT) is a sexual and gender minority group including individuals of all races, socioeconomic statuses, states, and sexes. Members of this community often face health disparities that are linked to discrimination and social stigma, including high rates of psychiatric disorders, substance abuse, and suicide.[44] HP2020 identifies a number of areas that will need to be addressed in the future in order to improve LGBT health including the need for an LGBT wellness model, availability of safe meeting and living spaces, implementing anti-bullying policies in schools, and the dissemination of effective HIV/STD interventions.

Healthy People 2020 report a number of health issues among the LGBT population that requires specific attention from healthcare and public health professionals including:

- LGBT youth are more likely to be homeless and 2 to 3 times more likely to attempt suicide.
- Elderly LGBT individuals face additional barriers to health because of isolation and a lack of social services and culturally competent providers.
- Higher rates of HIV and STDs among gay men.
- Increased likelihood of being overweight or obese for lesbian and bisexual females.
- The highest rates of tobacco, alcohol, and drug use among LGBT populations. [45]

The National Survey of Family Growth finds that 5.1% of females and 3% of males between ages 18-44 identify as being either homosexual or bisexual (Table 1.11). In the state of New Hampshire, unmarried same sex households are estimated to make up 2,826 or 0.5% of all households in the state.[46] According to 2013 Youth Risk Behavior Survey data, nearly 5% of students in the GNPHR have had sexual contact with both males and females in their lifetime compared to the state percentage of 4.1%.[47] Local level data is not available for leading health issues in the LGBT populations of the GNPHR. However, there are many disparities observed nationwide, including increased heart disease and increased levels of substance misuse that providers servicing LGBT populations should be aware of in order to best respond to their health needs (Table 1.12).

Table 1.11 Sexual identity and behavior for men and women ages 18-44, United States, 2006-2010

	Females	Males
Heterosexual or straight	93.6%	95.6%
Homosexual or gay (or lesbian)	1.2%	1.8%
Bisexual	3.9%	1.2%
Ever had sexual activity with a same-sex partner	14.2%	5.1%
Source: National Center for Health Statistics, National Survey of Family Growth		

Table 1.12 Leading Health Issues in Lesbian, Gay and Bisexual Populations

	Lesbian	Gay	Bisexual
Heart Disease	Greater prevalence of physical inactivity, obesity, and smoking than other women.	Concern among men of all orientations. However, prevalent tobacco & alcohol use among gay men increases risk.	Women: More likely to report higher smoking rates, blood pressure levels, BMI, and cholesterol. Men: Greater prevalence of tobacco and alcohol use.
Cancer	Fewer full-term pregnancies which is linked to increased ovarian and endometrial cancer. Less likely to visit doctor for preventive screenings like mammograms/breast exams, greater tendency to be overweight.	Increased risk of prostate, testicular, colon, and anal cancer. Gay men receiving anal sex increased risk of HPV infection and anal warts.	Women: More likely to self-report higher rate of cancers, particularly breast cancer. Less likely to give birth at all or at an early age, which is linked to increased risk of ovarian and endometrial cancer. Men: Increased risk of anal cancer for those receiving anal sex.
Fitness/ Obesity	Higher prevalence of obesity when compared to women of other orientations. Observed among African-Americans, rural/urban dwellers, lower education, and low socioeconomic status.	Body image problems and increased likelihood of eating disorders than heterosexual men.	More likely to report sufficient physical activity than heterosexual adults.
Injury/ Violence	56.4% of lesbian/gay adults report intimate partner violence.	May experience two types of violent victimization: **criminal violence** based on sexual status or **domestic.**	47.4% of adults more likely to report intimate partner violence than heterosexuals (17.2%).
Substance Abuse	Between 1.5 and 2 times more likely to smoke than heterosexual women. Significantly more likely to drink heavily.	Use of alcohol, tobacco, and illicit drugs at higher rate than general population.	Highest smoking rates of any subgroup: Between 30-40%. Higher rates of binge drinking than heterosexual individuals: 22.6%
STD/HIV		53% of all newly diagnosed HIV infections in 2006 and accounted for 48% of all HIV cases. High rates of other infections.	Women: More likely to report high sexual risk behaviors than heterosexual women (e.g. – multiple partners, sex with MSM partner). Men: More likely to report having an STD than heterosexual men.
Source: Substance Abuse and Mental Health Administration[48]			

"A characteristic common to groups that experience health inequities—such as poor or marginalized persons, racial and ethnic minorities, and women—is lack of political, social or economic power. Thus, to be effective and sustainable, interventions that aim to redress inequities must typically go beyond remedying a particular health inequality and also help empower the group in question through systemic changes…" ***- World Health Organization***

[1] World Health Organization (WHO). (2003). Social Determinants of Health. The Solid Facts. Retrieved July 30, 2014 from http://www.euro.who.int/__data/assets/pdf_file/0005/98438/e81384.pdf?ua=1.

[2]Centers for Disease Control and Prevention (CDC). *Social Determinants of Health: Frequently Asked Questions*. Retrieved July 30, 2014 from http://www.cdc.gov/socialdeterminants/FAQ.html.

[3] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t.

[4] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t.

[5] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t.

[6] Measuring New Hampshire's Economic Health a Workforce Perspective http://www.nhes.nh.gov/elmi/products/documents/ear-2013.pdf

[7] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t.

[8] Esri (2012). *Minority Population Growth – The New Boom.* Retrieved August 12, 2014 from http://www.esri.com/library/brochures/pdfs/minority-population-growth.pdf.

[9] NH Department of Education. (2001-2002; 2013-2014) *NH School and District Profiles.* Retrieved July 28, 2014 from http://my.doe.nh.gov/profiles/?county=Hillsborough.

[10] Institute of Medicine. (2009). *Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement*. Retrieved on July 28, 2014 from http://www.iom.edu/~/media/Files/Report%20Files/2009/RaceEthnicityData/Race%20Ethnicity%20report%20brief%20FINAL%20for%20web.pdf.

[11] NH Department of Education. (2013-2014) NH School and District Profiles: District: Nashua. Retrieved August 12, 2014 from http://my.doe.nh.gov/profiles/profile.aspx?oid=&s=&d=371&year=2014&tab=student.

[12] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t..

[13]World Health Organization (WHO). (2014). *Heath Impact Assessment (HAI): The Social Determinants of Health*. Retrieved on July 30, 2014 from http://www.who.int/hia/evidence/doh/en/

[14]Healthy People 2020. (2014). *Social Determinants.* Retrieved July 31, 2014 from http://www.healthypeople.gov/2020/LHI/socialDeterminants.aspx?tab=overview

[15] Healthy People 2020. (2014). *Educational and Community-Based Programs*. Retrieved August 12, 2013 from http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=11#413.

[16] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t..

[17] NH Department of Education. (2012-2013) *Dropouts and Completers.* Retrieved August 12, 2014 from http://www.education.nh.gov/data/dropouts.htm.

[18] NH Department of Education. (2012-2013) *Attendance and Enrollment Reports*. Retrieved August 12, 2014 from http://www.education.nh.gov/data/attendance.htm#free_reduced_district.

[19] US Department of Agriculture. (2014). *WIC – The Supplemental Nutrition Program for Women, Infants, and Children.* Retrieved August 06, 2014 from http://www.fns.usda.gov/sites/default/files/WIC-Fact-Sheet.pdf

[20] Administration for Children and Families, Office of Head Start. *Head Start Program Facts Fiscal Year 2013.* Retrieved August 06, 2014 from https://eclkc.ohs.acf.hhs.gov/hslc/data/factsheets/docs/hs-program-fact-sheet-2013.pdf

[21] Administration for Children and Families, Office of Head Start. Head Start Program Facts Fiscal Year 2013. Retrieved August 06, 2014 from https://eclkc.ohs.acf.hhs.gov/hslc/data/factsheets/docs/hs-program-fact-sheet-2013.pdf

[22] NH Department of Health and Human Services. *Annual State Plan for Fiscal Year 2014.* Retrieved August 06, 2014 from http://www.dhhs.nh.gov/dphs/nhp/wic/documents/wic-state-plan.pdf

[23] Wall, Susan, SNHS, Inc. Child Development Program, Head Start/Early Head Start, personal communications May 30, 2014.

[24] Southern NH Services (2012-2013). *Annual Reports from Southern New Hampshire Services* Retrieved July 09, 2014 from http://www.snhs.org/wp-content/uploads/2013/12/HS-Annual-Report-2013-2014.pdf

[25] US Department of Agriculture. (2009-2013). *Annual State Level Data.* Retrieved August 06, 2014 from http://www.fns.usda.gov/pd/wic-program.

[26] Richards, Lisa, New Hampshire Division of Public Health Services, Department of Health and Human Services, personal communications , July 02, 2014.

[27] Public Health Institute. (2013). *Health in All Policies. A guide for State and Local Government.* Retrieved August 4, 2014 from http://www.phi.org/uploads/files/Health_in_All_Policies-A_Guide_for_State_and_Local_Governments.pdf.

[28] U.S. Census Bureau. (2012). *Current Population Survey, 2011, 2012, and 2013 Annual Social and Economic Supplements*. Retrieved August 12, 2014 from https://www.census.gov/hhes/www/income/data/statemedian/

[29] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t..

[30] US Census Bureau. (2008-2012). 2008-2012 American Community Survey 5-Year Estimates. Retrieved on August 6, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t..

[31] US Department of Labor, Bureau of Labor Statics. (2014). *Labor Force Statistics from the Current Population Survey*. Retrieved August 12, 2014 from http://www.bls.gov/web/empsit/cpseea01.htm

[32] New Hampshire Employment Security – Economic and Labor Market Information Bureau. (2012). *Community Profiles.* Retrieved August 12, 2014 from http://www.nhes.nh.gov/elmi/products/cp/cp-candt-index.htm.

[33] US Department of Labor. Bureau of Labor Statistics. (2014) Unemployment Rates for States. Retrieved August 12, 2014 from http://www.bls.gov/web/laus/laumstrk.htm.

[34] NHES Economic & Labor Market Information Bureau. (2014). *New Hampshire's Changing Labor Force – 2003 to 2013.* Retrieved August 4, 2-014 from http://www.nhes.nh.gov/elmi/products/documents/ec-0814.pdf.

[35] NHES Economic & Labor Market Information Bureau. (2014). *Where Are the Favorable Employment Prospects for New Hampshire, 2012-2022?.* Retrieved August 4, 2-014 from http://www.nhes.nh.gov/elmi/products/documents/ec-proj-12-22.pdf.

[36] US Department of Housing and Urban Development. (2014). *Affordable Housing.* Retrieved August 1,2014 from http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/affordablehousing/

[37] US Department of Housing and Urban Development. (2007-2011). *Comprehensive Housing Affordability Strategy Data Query Tool.* Retrieved August 1, 2014 from http://www.huduser.org/portal/datasets/cp/CHAS/data_querytool_chas.html

[38] National Low Income Housing Coalition. (2014). *State Report.* Retrieved August 1, 2014 from http://nlihc.org/oor/2014/NH.

[39] US Department of Housing and Urban Development. (2013). *The 2013 Annual Homeless Assessment Report to Congress.* Retrieved August 1, 2014 https://www.onecpd.info/resources/documents/ahar-2013-part1.pdf

[40] US Department of Housing and Urban Development. (2012). *The 2012 Annual Homeless Assessment Report to Congress*. Retrieved August 1, 2014 https://www.onecpd.info/resources/documents/2012-AHAR-Volume-2-Section-1.pdf

[41] Substance Abuse and Mental Health Services Administration. (2011) Current Statistics on the Prevalence and Characteristics of People Experiencing Homelessness in the United States. Retrieved September 29, 2014 from http://homeless.samhsa.gov/ResourceFiles/hrc_factsheet.pdf

[42] New Hampshire Department of Health and Human Services, Bureau of Homeless and Housing Services . (2014). 2014 *Point in Time Survey. Retrieved May 20, 2014.* http://www.dhhs.state.nh.us/dcbcs/bhhs/homelessdata.htm

[43] Greater Nashua Continuum of Care. (2013). 2013 Point in Time Chart. Retrieved Sept 30, 2013 from http://www.nashua-coc.org/files/PIT/13pitc.pdf

[44] Healthy People 2020. (2014). *Lesbian, Gay, Bisexual, and Transgender Health.* Retrieved July 23, 2014 from http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=25.

[45] Substance Abuse and Mental Health Services Administration. (2012). *Top Health Issues for LGBT Populations Information & Resource Kit.* Retrieved July 23, 2014 from http://store.samhsa.gov/shin/content/SMA12-4684/SMA12-4684.pdf.

[46] Centers for Disease Control and Prevention. (2006-2010). Key Statistics from the National Survey of Family Growth. Retrieved August 4, 2014 from http://www.cdc.gov/nchs/nsfg/key_statistics.htm

[47] NH Department of Education. (2013). *2013 Youth Risk Behavior Survey Results*. Concord, NH.

[48]Substance Abuse and Mental Health Services Administration. (2012). *Top Health Issues for LGBT Populations Information & Resource Kit.* Retrieved July 23, 2014 from http://store.samhsa.gov/shin/content/SMA12-4684/SMA12-4684.pdf.

[49] Marmot, Michael. (2006). *Health In an Unequal World.* Retrieved August 18, 2014 from http://www.who.int/social_determinants/publications/health_in_an_unequal_world_marmott_lancet.pdf

"Alone we can do so little; together we can do so much."

- Helen Keller

Access to Health Care

Contents

Access is a broad term referring to the ability of individuals or groups to obtain needed medical services. Access can center on individual concerns such as affordability, lack of health insurance and difficulty navigating a health care system or on system's issues such as limited health care facilities, lack of public transportation or insufficient interpreter services. The overarching goal for "Access to Services" for Healthy People 2020 is to improve access to comprehensive, quality health care services.[1] The ability for individuals to easily access health care services has a direct correlation to the prevention, diagnosis and treatment of health conditions. This chapter will review the leading causes of death, insurance coverage, oral health, mental health, and the health of older adults over the age of 65.

Infrastructure

In New Hampshire, there are 26 acute care hospitals, and in the Greater Nashua Public Health Region (GNPHR), there are two hospitals, Southern New Hampshire Medical Center and St. Joseph Hospital. As of 2012, there were 76 nursing homes and 7,564 beds in New Hampshire. The occupancy rate for these nursing homes was 91.7%. There are 7 nursing homes in the GNPHR. In 2011, New Hampshire had 855 licensed dentists with 6.5 dentists per 10,000 residents.[2] As of June 2013, there were 169 active, licensed dentists in the Greater Nashua Region and 102 (60%) were located in Nashua. In 2011, New Hampshire had 30.1 active physicians per 10,000 residents and 28.7 per 10,000 residents in patient care. From 2009 to 2013 there were 386,639 visits to the emergency departments at Southern NH Medical Center and St. Joseph Hospital.[16]

Leading Causes of Mortality

The top five leading causes of death in the GNPHR are cancer, heart disease, chronic lower respiratory diseases, cerebrovascular diseases and accidents (unintentional injuries), which are the same for the State of New Hampshire and Nashua. There were 6,505 deaths in the GNPHR from 2008-2012 and 26% of the deaths were attributed to cancer, 19% were from heart disease and 6% were from chronic lower respiratory disease (Table 2.1).[7] Each of these health conditions have measures that can be taken to

Community Spotlight on Mason: Community Gatherings

The Town of Mason is a rural community that knows the importance of connecting residents to services and to one another. Two ways that the Town of Mason helps to unite its residents are the Mason Elementary School's Monthly Breakfast and the Community Supper at the Mason Congregational Church. The breakfast is targeted to seniors and provides a meal that is served by the school chef. Children from the school also read to the seniors during this event. At the free, monthly Community Supper, dinner is prepared by volunteers and rides are made available for residents who need transportation. Community groups such as the Boy Scouts and the Mason Fire and EMS Department also volunteer their time. Not only does the Community Supper provide an evening of neighborhood fellowship, but fresh veggies, fruits, and homemade recipes are always on the menu. The Mason Community works tirelessly to provide a welcome and healthy atmosphere for all of its residents.

prevent disease occurrence or to minimize the effects the condition has on the body. For example, there are preventative screenings and immunizations that can prevent cancer and by leading a healthy and active lifestyle you can minimize the burden of chronic diseases such as heart disease. Access to care and the affordability of health care services are important components to the prevention of health conditions and improving health outcomes.

Table 2.1 Number of Deaths by Leading Cause and Year, Greater Nashua Public Health Region, 2008-2012

Cause of Death	2008	2009	2010	2011	2012	TOTAL (%)
Cancer	328	368	312	353	324 (25%)	1,685 (26%)
Heart Disease	231	267	227	255	262 (20%)	1,242 (19%)
Chronic Lower Respiratory Disease	74	73	68	89	72 (6%)	376 (6%)
Accidents	60	56	59	72	67 (5%)	314 (5%)
Cerebrovascular Disease	50	52	60	59	59 (5%)	280 (4%)
Alzheimer's Disease	56	49	65	44	35 (3%)	249 (4%)
Diabetes	44	26	37	23	31 (2%)	161 (2%)
Kidney Disease	39	19	37	28	21 (2%)	144 (2%)
Influenza/ Pneumonia	23	18	32	34	30 (2%)	137 (2%)
Suicide	27	20	24	23	30 (2%)	124 (2%)
Other	347	352	347	375	372 (29%)	1,793 (28%)
TOTAL	1,279	1,300	1,268	1,355	1,303	6,505

Source: NH DHHS[7]

Premature Mortality

A premature death is when someone dies before they reach a certain age and most of these deaths are preventable. In 2012, the GNPHR premature mortality rate was 376.9 per 100,000 which is significantly

lower than the NH premature mortality rate of 496.2 per 100.000. The premature mortality rate was higher in males than females (Table 2.2).[26]

Table 2.2 Premature Mortality Rate in Adults 45-64 years (per 100,000), 2012

Geography/Gender	Premature mortality among adults aged 45 to 64 years
GNPHR	376.9 (CI 328.0-425.9)
GNPHR Females	300.9 (242.3-369.4)
GNPHR Males	453 (CI 377.2-528.9)
NH	496.2 (CI 474.2-518.2)
Source: NH DHHS[7]	

Focus Group Input on Access to and Coordination of Care

For background information on the focus groups conducted in the GNPHR for the writing of this Community Health Assessment, please reference the Introduction, page I-4. The following is an excerpt from the final document, *Greater Nashua Community Health Assessment Focus Group Summary Report,* which can be accessed at http://bit.ly/GNPHRFocusGroup. Among all the focus groups, there was agreement that access to and coordination of care is a major issue impacting the health and well-being of residents in the region. The broad theme of access to and coordination of care resonated in every focus group. Healthcare providers and community members recognized the importance of getting the right care at the right time as well as the impact of coordination on the cost and quality of care. Participants feel the systems for mental health, substance misuse, oral health and elder care are fragmented, and function without collaboration, causing poor coordination of care for residents.[23]

Focus group participants cited the following barriers to access and coordination of care:

- Difficulty accessing providers in a timely manner; especially specialists (i.e. oral surgeons, psychiatrists for medication management, evaluation and treatment plans, mental health counseling)
- Coordination of care between healthcare providers and follow-up for individuals with chronic conditions
- Cost of care (i.e. high co-payments, deductibles, lack of insurance or high cost of insurance)
- Lack of public transportation from surrounding towns to doctor appointments for all residents – not just the elderly and people with disabilities
- Need for more flexible hours for appointments during the evenings and weekends
- Caregivers' stress

To access the complete Greater Nashua Community Health Assessment Focus Group Summary Report, visit

http://bit.ly/GNPHRFocusGroup

For the aging population focus group, access to and coordination of care centered on the difficulties patients have navigating the healthcare system, managing complex medical conditions and handling multiple medications. This population faces many societal challenges that impact their health including housing, nutrition, medication adherence, using technology and health literacy. Participants mentioned the growing need for services to support individuals so they can "age-in-place" without needing to enter a long term care facility. Seniors without access to transitional support (home modification programs, food/nutrition support, and in-home assistance) may need to enter long term care facilities due to safety concerns and complex medical conditions.[23]

Another topic around coordination of care, specific to the aging population, was caregiver stress. The overall well-being of caregivers who care for seniors, the disabled and sick family members is often overlooked. The stress of caring for a loved one has a great impact on the health and productivity of caregivers, which not only affects the individual, but also impacts their employers. The Aging focus group participants recognized a growing awareness of this issue, and said that local employers are beginning to respond to employees experiencing caregiver stresses with some employers providing support programs. However, the participants felt that the issue still needs more attention. Participants also discussed the importance of caregiver infrastructure being integrated into a care plan for seniors being discharged into the community.[23]

Access to and coordination of care was a top concern for professionals in the oral health group as well. They were concerned with the high cost of care, lack of insurance coverage for a large number of adults and children and lack of specialty care. They mentioned the availability of preventative care, such as cleanings, is more readily accessible but access to specialty care was a greater challenge, especially if the individual does not have insurance. Programs in the schools, the Greater Nashua Dental Connection and the Veterans Affairs all provide various levels of oral health care to eligible clients. Participants also felt there was a need to provide additional information to parents of young children on the importance of routine oral health care, such as brushing and flossing. They expressed concern that many families lack the knowledge and resources to prevent tooth decay.[23]

Participants discussed the need for a resource that could help them identify community resources such as: youth empowerment opportunities, support for eating disorders, and a listing of available counselors. Participants mentioned New Hampshire 2-1-1 and ServiceLink as helpful resources for accessing information about existing community resources. Although these services are available, participants stressed the need for an enhanced version of this concept where individuals can receive one-on-one case management-style assistance sorting through their various needs and helping to find providers that can meet their specific needs in a cost effective way.[23]

"Care coordination is important. We need to know the background of providers, we need to know where to go for the best care for our problem and not waste time and money."

"Sometimes I call Elderly and Adult services to coordinate care, but it is too bad things are missed along the way and it doesn't get caught sooner."

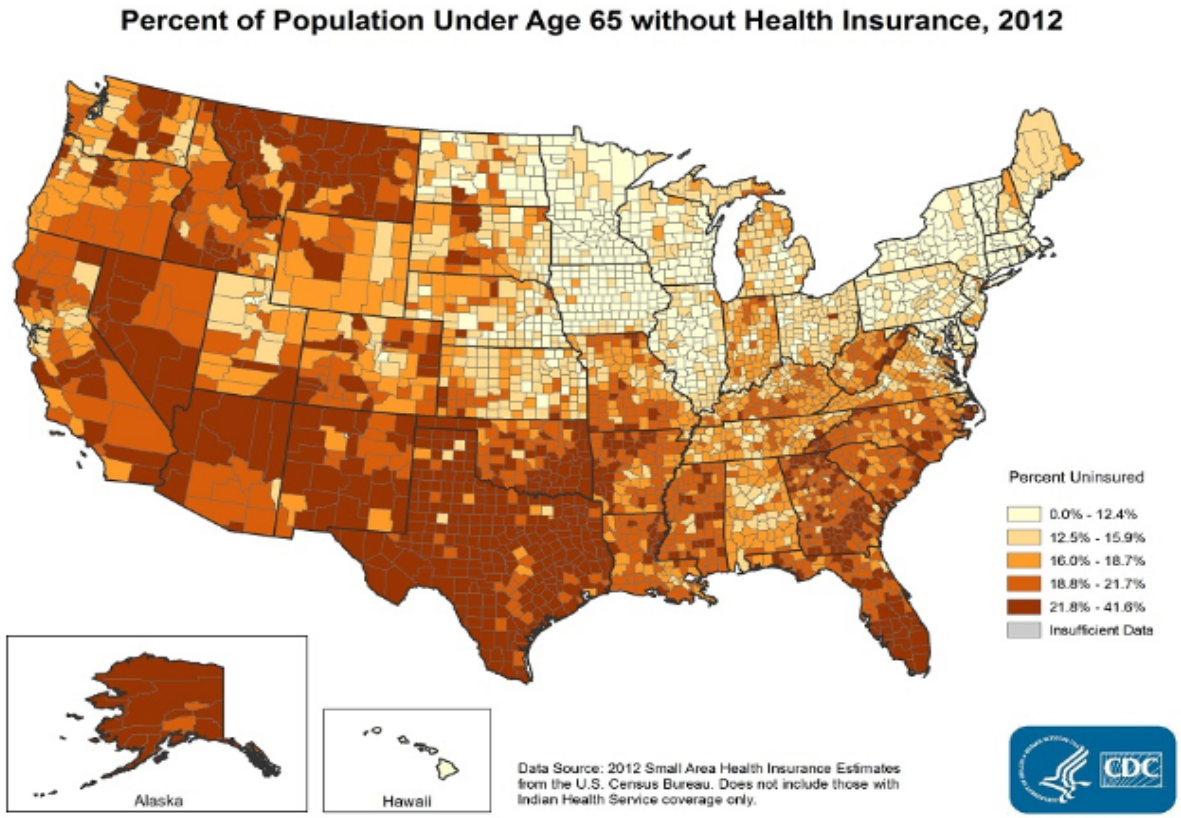
"As a nurse I look over everything and I write to the docs if I notice patients have too many medications. People are really complex by the time they get to a nursing home, not needing a simple calcium pill."

- **Focus Group Attendee**

Insurance Coverage

From 2002 to 2012, the percent of adults with Medicaid and no insurance increased while the percent of adults with private insurance decreased. The percent of adults aged 18 to 44 with private insurance coverage declined from 68% in 2002 to 61% in 2012 and the percent on Medicaid coverage increased from 7% to 11%.[2] As a state, New Hampshire has more residents that are covered by health insurance than most states in the southern and western parts of the country but New Hampshire residents with less education, lower incomes and are unemployed are more likely to lack a health care plan (Figure 2.1).[4] Nationally, 14.9% of all residents and 8.1% of children lack a health care plan compared to 10.5% of all residents and 4.5% of children in New Hampshire. [6] According to the 2008-2012 American Community Survey, 10.8% of residents in Nashua do not have health insurance and 3.2% of children under 18 years of age in Nashua do not have health insurance.[6]

Figure 2.1 Population without Health Insurance, 2012



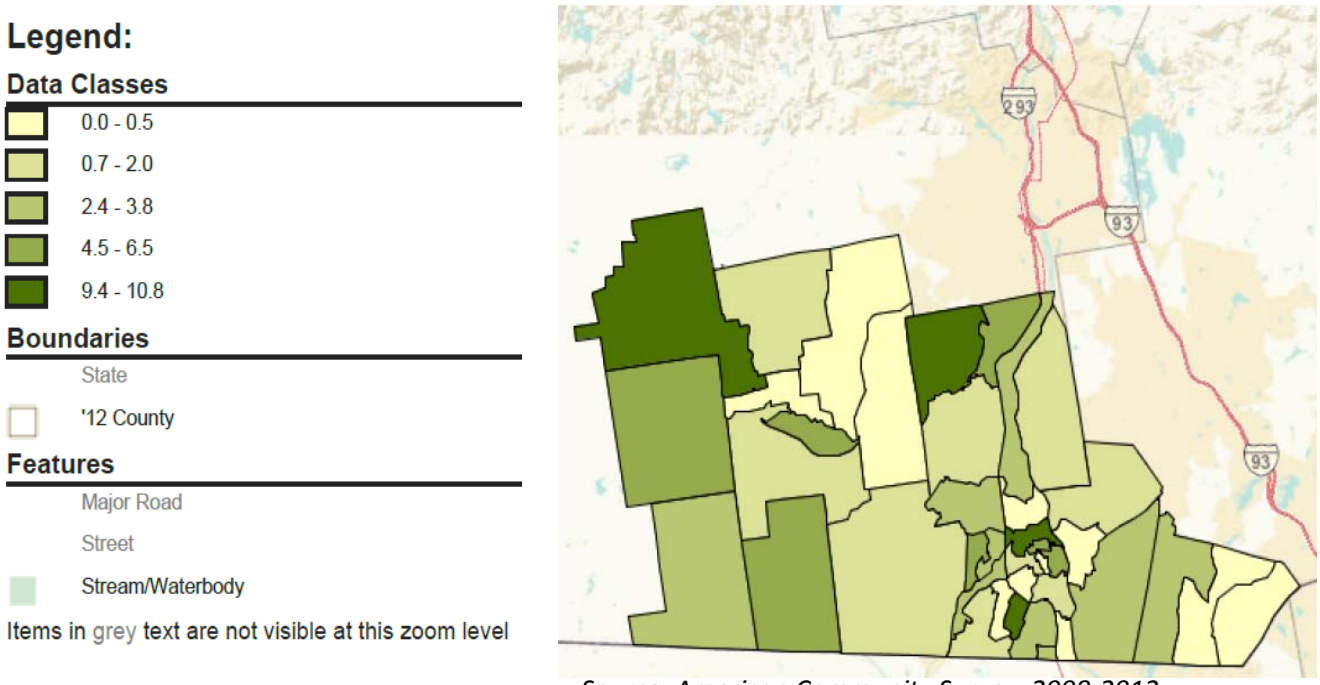
Source: U.S. Census Bureau, 2012 Small Area Health Insurance Estimates Program

When looking at the GNPHR by census tract, the percent of all residents that are uninsured varies from 2.4% to 23.7%, with the highest percentages in downtown Nashua (Figure 2.2). For children under 18 years of age, the percent of uninsured by census tract varies from 0.0% to 10.8% in the GNPHR. Census tracts with the highest percent of uninsured children were in Nashua, Merrimack and Lyndeborough (Figure 2.3).[6] The GNPHR and Nashua do not meet the Healthy People 2020 objective of total healthcare coverage (Table 2.3).[1]

Table 2.3 Percent of Population with Insurance by Geography, 2008-2012

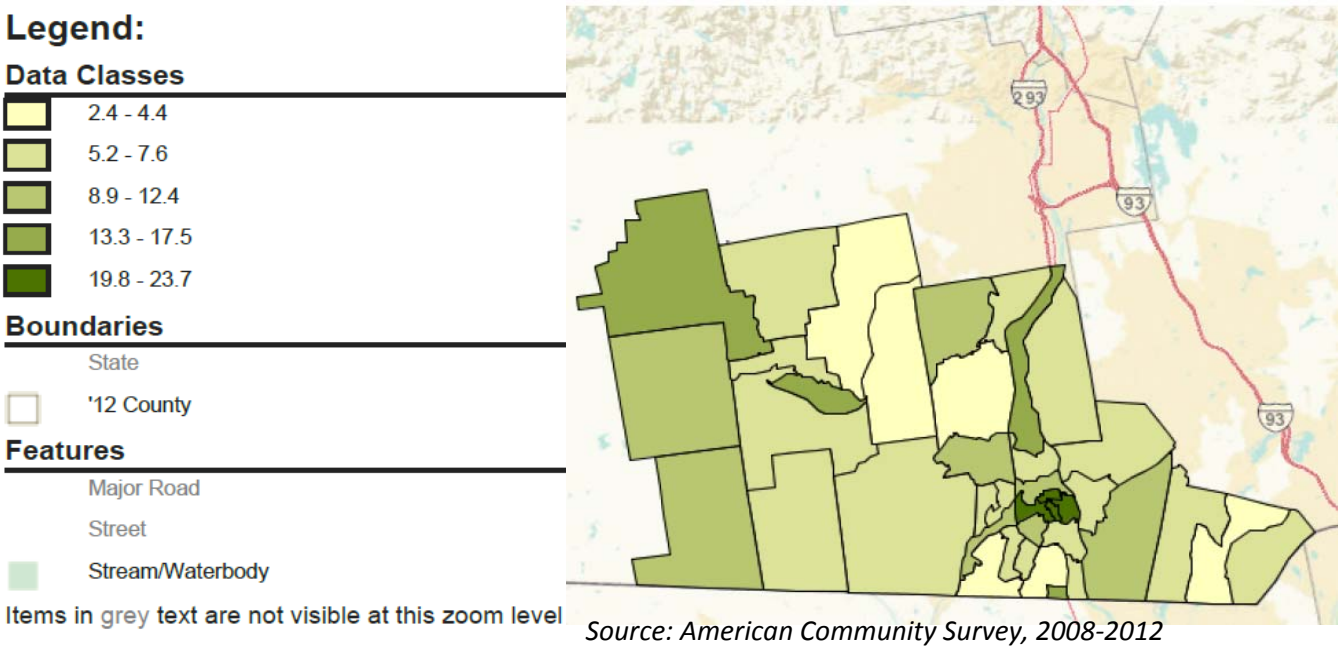
	Nashua	Hillsborough County	NH	US	Healthy People 2020 Goal
Percent Population Insured	89.2%	90.1%	89.5%	85.1%	100%
Source: American Community Survey, 2008-2012					

Figure 2.2 Percent Uninsured by Census Tract, Under 18 Years, Greater Nashua, 2008-2012



Source: American Community Survey, 2008-2012

Figure 2.3 Percent Uninsured by Census Tract, Greater Nashua, 2008-2012



Source: American Community Survey, 2008-2012

Affordable Care Act

The Affordable Care Act was signed by President Obama on March 23, 2010, which put into place a health reform with standards for insurance coverage such as ending pre-existing condition exclusions for children, allowing young adults to stay covered under their parents insurance until they are 26 years old, ending the lifetime limits on coverage and covering preventative health services.[8]

The first enrollment period opened on October 1, 2013 and since that time, 8,019,763 United States residents and 40,262 New Hampshire residents selected plans in the Healthcare Marketplace (Table 2.2). In New Hampshire, 53% of enrollees were female, 30% were 55 to 64 years old and 77% enrolled with financial assistance (Table2.4).[19]

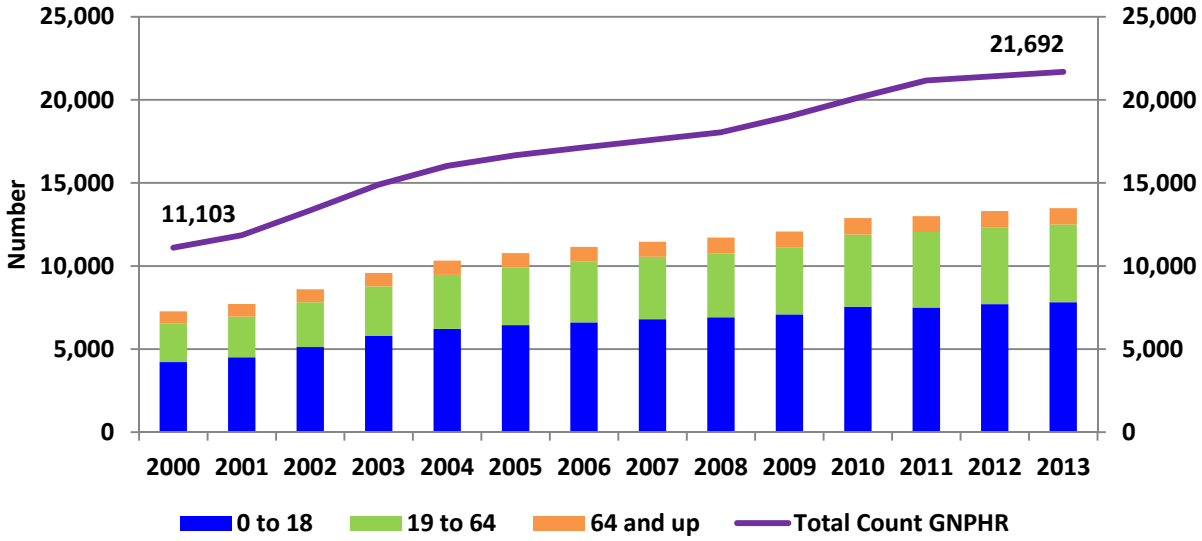
Table 2.4 Affordable Care Act Enrollment and Marketplace Plan Selections, NH, 2013-2014

	New Hampshire	United States
Total Marketplace Plan Selections	40,262	8,019,763
By Gender		
Female	21,537 (53%)	4,301,656 (54%)
Male	18,723 (47%)	3,633,920 (46%)
By Age		
≤18	2,139 (5%)	497,522 (6%)
18-25	3,787 (9%)	869,476 (11%)
26-34	6,976 (17%)	1,379,467 (17%)
35-44	6,066 (15%)	1,371,645 (17%)
45-54	9,230 (23%)	1,814,837 (23%)
55-64	12,003 (30%)	2,036,251 (25%)
≥65	61 (0%)	36,504 (0%)
By Financial Assistance		
With Financial Assistance	30,920 (77%)	6,670,458 (85%)
Without Financial Assistance	9,342 (23%)	1,201,105 (15%)
Source: Office of the Assistant Secretary for Planning and Evaluation http://aspe.hhs.gov/health/reports/2014/MarketPlaceEnrollment/Apr2014/Marketplace_StateSum.cfm		

Medicaid

There has been a steady increase of individuals enrolled in Medicaid over the past 13 years with a current total of 171,256 enrollees in New Hampshire in 2013. In 2013, about 8% of enrollees were from Nashua, with 7,820 (58%) of enrollees, being under 18 years of age (Figure 2.4). Of the Medicaid clients in Nashua, 87% were White or Hispanic and 4% were Black, non-Hispanic (Table 2.5).[20]

Figure 2.4 Medicaid Unique Enrollment Numbers by Year and Age, Nashua, 2000-2013



The bars represent enrollment numbers for Nashua and the line represents enrollment numbers for the GNPHR.
Source: NH DHHS

Since October 1, 2013, 8,019,763 United States residents and 40,262 New Hampshire residents selected plans in the Healthcare Marketplace.

For more information on the Health Insurance Marketplace, visit www.healthcare.gov. Locally, there are trained individuals that can assist individuals with enrollment at Harbor Care Health and Wellness Center, Southern New Hampshire Medical Center and St. Joseph Hospital.

Table 2.5 Medicaid Enrollees by Race, 2000-2013

Geography	Race	2000	2005	2010	2013
Nashua	American Indian/ Alaskan Native	6	11	14	24
	Asian/ Pacific Islander	91	136	190	286
	Black, Non-Hispanic	333	447	504	554
	Unknown	51	159	94	656
	White or Hispanic	6,725	9,893	11,884	11,754
	Multiple Ethnicity	*	*	*	211
Unique Total Count		7,206	10,625	12,686	13,485
GNPHR	American Indian/ Alaskan Native	7	14	22	36
	Asian/ Pacific Islander	127	196	267	374
	Black, Non-Hispanic	397	525	618	658
	Unknown	63	280	143	795
	White or Hispanic	10,509	15,697	19,079	19,515
	Multiple Ethnicity				314
Unique Total Count		11,103	16,673	20,129	21,692
New Hampshire	American Indian/ Alaskan Native	95	167	175	255
	Asian/ Pacific Islander	696	1,050	2,059	2,343
	Black, Non-Hispanic	1,841	3,249	4,035	4,140
	Unknown	923	2,511	1,304	3,988
	White or Hispanic	105,467	131,232	155,183	158,478
	Multiple Ethnicity	*	*	*	2,052
Unique Total Count		109,022	137,838	162,756	171,256

Source: NH DHHS; Medicaid

Oral Health

Oral health is an integral part of overall health. According to Donna E. Shalala, former Secretary of the United States Health and Human Services, "Oral health means more than healthy teeth and you cannot be healthy without oral health." The negative impacts of decreased oral health are far reaching. Some of the oral and craniofacial (skull and face) conditions that may occur from poor oral health include dental

caries (tooth decay), periodontal (gum) diseases, oral and facial pain, and oral and pharyngeal (mouth and throat) cancers. Oral diseases worsen over time, and they can affect one's self-esteem, ability to eat certain foods, and ability to go to work or school. Unfortunately, certain populations face barriers to accessing dental care such as limited income or lack of insurance, lack of transportation to receive dental care, fear of dental services and the inability to take time off from work to attend to personal or family dental needs.[1] CDC published a paper looking at the cost savings of community water fluoridation and found that for every $1 invested in water fluoridation, there was a $38 savings in dental treatment costs.[18] In the GNPHR, the Hollis and Lyndeborough School Districts have enough fluoride in the water system to prevent dental caries.[17] Addressing oral health is crucial to ensuring the general health of an individual.

Oral Health and Adults

In the GNPHR, 76.8% (CI 73.3-80.3%) of adults over 18 years of age went to a dentist or dental clinic within the past year and 73.8% (CI 68-79.6%) of Nashua adults visited a dentist or dental clinic (Table 2.6). According to the New Hampshire Division of Public Health and Human Services Oral Health in New Hampshire 2014 Update, individuals with chronic conditions are visiting a dentist or dental clinic less often than individuals without chronic diseases. About 73% of individuals without chronic conditions visit the dentist and only 65.6% of NH adults with diabetes visited a dental clinic and 62.9% of NH adults with coronary heart disease visited a dentist or dental clinic. NH adults that smoke or use tobacco are at greater risk of poor oral health and 36.7% of smokers have lost between one to five teeth and 8.2% have lost all of their teeth.[5]

Table 2.6 Adults that Visited a Dentist or Dental Clinic

	Nashua	NH	US
Visited the dentist or dental clinic within the past year (18+ years)	73.8% (68-79.6%)	76.8% (73.3-80.3%)	67.2%
Source: 2012 BRFSS			

Nationally, 16% of adults over 65 years of age have had all their natural teeth extracted. In the GNPHR, 35% (CI 27.8-42.2%) of adults over 65 years of age have lost at least 6 teeth and 37% of Nashua adults have lost at least 6 teeth. In an oral health survey conducted by the New Hampshire Department of Health and Human Services:

- 16% of survey participants did not have their natural teeth
- 44% had a removable upper denture
- 30% had a removable lower denture
- 33% needed early dental care
- 12% needed urgent care
- 8% had gingivitis
- 43% had untreated decay
- 16% needed periodontal care
- 20% had an oral cancer screening

Additionally, the survey highlighted that 9% of participants used tobacco every day, 9% had some type of dental insurance and 43% had a particular dentist or dental clinic they visited.[19]

Oral Health and Youth

According to the National Survey of Children's Health, 81.7% of NH children have excellent or very good oral health but 13.8% had one or more oral health problems during the past year. About 15% of NH children had not received preventative dental care during the past 12 months and 14.5% had not have any dental care.[22]

In September 2013 and March 2014, the City of Nashua Third Grade Survey was conducted in conjunction with the New Hampshire Third Grade Healthy Smiles Healthy Growth Survey. The report highlights that 82.4% of Nashua third grade students had no obvious oral health problems during the survey, 14.9% required early dental care (prior to their next regularly scheduled appointment) and 2.7% required urgent care because of pain, infection or swelling. Protective dental sealants were present among 69.5% of students, 17.3% of students had untreated decay, 40.0% had treated decay, and 48.4% had either untreated and/or treated decay (decay history) (Table 2.7). The City of Nashua meets the Healthy People 2020 goal to reduce the proportion of children ages 6 to 9 years with dental caries experience to 49%, but continued efforts are needed to meet the NH SHIP 2015 goal of 41.4%.[1,8] The Healthy People 2020 goal to reduce the proportion of children ages 6 to 9 years with untreated decay is 25.9% and the City of Nashua meets this goal with 17.3%. The City of Nashua greatly exceeds the Healthy People 2020 goal of 28.1% of children ages 6 to 9 years who have received dental sealants with 69.5% receiving sealants.[21]

Table 2.7 Nashua Third Grade Oral Health Status

Variable	Students overall (n = 820)	
	No.	*Proportion*
No obvious problems	676	82.4%
Needs early care	122	14.9%
Needs urgent care	22	2.7%
Sealants	570	69.5%
Treated decay	328	40.0%
Untreated decay	142	17.3%
Decay history	397	48.4%

A comparison of males and females showed statistically significantly more males had treated decay (p = 0.040). All other oral health indicators showed no statistically significant differences between genders (Table 2.8).[21]

For more information on the Greater Nashua Dental Connection, visit http://nashuadentalconnection.org/.

The City of Nashua 2013-2014 Third Grade Survey is available here: http://bit.ly/NashuaHSHG.

Table 2.8 Oral Health Status by Gender

Variable	Males (n= 429)		Females (n= 391)		P-value**
	No.	*Proportion*	*No.*	*Proportion*	
No obvious problems	356	83.0%	320	81.8%	0.668
Needs early care	62	14.5%	60	15.4%	0.720
Needs urgent care	11	2.6%	11	2.8%	0.825
Sealants	293	68.3%	277	70.8%	0.429
Treated decay	186	43.4%	142	36.3%	0.040**
Untreated decay	74	17.3%	68	17.4%	0.957
Decay history	223	52.0%	174	44.5%	0.032**

**P-value <0.05 indicates statistical significance

Stratification by Free and Reduced Lunch (FRL) program participation at the school level indicated a greater burden of dental disease among students attending schools with greater than 50% FRL program participation. More students had apparent oral health problems ($p = 0.001$), greater need for urgent care ($p < 0.001$), and more untreated decay ($p = 0.001$) and treated decay ($p = 0.001$). Statistically significantly fewer students attending schools with a higher participation in the FRL program had protective dental sealants ($p < 0.001$) as shown in table 2.9.[21]

Table 2.9 Oral Health by the FRL Program Participation

Variable	Students in schools with <50% FRL participation (n = 508)		Students in schools with ≥50% FRL participation (n = 312)		P-value**
	No.	*Proportion*	*No.*	*Proportion*	
No obvious problems	436	85.6%	240	76.9%	0.001**
Needs early care	67	13.2%	55	17.6%	0.083
Needs urgent care	5	1.0%	17	5.5%	<0.001**
Sealants	380	74.8%	190	60.9%	<0.001**
Treated decay	181	35.6%	147	47.1%	0.001**
Untreated decay	71	14.0%	71	22.8%	0.001**
Decay history	214	42.1%	183	58.7%	<0.001**

**P-value <0.05 indicates statistical significance

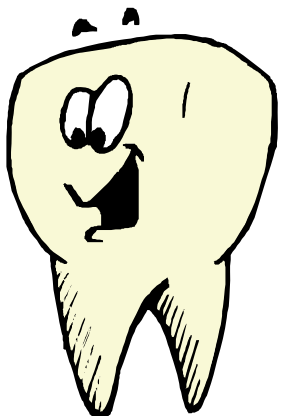
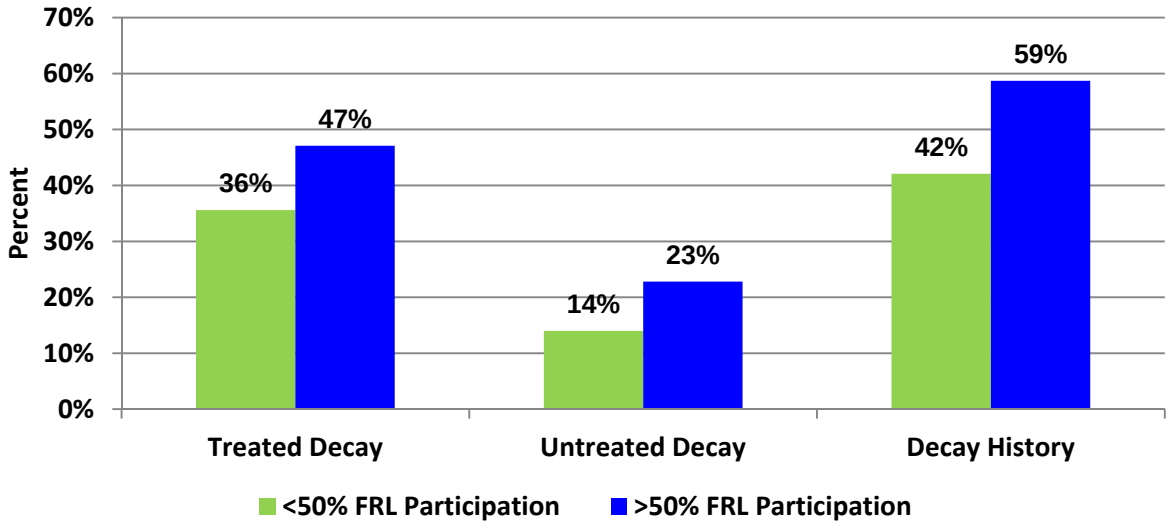


Figure 2.5 Oral Health by FRL Participation



Source: City of Nashua Third Grade Survey

Focus Group Report on Oral Health

For background information on the focus groups in the GNPHR, please reference the Introduction, page I-4. The following is an excerpt from the final document, *Greater Nashua Community Health Assessment Focus Group Summary Report*. The focus group with oral health professionals was held on March 13, 2014 at St. Joseph Hospital in Nashua, NH. Several priority areas were highlighted by participants and included:

- Perceived lack of affordable oral health care options for low-income residents, including specialty dental care.
- Confusion about insurance coverage (both from the providers' and patients' perspective.)
- Perceived limited dental insurance coverage for people in the greater Nashua region.
- Lack of awareness of available services for children in the greater Nashua region.

Participants discussed at length the relationship between oral health and overall health for children and parents including, but not limited to:

- Preventive oral health care for children competes with other family requirements in a way that prevents or delays obtaining care.
- Parents don't know where to get low cost care.
- Poor past experiences with dentists may cause barriers or delays in seeking care.
- Untreated oral health issues can interrupt a child's ability to participate fully in school.[23]

Greater Nashua Dental Connection

The Greater Nashua Dental Connection (GNDC) is a non-profit dental clinic focused on improving access to dental care for children and families in need of service in the Greater Nashua area. Primary dental services include oral examinations and cleanings, fluoride treatments, fillings and sealants, and oral health education. From July 2013 to June 2014, the GNDCs saw 523 unduplicated adults 18 years and older for emergency appointments and a total of 615 unduplicated emergencies overall.[24]

Mental Health

Healthy People 2020 defines mental health as a "state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with challenges".[1] Mental disorders are health conditions characterized by alterations in thinking, mood and/or impaired function. Mental illnesses refer to all diagnosable mental disorders.

In the United States, mental health disorders are the leading cause of disability accounting for 25% of all years of life lost to disability and premature mortality. According to the National Institute of Mental Health, approximately 13 million adults have a serious, debilitating mental illness. The overarching Healthy People 2020 goal for mental health is to improve mental health through prevention and ensuring access to quality mental health services by 10%.[1]

About 11% (CI 8.7-13.6%) of adults 18 years and older in the GNPHR self-rate their health as fair or poor and the number of mentally unhealthy days experienced by adults is about 3.5 days (CI 1.8-5.3) per month. For women in the GNPHR of childbearing age, 16% have 14 or more mentally unhealthy days each month. In high school students from the GNPHR, 18.7% reported that they purposely hurt themselves by cutting or burning and 28% reported that they felt so sad or hopeless that they stopped doing some usual activities (Table 2.10). [5]

Table2.10 Mental Health Indicators, BRFSS and YRBS

	Nashua	GNPHR	NH
Adults self-rating their health as fair or poor (2012)	12.8% (CI 8.8-16.9%)	11.2% (CI 8.7-13.6%)	13.5% (CI 12.4-14.6%)
Adults and the number of mentally unhealthy days each month (2012)	3.8 (CI 0.8-6.8)	3.5 (CI 1.8-5.3)	4.2 (CI 3.4-5)
Women of childbearing age with 14 or more mentally unhealthy days (2012)	11% (CI 0.4-21.5%)	16.3% (CI 8.8-23.7%)	17.3% (CI 14-20.5%)
High school students cutting or burning themselves on purpose without wanting to die* (2013)	19.9%	18.7%	18.7%
High school students feeling sad or hopeless and stopped usual activities* (2013)	31.3%	28%	26.2%
*Source: NH DHHS; BRFSS and YRBS**			

Focus Group Report on Mental Health and Substance Misuse

For background information on the focus groups in the GNPHR, please reference the Introduction, page I-4. For more data on substance misuse, reference chapter 8. The following is an excerpt from the final document, *Greater Nashua Community Health Assessment Focus Group Summary Report*. According to focus group attendees, the issue of greatest concern impacting the health of the community is access to mental health services and substance misuse. Multiple participants including parents, law enforcement officers, representatives from the schools, counselors, healthcare providers, and representatives from social service agencies, expressed significant concern about the complex barriers of accessing mental

health and substance misuse services in the region. While these are two separate public health concerns, participants often talked about these issues simultaneously.[23]

Focus group participants described many challenges individuals face when coordinating services and treatment for behavioral health and substance misuse. Focus group participants cited the following challenges for both children and adults:

- Scarcity of mental health professionals, especially psychiatrists, for patient assessments and medication management
- High deductibles and limited health insurance coverage
- Difficulty getting a timely appointment
- Difficulty getting appointments in the evenings and weekends
- Shortage of inpatient beds and treatment beds
- Social stigma: lack of understanding about mental illness and substance misuse
- Lack of behavioral health integration in the primary care setting
- High cost of treatment
- Lack of continued coordination of care for patients leaving inpatient services
- Prescription drug misuse leading to misuse of other drugs[23]

Participants felt that the mental health and substance misuse system is poorly funded and that the closing of inpatient units at local hospitals, the shrinking number of substance misuse beds, and the limited number of psychiatrists in the region are contributing to the problem. Participants in the Milford groups said it is easier to access counseling services in their area than it is to access the services of a psychiatrist.[23]

The participants in both the community groups and the youth behavioral health group identified the lack of accessible counseling services and medication management as the greatest challenges for mental health services in the Nashua region. Overall, participants felt individuals are not able to easily access mental health or substance misuse services in a timely manner and are not able to get services until they are in a crisis situation. For some individuals, this often means they are not getting help until they have an encounter with law enforcement and are directed to services. Participants discussed situations where individuals with either very low income or inadequate health insurance coverage are seeking treatment in the emergency department because they do not have access to

Community Spotlight on Nashua: H.E.A.R.T.S.

Hope, Empowerment, Advocacy, Recovery, Towards Support.

H.E.A.R.T.S. Peer Support Center is an Adult Educational Wellness Center for people who have, have had or are at risk of developing a mental health issue. H.E.A.R.T.S. began in July 2009 and services an 11 town region including, Nashua, Hudson, Merrimack, Milford, Amherst, Litchfield, Brookline, Mason, Hollis, and Mont Vernon. Using peer support and education, H.E.A.R.T.S. strives to empower its members by using peer collaboration to build strength, self-esteem, and socialization skills. H.E.A.R.T.S. believes that as a community people learn to build and grow healthier and stronger relationships. H.E.A.R.T.S. offers a peer support phone line known as the Warm Line where individuals with mental health issues are able to speak with a peer who will listen and share common experiences. The Warm Line is available daily from 5 PM to 10 PM.

adequate services in the outpatient setting or need additional medical care that requires hospitalization. Although the state has a psychiatric hospital in Concord, the participants felt that the number of beds is limited and it can be very difficult to access those beds. Participants expressed concern that the emergency departments do not have the staffing or a dedicated facility to care for individuals in this situation. Several participants across many of the focus groups suggested a possible solution as having mental health providers on call at the emergency department to help alleviate this issue. A program centered on this concept was recently started at Southern New Hampshire Medical Center and St. Joseph Hospital.[23]

***Behavioral health** is a term that covers the full range of mental and emotional well-being – from the basics of how we cope with day-to-day challenges of life, to the treatment of mental illnesses, such as depression or personality disorder, as well as substance use disorder and other addictive behaviors.*

Participants in the professional and public groups, as well as the youth behavioral health group, explored the concern regarding the lack of care coordination for hospitalized patients once they are discharged. It was mentioned that youth return to school without any communication with school staff about their hospitalization or mental health emergency and without a follow-up appointment with their healthcare provider. Likewise, participants shared that adults are also being discharged from the hospital without a follow-up appointment to a community counselor or healthcare provider.[23]

Healthcare providers expressed concern about the scarcity of mental health professionals in the area. Four primary care providers from various groups touched on this issue and stated they struggle to find mental health providers to provide professional consultation. The healthcare providers said they could expand the capacity of their practice to provide medication management to their patients for anxiety, ADHD and depression but they prefer to send their patients with more complex conditions to a specialist for treatment.[23]

Another concern identified in the youth behavioral health group was confusion or lack of clarity about local providers' referral and intake policies. One example they shared was that in order for their clients to be seen by a psychiatrist at another practice, they must transfer their client to that practice which interrupts the continuity of care, creates waiting lists, and generates obstacles for patients already having difficulty managing their daily activities.[23]

"Mental illness is not like having diabetes. It makes you feel like you did something wrong. It is harder than other illnesses in that way."

- Focus Group Attendee

Suicide

In 2010, suicide was the 10th leading cause of death for all ages in the United States with 38,364 suicides, about 105 suicides each day. It was the leading cause of death among 15-24 year olds in the United States. According to the CDC there were 38,364 suicides in 2010, an average of 105 each day. That same year, there was an estimated $34.6 billion in medical and work lost costs due to suicide and suicide attempts nationally. About 1/3 of suicide decedents tested positive for alcohol, 23% were taking antidepressants and 20.8% were taking opiates. In the United States, 8.3 million adults reported having suicidal thoughts, 2.2 million made plans to commit suicide, and 1 million reported making a suicide attempt. Suicide is four times higher in males, but females are more likely to have had suicidal thoughts. For males, firearms are the most commonly used method (56%) and for females, poisoning is the most common method (37.4%) of suicide.[12]

There were 124 suicides in the GNPHR and 919 suicides in NH between 2008 and 2013. Most of the suicides in the GNPHR were in males' ages 35 to 64 years old. From 2008-2013, the suicide rate for the GNPHR was 11.2 per 100,000. The Healthy People 2020 goal is to reduce the suicide rate to 10.2 per 100,000, which Nashua and the GNPHR do not currently meet (Table 2.11).[25]

Table 2.11 Suicide Rate by Gender (per 100,000), 2008-2013

	Nashua	GNPHR	NH
Total	11.9 (9-15.5)	11.2 (9.2-13.3)	13.8 (12.1-13.8)
Female	*	4.1 (2.6-6.1)	5.3 (4.6-6.1)
Male	19.2 (14-25.6)	18.8 (15-22.7)	21.1 (19.6-22.7)
*Source: NH DHHS; * repressed due to small numbers*			

Nationally, 15 to 24 year olds account for 20% of suicides annually and 15.8% of students reported that they had seriously considered attempting suicide. In the GNPHR, 16.4% of high school students seriously considered attempting suicide, 7.1% actually attempted suicide one or more times in the past year and of those that attempted suicide, 31.6% had to be treated by a doctor or nurse.

National Suicide Prevention Lifeline

1-800-273-TALK (8255)

There are 10 mental health centers in NH, visit http://bit.ly/1uKqxPR to learn more!

Table 2.12 Mental Health and Suicide in High School Students, 2013

	Percentage of students who purposely hurt themselves such as cutting or burning on purpose without wanting to die	Percentage of students who felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities	Percentage of students who seriously considered attempting suicide during the past 12 months	Percentage of students who actually attempted suicide one or more times during the past 12 months	Percentage of students whose suicide attempt resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse
NH	17.9%	25.4%	14.4%	6.7%	2.4%
Alvirne High School	19.3%	26%	18.3%	8.2%	2.3%
Campbell High School	19.3%	24.6%	16.3%	5.4%	2.5%
Hollis-Brookline High School	15%	23.5%	12%	4.5%	1.2%
Merrimack High School	21.2%	31.4%	18.3%	8.1%	2.6%
Milford High School	18.4%	25.8%	15.1%	6.6%	1.5%
Nashua High Schools (North and South)	19.9%	31.3%	17.5%	8.3%	2.8%
Soughegan High School	13.6%	22.5%	11.9%	3.9%	1.1%
Wilton/ Lyndeborough High School	17.4%	32.6%	14.6%	4.1%	2.4%
Source: 2013 YRBS					

Older Adults and Caregivers

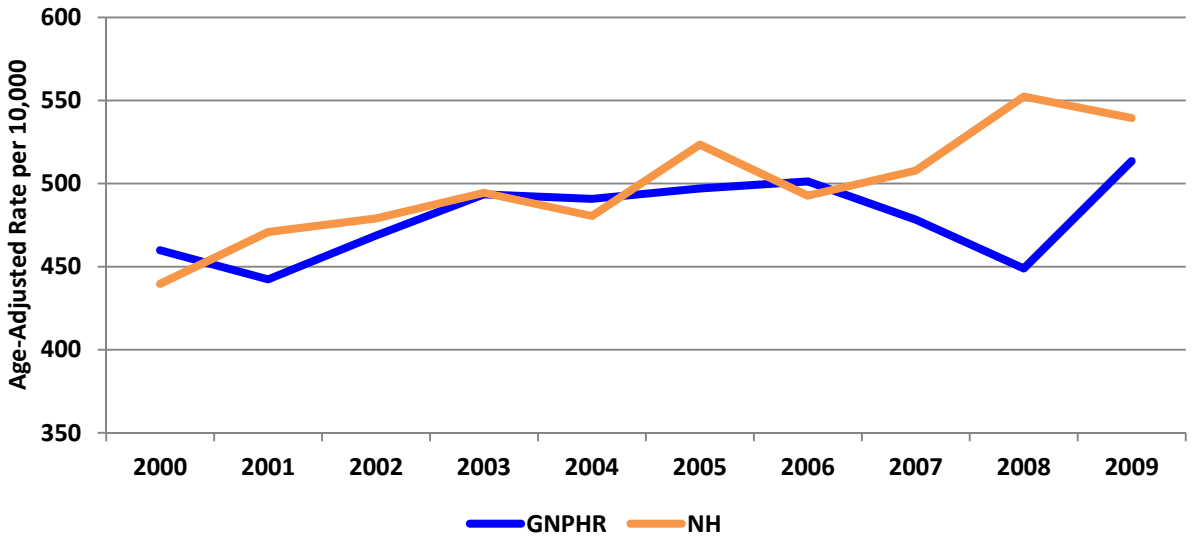
In the next two decades, the numbers of older adults will double the population of adults over 65 years of age due to longer life spans and aging baby boomers which will account for about 20% of the total US population. Heart disease and cancer are two of the greatest health issues for older adults but other chronic diseases and infectious diseases such as diabetes and influenza pose risks for older adults and impact an older adult's ability to conduct activities of daily living such as managing money, preparing meals, bathing and getting dressed. The health care spending over the next 15 years will increase by 25% due to the aging population.[13]

Falls

In the United States, one in every three adults, age 65 and older, fall every year which can lead to hip fractures, head traumas and increase the risk of an early death. Falls are a leading cause of injury and in 2010, there were 2.3 million nonfatal injuries from falls in older adults that lead to a visit to the emergency department and more than 662,000 hospitalizations from falls.[27] The age adjusted rate for older adults in the GNPHR and NH remained steady from 2000 to 2009. In 2009, the rate for fall related emergency department visits was 513 per 10,000 for older adults in the GNPHR and 539 per 10,000 in NH (Figure 2.6).[26] According to the Trauma and EMS Information System there were 760 EMS calls in the GNPHR for falls in the elderly 70 years and older. The Healthy People 2020 goal is to reduce the rate of emergency department visits due to falls to 471 per 10,000, which the GNPHR does not meet. Medical costs from falls reached $30 million in 2010. About 21,700 older adults died from unintentional fall injuries in 2010 in the United States and men are more likely to die than women.[27] From 2000 to 2013, there were 113 fall related deaths in adults over 65 years of age in the GNPHR.[26]

Within one year of a hip fracture, one out of five hip fracture patients dies and one in three adults that lived at home before their hip fracture remained in a nursing home one year later.

Figure 2.6 Fall Related Emergency Department Visits, 65 and older, 2000-2009

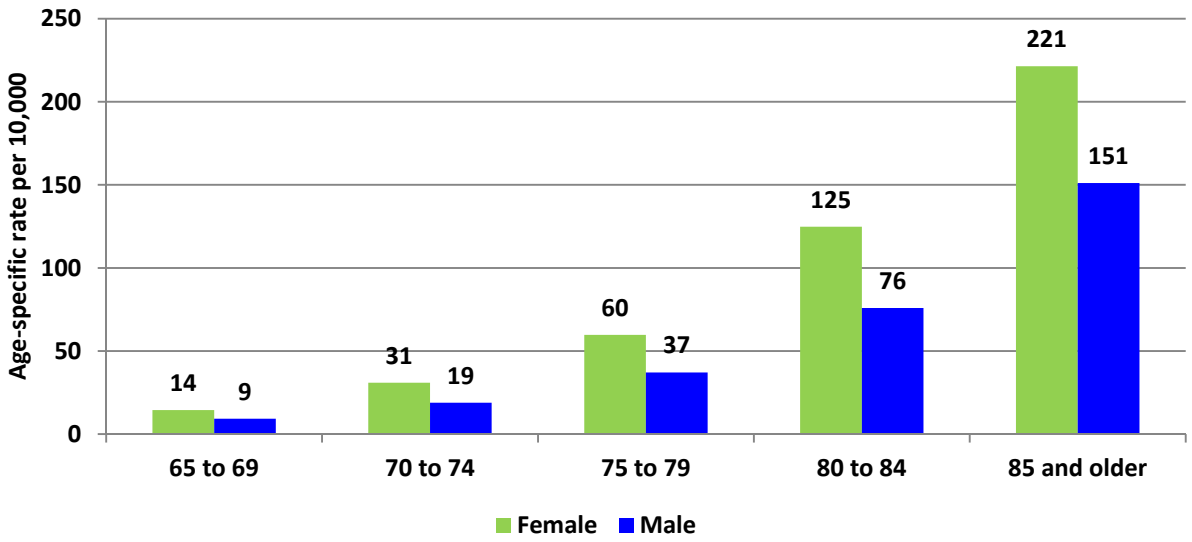


Source: NH DHHS; WISDOM

Hip fractures are a common injury from falls and are more likely to happen in women than men. About 95% of hip fractures are caused by falls and in 2010 in the United States there were 258,000 hip

fractures in the United States. Within one year of a hip fracture, one out of five patients dies and one in three adults that lived at home before their hip fracture remained in a nursing home one year later. In NH, hip fractures increase as age increases and women are more likely than males to have a hip fracture, which follows national trends (Figure 2.7).[28]

Figure 2.7 Hip Fracture Hospitalizations, Adults over 65 years, NH, 2005-2009



Source: NH DHHS; WISDOM

Congestive Heart Failure

Congestive heart failure can be caused by diabetes, hypertension or coronary heart disease and is a condition that impairs the hearts' ability to pump blood to the body. About 5.8 million individuals in the United States have congestive heart failure and it is one of the most common reasons older adults are hospitalized. From 2000 to 2010, there were 1 million hospitalizations for congestive heart failure and the hospitalization rate for congestive heart failure was 32.8 per 10,000. Individuals with congestive heart failure have to focus on receiving timely and quality care to prevent going to the emergency department for treatment that could have been prevented with care in the outpatient setting.[14] In the GNPHR and Nashua, the rate for hospitalizations from congestive heart failure was significantly lower when compared to the New Hampshire (Figure 2.8). The hospitalization rate for congestive heart failure has decreased since 2000 and was 5.44 per 10,000 in 2009 for the GNPHR (Figure 2.9).[26]

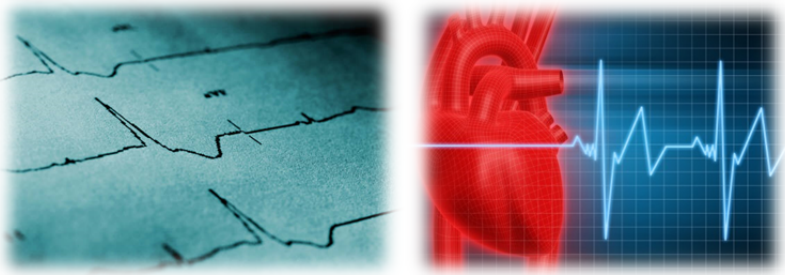
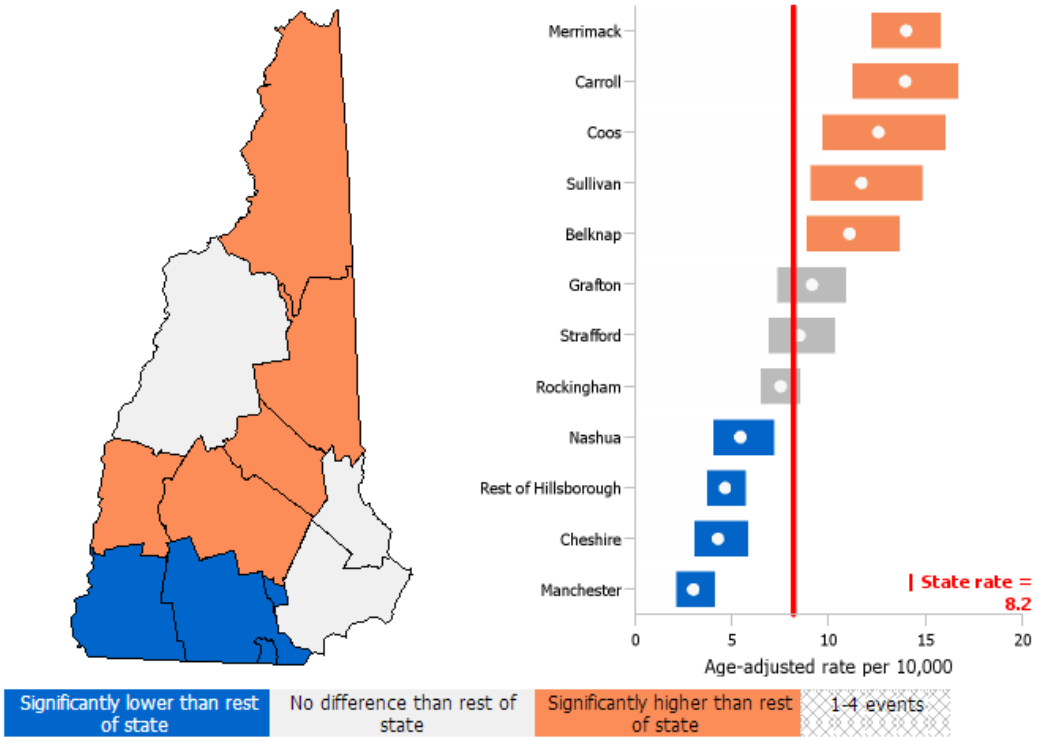
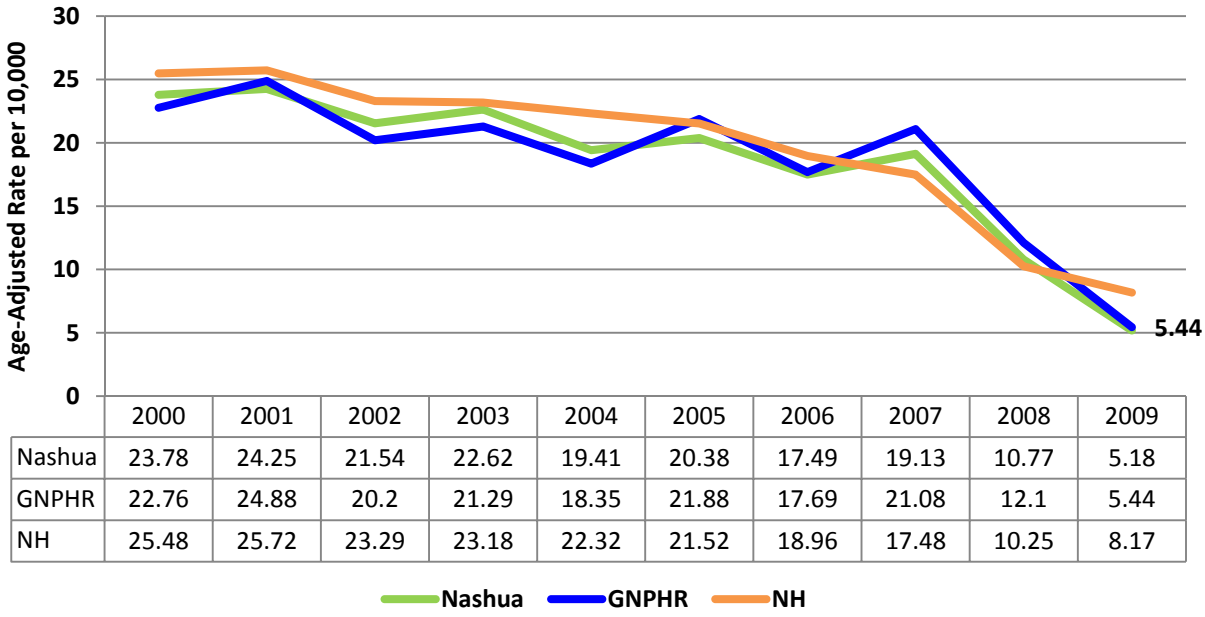


Figure 2.8 Congestive Heart Failure Hospitalizations, Age-Adjusted Rate, 2009



Source: NH DHHS; WISDOM

Figure 2.9 Congestive Heart Failure Hospitalizations, 2000-2009



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Nashua	23.78	24.25	21.54	22.62	19.41	20.38	17.49	19.13	10.77	5.18
GNPHR	22.76	24.88	20.2	21.29	18.35	21.88	17.69	21.08	12.1	5.44
NH	25.48	25.72	23.29	23.18	22.32	21.52	18.96	17.48	10.25	8.17

Source: NH DHHS; WISDOM

Arthritis

According to the National Health Interview Survey from 2010-2012, 52.5 million adults have arthritis and about 22.7 million have limitations to activities due to arthritis. About 3.1 million Hispanics had arthritis, and work limitations were more prevalent among Mexican-Americans. In 2003, the total costs attributable to arthritis and rheumatic conditions was $574 million in New Hampshire and the total costs for the United States was $128 billion, about 1.2% of the US gross domestic product.[29] In the GNPHR, 24% of adults have arthritis and the prevalence of arthritis increases as age increases. About 55% of adults with arthritis have limitations to their activities due to their arthritis (Table 2.13).[5]

Table 2.13 Arthritis in Adults, 2012

	Nashua	GNPHR	NH
Arthritis prevalence	24.8% (19.7-29.9%)	24.6% (21.1-28.1%)	25.9% (24.6-27.2%)
18-44 yrs	9.4% (3-15.8%)	11.3% (6.1-16.4%)	10.2% (8.4-12%)
45-64 yrs	33.6% (24.5-42.6%)	28.8% (23.4-34.2%)	31% (28.9-33.1%)
65 or older	50.2% (38.9-61.6%)	54.5% (46.6-62.3%)	53.1% (50.5-55.7%)
Activity limitation due to arthritis in adults with arthritis	61.4% (50.7-72.2%)	55.4% (47.4-63.4%)	50.3% (47.5-53.1%)
Source: NH DHHS; BRFSS			

Focus Group on the Impact of the Aging Population

The Impact of an Aging Population focus group was held on March 25, 2014 at Dartmouth-Hitchcock Nashua. The top priority issues identified by the attendees are highlighted in table 2.14 and include access to and coordination of care, access to affordable medications and caregiver stress as the top three issues. Discussion points for the top three priority areas are highlighted below.[23]

The Centers for Disease Control and Prevention published the State of Aging & Health in America 2013 which focuses on the health of adults aged 65 years or older and provides great health data. Check it out at http://1.usa.gov/1lTa06V.

Table 2.14 Priority Areas for the Aging Population

Priority	Identified Concerns
1	Access to and Coordination of Care
2	Access to Affordable Medication
3	Caregiver Stress
4	Transportation
5	Disease Self-Management
6	Mental Health
7	Isolation
8	Housing
9	Nutrition

Priority Issue #1: Access to and Coordination of Care (Specifically for Seniors)

- Participants were concerned with the duplication of efforts that happens in a "fragmented" health care and support system that puts people at risk of "falling through the cracks." Participants saw a need to improve setting goals-of-care, and to ensure all providers on a case are working towards the same goal.
- Participants see a need for community resources to be better connected and coordinated with the health care agencies (i.e. housing, nutrition) to help keep elders healthy and safe.
- Participants were concerned with the lack of services to help elders "age in place."
- Participants discussed the issue of long waiting lists for senior housing.
- Participants felt that there is an insufficient workforce to care for an increasing number of seniors in the greater Nashua region.
- Participants want to see the word "care" defined broadly across other life issues, such as aging in place, and not limited to use as a medical term.

Priority Issue #2: Access to Affordable Medication

- Participants discussed at length how drug plans are incredibly complex and difficult to understand, and the cost of medication is rising.
- Participants see a need for medication reconciliation across providers as many patients' medication regimens are complex.
- Participants perceive a need for non-geriatric specialty providers to receive education about geriatric-specific concerns.
- Participants felt that families also need education around medication management.

Priority Issue #3: Caregiver Stress

- Participants were very concerned about the various issues faced by caregivers, such as juggling full-time work and caring for a loved one. They acknowledged the emotional and economic

impact on caregivers can be very significant with the need to use sick/leave time, loss of productivity and wages at work, added stress at home.[23]

2-1-1 New Hampshire and ServiceLink

2-1-1 New Hampshire is a program that links callers to health and human services available in New Hampshire. It is monitored 24/7 and individuals are linked at no charge, to a trained information and referral specialist who can provide health information. From October 2011 to October 2012 the top calls for health and mental health services were: information on community clinics, domestic violence hotlines and dental care (Table 2.15).[30]

Table2.15 Information Needs, 2-1-1 Callers, 2011-2012

Health Care Information Needs	
1	Community Clinics
2	Dental Care
3	Prescription Assistance
Mental Health Information Needs	
1	Domestic Violence Hotlines
2	Community Mental Health Agencies
3	Outpatient Drug Abuse Treatment
Source: 2-1-1 NH	

ServiceLink is a statewide network of locally administered community based resources for seniors, adults with disabilities and their families. It is free, and connects users to the appropriate services that support healthy and independent living. In 2013, the top six reasons callers used ServiceLink are listed in table 2.16.[31]

Table 2.16 ServiceLink Priority Topics for Callers

Priority	Identified Concerns
1	Medicare
2	Case Management
3	Long Term Care Options/Counseling
4	Basic Needs
5	Long Term Care Information
6	Medicaid

[1]United States Department of Health and Human Services, Centers for Disease Control and Prevention. "Healthy People 2020 Leading Health Indicators". May 2014. http://www.healthypeople.gov/2020/LHI/HP2020_LHI_Nut_PhysActiv.pdf. Retrieved, 6/9/2014.

[2]National Center for Health Statistics. Health, United States, 2013: With Special Feature on Prescription Drugs. Hyattsville, MD. 2014. Retrieved on October 8, 2014 from http://www.cdc.gov/nchs/data/hus/hus13.pdf.

[3]New Hampshire Division of Public Health Services, Department of Health and Human Services. "2011 New Hampshire State Health Profile: The State of New Hampshire's Health, A Report to New Hampshire Residents". Retrieved on October 8, 2014 from http://www.dhhs.nh.gov/dphs/documents/2011statehealthprofile.pdf.

[4] United States Census Bureau. Small Area Health Insurance Estimates Program (SAHIE). 2012. Retrieved on October 8, 2014 from http://www.census.gov/did/www/sahie/.

[5]Bureau of Health Statistics and Data Management. (2012). *New Hampshire Behavioral Risk Factor Surveillance System Data.* Concord, NH: New Hampshire Department of Health and Human Services, 2012.

[6]United States Census Bureau, American Community Survey (ACS). *Population and Housing Narrative Profile 2008-2012 American Community Survey 5-Year Estimates*. Retrieved on October 8, 2014 from http://www.census.gov/acs/www/data_documentation/2012_narrative_profiles/.

[7]United States Department of Health and Human Services, Centers for Disease Control and Prevention. *National Vital Statistics System. Mortality Data*. Retrieved on October 8, 2014 from http://www.cdc.gov/nchs/deaths.htm.

[8]United States Department of Health and Human Services. *"How the Health Care Law Benefits You".* Retrieved on October 8, 2014 from http://www.hhs.gov/healthcare/facts/bystate/Making-a-Difference-National.html.

[9]National Institutes of Health, National institute of Mental Health. *Serious Mental Illness (SMI) among Adults*. Retrieved on October 8, 2014 from http://www.nimh.nih.gov/health/statistics/prevalence/serious-mental-illness-smi-among-us-adults.shtml.

[10]Gindi, Renee and Jones, L. *Reasons for Emergency Room Use Among U.S. Children: National Health Interview Survey, 2012.* United States Department of health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics. NHCS Data Brief, No. 160. July 2014. Retrieved on October 8, 2014 from http://www.cdc.gov/nchs/data/databriefs/db160.pdf.

[11]Ward, Brian W. et al "Sexual Orientation and Health Among U.S. Adults: National Health Interview Survey, 2013". National Health Statistics Reports. No. 77. July 15, 2014. Retrieved on October 8, 2014 from http://www.cdc.gov/nchs/data/nhsr/nhsr077.pdf.

[12]United States Department of health and Human Services, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention. *Facts at a Glance: Suicide*. 2012. Retrieved on October 8, 2014 from http://www.cdc.gov/ViolencePrevention/pdf/Suicide_DataSheet-a.pdf.

[13]United States Department of health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health. *The State of Aging and Health in America.* 2013. Retrieved on October 8, 2014 from http://www.cdc.gov/aging/pdf/state-aging-health-in-america-2013.pdf.

[14]Hall, Margaret Jean, Ph.D., Levant, Shaleah, M.P.H., DeFrances, Carol J, Ph.D., *Hospitalization for Congestive Heart Failure: United States, 2000-2010. NHCS Data Brief. No. 108*. October 2012. Retrieved on October 8, 2014 from http://www.cdc.gov/nchs/data/databriefs/db108.pdf.

[15]United States Department of Health and Human Services, Centers for Disease Control, Arthritis, Data and Statistics. Retrieved on October 8, 2014 from http://www.cdc.gov/arthritis/data_statistics.htm.

[16]City of Nashua, Division of Public Health and Community Services Community Health Assessment Data Subcommittee, personal communications, 2014.

[17]CDC. (2014). *Oral Health Data Systems My Water's Fluoride*. Retrieved on October 14, 2014 from http://apps.nccd.cdc.gov/MWF/PWSDetailV.asp?PWSID=1445010&State=NH&StartPg=1&EndPg=20&County=Hillsborough&PWSName=&Filter=0&PWS_ID=&State_ID=NH&SortBy=1&StateName=New+Hampshire.

[18]CDC. (2014). *Community Water Fluoridation Cost Savings of Community Water Fluoridation*. Retrieved on October 14, 2014 from http://www.cdc.gov/fluoridation/factsheets/cost.htm.

[19]U.S. Department of Health and Human Services. (2014). *PROFILES OF AFFORDABLE CARE ACT COVERAGE EXPANSION ENROLLMENT FOR MEDICAID / CHIP AND THE HEALTH INSURANCE MARKETPLACE, 10-1-2013 TO 3-31 2014.* RETRIEVED FROM HTTP://aspe.hhs.gov/health/reports/2014/MarketPlaceEnrollment/Apr2014/Marketplace_StateSum.cfm

[20]NH DHHS, Bureau of Health Care Analytics and Data Systems Office of Medicaid Business & Policy. (2013). *Medicaid Enrollment Database*. Concord, NH: New Hampshire Department of Health and Human Services, 2013.

[21]NH DHHS. (2014). *City of Nashua Third Grade Survey An Oral Healt and Body Mass Index Assessment of Nashua's Third Grade Students*. Retrieved from http://bit.ly/NashuaHSHG

[22]Data Resource Center for Child and Adolescent Health. *Browse by Survey & Topic*. Retrieved from http://childhealthdata.org/browse/survey.

[23]City of Nashua Division of Public Health and Community Services. (2014). *Greater Nashua Community Health Assessment Focus Group Summary Report*. Retrieved from http://www.nashuanh.gov/CityGovernment/Departments/PublicHealthCommunityServices/CommunityHealthAssessments/2014CommunityHealthAssessment/tabid/1152/Default.aspx.

[24]Greater Nashua Dental Connection, personal communications, 2014.

[25]Bureau of Health Statistics and Data Management. (2013). *New Hampshire Youth Risk Behavioral System Data*. Concord, NH: New Hampshire Department of Health and Human Services, 2013.

[26]Bureau of Public Health Statistics and Informatics. (2009). *Emergency Department and Hospitalizations Database*. Concord, NH: NH DHHS.

[27]CDC. (2014). *Falls Among Older Adults: An Overview*. Retrieved from http://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html.

[28]CDC. (2014). Hip Fractures Among Older Adults. Retrieved from http://www.cdc.gov/HomeandRecreationalSafety/Falls/adulthipfx.html.

[29]CDC. (2014). Arthritis Related Statistics. Retrieved from http://www.cdc.gov/arthritis/data_statistics/arthritis_related_stats.htm.

[30]2-1-1 New Hampshire, personal communications, 2014.

[31]ServiceLink, personal communications, 2014.

"Children are our future, and their mothers are its guardians."

- *Kofi Annan, former UN Secretary-General*

Healthy Moms and Babies

CONTENTS

The idea that health begins before we are born is especially relevant when considering the factors that impact pregnant and postpartum mothers and their children. Prenatal care that includes monitoring both mother and baby throughout pregnancy, and even preconception care to support healthy behaviors before becoming pregnant, are efforts that can influence maternal and child health. Additional factors, such as home environment, birth environment, and the mother's education, income and ethnicity are some other influences of maternal and child health.

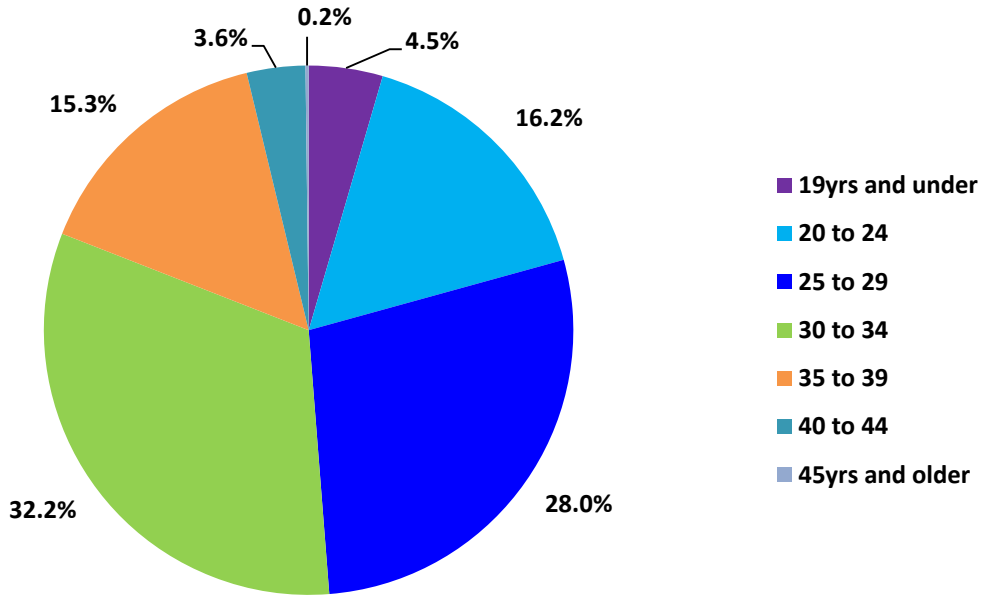
Childhood health is intimately linked with maternal health, from the unborn child where prenatal care can influence newborn physical health to young adulthood where maternal health can influence mental and physical health habits. A variety of metrics are available to quantify and qualify a wide range of maternal and childhood health conditions from newborn birth weight to childhood attitudes about body image. However, traditional vital statistics such as child mortality rate and educational enrollment statistics provide additional significant insight into the state of childhood health. The Healthy People 2020 goal to improve the health and wellbeing of women, infants, children, and families is supported by its objectives to improve national metrics around infant mortality, preconception, pregnancy and postpartum health of mothers, infant care and the reduction of impairments, and access to health services.[1]

In the United States the leading causes of childhood mortality are unintentional injuries, birth defects, homicide, cancer, and heart disease.[2] While access to healthcare facilities and better nutrition formed the basis for the long-term decline in childhood mortality rates since 1950, in order to further reduce child mortality rates we will need to address the higher rates of injury and violence in the United States compared to its international peers (e.g. Sweden and Japan). [3] Education and programming that assists families in reducing hazards to child health, including collaborative efforts to ensure physical wellbeing, can help the nation eliminate preventable problems such as neonatal abstinence syndrome (NAS), child abuse and neglect, lead poisoning, and others.

In the Greater Nashua Public Health Region, there were a total of 12,893 births between 2008 and 2013. Of these, 71.2% of mothers were married when they delivered their baby. Over the five year period, 5% of babies were born to teenagers, a total of 583 births. Additional information about teen births and teen pregnancy is included later in this chapter. The majority of births, accounting for 60% of all births in the region, were to women between the ages of 25 and 34. Figure 3.1 shows the percentages of births by maternal age for the region.[21]

In the United States the leading causes of childhood mortality are unintentional injuries, birth defects, homicide, cancer, and heart disease.[2] While access to healthcare facilities and better nutrition formed the basis for the long-term decline in childhood mortality rates since 1950, further reduction of child mortality rates should address the higher rates of injury and violence in the United States.

Figure 3.1 Maternal Age, GNPHR, 2008-2013



Source: NH DHHS

In addition to issues related to maternal age at the time of a child's birth, there are financial implications related to pregnancy, labor, and delivery. During the same 2008-2013 period, the costs of delivering a baby born in the Greater Nashua Public Health Region was most often paid for by private or Medicaid insurers, with 63.5% of mothers covered by private insurance.[21] While eligibility varies by state, all states offer some type of Medicaid program for pregnant women without private insurance. In NH, pregnant women without private insurance who meet New Hampshire's Medicaid income eligibility requirement of income below 185% of the federal poverty line can apply for coverage to meet the costs of prenatal care and delivery. Women who have NH Medicaid coverage at the time of delivery gain an additional benefit that extends their individual medical assistance for 60 days after delivery, regardless of other eligibility criteria. In addition, babies born to mothers covered by NH Medicaid gain medical assistance coverage up until their first birthday.[4] Figure 3.1 shows the percentage of births paid for by private insurance, self-pay, NH Medicaid, and other sources. In Nashua, 28.8% of births are paid with Medicaid assistance, which is higher than the regional rate of 21.5%. Nashua's rate is closer to the state rate of 29.2% of births where costs were paid by the State of New Hampshire Medicaid system. At the same time, Nashua's self-pay rate (deliveries paid for by individuals without any kind of insurance support) of 3.6% exceeds the private pay rate in both the region and the state as a whole. In Nashua, the GNPHR, and the State there between 8% and 11% of births for which the payment information is not known.[21] The method of payment information for NH residents who deliver their babies in other states is not always included in the vital records data, thus contributing to the percentage of births for which payment information is not known.

Table 3.1 Payor for Birth, 2008-2013

	Nashua	GNPHR	NH
Private Insurance	57.2%	63.5%	58.4%
Self pay	3.6%	2.4%	2.0%
Medicaid	28.8%	21.5%	29.2%
Other	1.3%	1%	2.0%
Unknown	9.1%	11.5%	8.4%

Source: NH DHHS, 2008-2013

Pre-Natal Care

A number of health problems for mothers and children, such as issues related to excessive weight gain of mothers or low birth weight of babies, smoking or exposure to opiate drugs, can be identified during prenatal or postpartum screenings. The Healthy People 2020 goal is to increase the percentage of women who receive prenatal care in the first trimester to 77.9%. This goal was not achieved within the City of Nashua, the Greater Nashua Public Health Region or the State of NH during the 2008-2013 timeframe measured (Table 3.2). The Maternal and Child Health Section within the NH Division of Public Health Services provides funding to community health care centers to deliver prenatal, child health, family planning and home visiting options so that access to these important services is available to all families, including those without inadequate income or insurance.

In measuring the adequacy of prenatal care, the established Kotelchuck Adequacy of Prenatal Care Utilization (APNCU) Index combines information about the timing of when prenatal care is initiated and the number of expected prenatal visits completed to generate an adequacy score. Information for the Kotelchuck Index is obtained from new mothers after they have delivered a baby. Although an APNCU Index measurement of at least 80% is necessary for prenatal care to be considered "adequate care", it is important to note that the index reflects use of services (i.e. timing and number of visits) only and does not measure the quality of care. Table 3.2 shows the percentage of pregnant women who received prenatal care during the first trimester as well as the percentages for the Kotelchuck categories of care. In NH, between 2008 and 2013, 68.9% of pregnant women received prenatal care in the first trimester of pregnancy. During this time, more than 70% of pregnant women in the State of NH participated in care that is defined by the Kotelchuck Index as "adequate," meaning care that meets the recommended utilization standards, or "intensive," meaning care that is adequate or more than adequate. Recommended standards are based on typical, uncomplicated, pregnancies, so the Kotelchuck Index scores may not be as useful in measuring the adequacy of care for high risk pregnancies. Looking at the state as a whole, 7.7% of pregnant women had inadequate use of prenatal services and an additional 3.8% received services that did not meet the recommended utilization standards. In the Greater Nashua Public Health Region 76.5% of pregnant women had prenatal care in the first trimester, and the overall adequacy rates indicate prenatal care useage met adequate utilization standards for 37.1% of mothers and intensive care standards for 33.1% of mothers. Pregnant women in the City of Nashua participated

in prenatal care at a rate of 70.6%, slightly lower than the regional rate. In addition, the APNCU Index rates for Nashua show that 15.4% scored below the adequate category for prenatal care utilization, indicating that there is a higher percentage of pregnant women in Nashua whose prenatal care is delayed and/or that they are not receiving the recommended number of prenatal visits before delivery.[21]

Table 3.2 Prenatal Care and Kotelchuck Index

	Nashua	GNPHR	NH
Prenatal Care in First Trimester	70.6%	76.5%	68.9%
APNCU – Kotelchuck Index			
Inadequate	8.3%	7.2%	7.7%
Intermediate	7.1%	6.5%	3.8%
Adequate	37.6%	37.1%	29.2%
Intensive Use	32.1%	33.1%	42.3%
Missing Information	14.9%	16%	17.0%
Source: NH DHHS, 2008-2013			

BMI and Pregnancy

Maintaining a healthy weight during the year of infant birth is one way that mothers can influence their long term individual health as well as the health of their baby. For moms, being overweight or obese during pregnancy can cause problems such as miscarriage, stillbirth, preterm birth, high blood pressure and preeclampsia, gestational diabetes, and additional risks of delivering a large baby. These health risks increase as BMI increases. And, while most babies of overweight and obese women are born healthy, they are at higher risk for birth defects, injury, and childhood obesity.[5] Table 3.3 provides information about the pre-pregnancy weight status of mothers during the year they had their babies. During the six year period between 2008 and 2013 in Nashua, 43.1% of pregnant women had a normal Body Mass Index (BMI) between 18.5 and 24.9 during the year prior to infant birth. The percentage is close to the regional rate of 43.3% and the state rate of 43.6%. During this same six year period, the percentage of Nashua women whose pre-pregnancy status was overweight during the year they had children was 22.3%. This is somewhat higher than the regional rate of 20.9% and the state rate of 20%. Individuals who have exceeded the definition for overweight, i.e. have a BMI rating of >30 are considered obese. Looking at the data for Nashua, 18.7% of women who had children were obese during the year before they had their baby. Similar obesity rates of 17.9% for the region and 19.0% for the State of NH indicate that the issue of pre-pregnancy obesity among pregnant women is a consistent concern within the three geographies.[21]

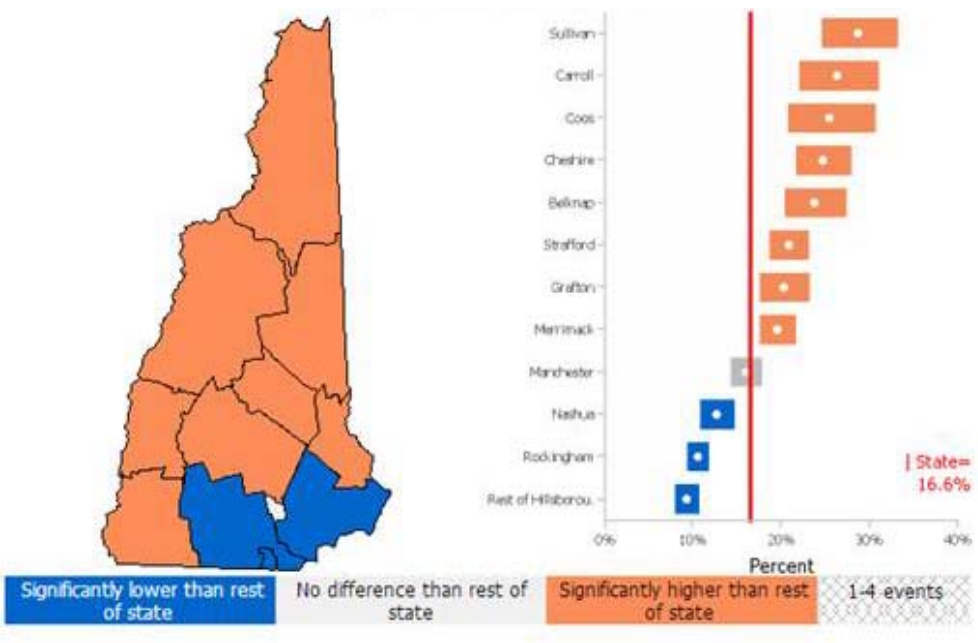
Table 3.3 Maternal BMI

	Nashua	GNPHR	NH
Underweight	3.0%	2.9%	3.1%
Normal weight	43.1%	43.3%	43.6%
Overweight	22.3%	20.9%	20.6%
Obese	18.7%	17.9%	19.0%
Unknown	12.8%	14.9%	13.7%
Source: NH DHHS, 2008-2013			

Substance Use and Pregnancy

Another factor that influences the health of both mothers and their babies is substance use. Considering tobacco use alone, during 2013 there were 89% of moms in the Greater Nashua Public Health Region who did not smoke during pregnancy; however 9.8% did smoke. During 2013 in Nashua, 12.1% of pregnant women smoked and 87.5% did not. These rates fall below the Healthy People 2020 goal to increase abstinence from cigarette smoking to 98.6%.[6] Figure 3.2 below indicates that the percentage of mothers who smoked during pregnancy was significantly lower in Nashua than in other areas of the state.[21]

Figure 3.2 Smoking during pregnancy, 2011



There are clear disparities when considering the age of the mothers who smoke while pregnant. Between 2007 and 2011 in the Greater Nashua region, the percentage of younger mothers between 15 and 24 years who smoked while pregnant ranged between 25.7% and 27.7% of all pregnant mothers in

the age category. For the next age group of 25-29 year old mothers, the rate of reported smoking decreased to 11.5%. Lower smoking rates of between 5.37% and 3.81% for older mother's ages 30-44 in the Greater Nashua region contribute to the calculation for an overall rate of 11.7% for women of all ages in the Greater Nashua region who reported smoking during pregnancy during the 2007-2011 period.[7,21] In all age groups, the percentage of women in the Greater Nashua region who smoke during pregnancy is still higher than the HP2020 target goal.

According to the State of NH DHHS, opioid addiction is on the rise within the state and has resulted in a rising number of babies born in New Hampshire with symptoms of withdrawal related to maternal drug use. Opiate drugs include many prescription painkillers which may be used as prescribed and are also misused by those who have become addicted to opiates. The serious impact of opiate drug misuse by pregnant women is reflected in the aggressive HP2020 goal to increase abstinence from illicit drugs among pregnant women to 100%.[6] In NH there has been an increase in newborns diagnosed with Neonatal Abstinence Syndrome (NAS). In 2009, there were about 120 newborns diagnosed with NAS in NH compared to 2000 when there were fewer than 2 diagnosed with NAS. Just after birth, these babies exhibit symptoms of irritability, feeding difficulty, respiratory problems, and seizures and require intensive and costly care for several weeks after birth.[8] Between 2009 and 2013 in the Greater Nashua Public Health Region, there were 62 births, resulting in a rate of 6.7 per 1,000 births, where newborns were diagnosed with NAS shortly after birth.[24] In comparison, the rate of newborns with NAS in 2009 was about 8 per 1,000 live births.[23]

In the United States, NAS affects all races, ethnic groups, and socio-economic levels. However, Medicaid enrolled patients are disproportionately affected, representing over 75% of the infants diagnosed with NAS. Children born with NAS require special treatment prior to leaving the hospital and have an average hospital stay of 16 days, compared to a typical 3 day stay for other US births.[9] In a 2013 open letter to media and policy makers, over 50 U.S. physicians and PhD's cautioned that much of the current media information about NAS is incorrect, stigmatizing, and ultimately harmful to the health and well-being of pregnant women, their children, and their communities. They want to be clear that babies are not "born addicted" and that NAS is a treatable syndrome that has not been associated with long term adverse consequences. Also, as proponents of the World Health Organization's determination that addiction is a chronic medical condition that is not yet curable but is most definitely treatable, they are concerned that misinformation and lack of understanding across society make it difficult for pregnant women who could benefit from methadone treatment to access those services. [10, 11]

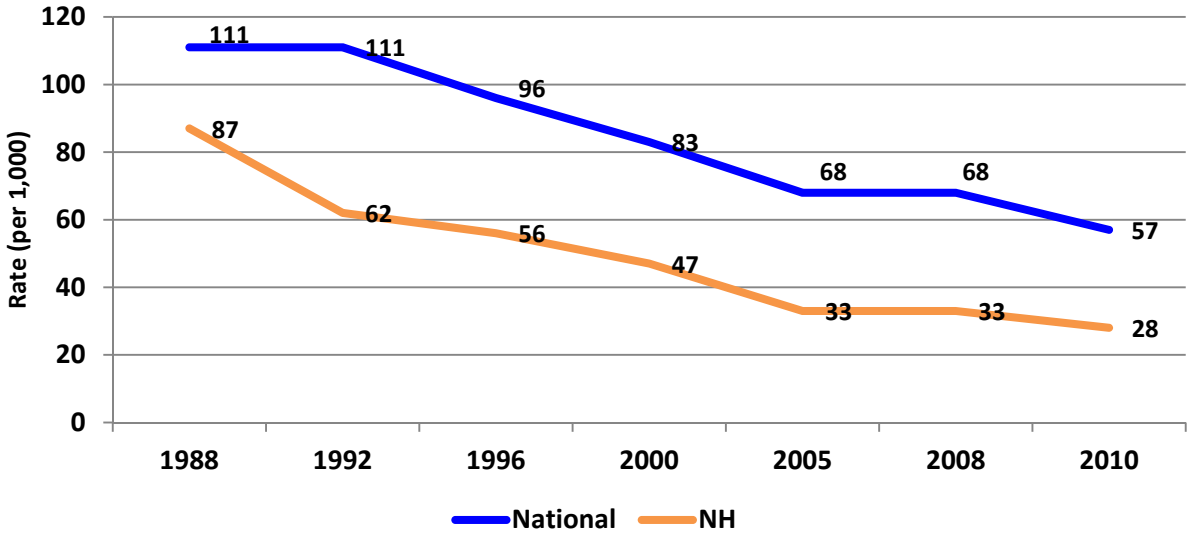
Teen Pregnancy

The challenges related to teen pregnancy include social, emotional, financial, and physical health consequences for mothers, fathers, and babies. Pregnant teens have higher risk of medical complications such as placenta previa, pregnancy-induced hypertension, premature delivery, toxemia, and anemia. Babies born to teens are more likely to have low birth weight than those born to mothers over the age of 20. When compared to their peers who delay having children, teen mothers are less likely to finish high school, more likely to rely on public assistance and to require that assistance for a

longer period of time. Adolescent pregnancy is associated with higher rates of illness and death for both the mother and infant. Death from violence is the second leading cause of death during pregnancy for teens, and is higher in teens than in any other group.[12]

Nationally, progress in decreasing the teen birth rate is evident based on data gathered since 1991. Between 2008 and 2010, the teenage pregnancy rate declined in all 50 states. Still, in the U.S. during 2013 there were almost 275,000 babies born to teen girls aged 15-19. According to a 2014 Guttmacher Institute Report based on 2008 teen pregnancy rates among NH teens aged 15-19, NH's teen pregnancy rate of 28 per 1000 is the lowest teen pregnancy rate in the country. Figure 3.3 compares the declining teen pregnancy rates for the United States and for NH. The report also indicated that NH pregnancy rates differed by race and ethnicity. The birthrate for black teens in New Hampshire is 25 percent higher than the rate for non-Hispanic whites, while the birthrate for Hispanic teens is almost 40 percent higher than the rate among non-Hispanic white teens. [22]

Figure 3.3 Teen Pregnancy Rate (per 1,000 teens) in NH and the US, 2010



Source: U.S. Teenage Pregnancies, Births and Abortions, 2010: National and State Trends by Age, Race and Ethnicity

Between the years 2009 and 2013, Nashua experienced its highest teen birth rate during 2011, when the city's teen birth rate was 23 per 1,000 births. During this same period, when Nashua information is combined with other towns in the GNPHR, the resulting regional rates are consistently lower, ranging between 11 per 1,000 and 13 per 1,000. During 2013 in the Greater Nashua Region, the teen birth rate was 11 per 1,000 births, the lowest rate recorded for the region over the five year period for which data is available. During 2013 in Nashua the teen birth rate was 19 per 1,000 births, which is higher than either the region or state rates but still lower than Nashua rates in the previous four years. Table 3.4 shows the teen birth rates by City of Nashua and the GNPHRbetween 2009 and 2013. [21]

Table 3.4 Teen Birth Rate by Geography, 2009-2013

Teen birth rate (per 1,000)	Nashua	GNPHR
2009	20.5 (CI 15.7-26.4)	13.4 (CI 10.9-16.3)
2010	19.6 (CI 14.9-25.4)	13.0 (CI 10.5-15.9)
2011	23.6 (CI 18.3-30.0)	13 (CI 10.5-15.9)
2012	22.1 (CI 17.0-28.3)	13.0 (CI 10.5-15.9)
2013	19.2 (CI 14.4-25.0)	11.2 (CI 9.0-14.0)
Source: NH DHHS, 2009-2013		

Teen childbearing costs U.S. taxpayers billions of dollars due to lost tax revenue, increased public assistance payments, and greater expenditures for public health care, foster care, and criminal justice services. In NH, teens have access to family planning programs and education about preventing unintended pregnancies. In 2010, the reported public expenditures for family planning client services in New Hampshire totaled $4.6 million, which included $2.1 million through Medicaid and $1.6 million through the Federal Title X Family Planning program, leaving under $1M to be supported through other NH state based funding. The services provided by family planning centers in New Hampshire helped avert 5,900 unintended pregnancies in 2012, thereby saving federal and state government funds for pregnancy-related and newborn care.[22]

Delivery, Pre-term Birth and Birth Weight

Nationally, the Pregnancy Risk Assessment Monitoring System (PRAMS) survey collects state-specific, population-based data about maternal attitudes, behaviors, and experiences. The survey samples mothers who have recently delivered and seeks to obtain information on topics such as prenatal care, maternal use of alcohol and cigarettes, stress, contraception, early infant development, and other subjects related to pregnancy and birth. Data collected through PRAMS enhances the data that is available on birth certificates and can be useful in determining groups of women and infants at high risk for health problems, monitoring changes in health status, and measuring progress in improving mother and infant health.

Other information, such as method of delivery, weeks of gestational development, and infant birth weight are all factors to consider when looking at postpartum health of mothers, infant health status and early childhood development. Mothers who deliver by caesarean section, for example, must recover from abdominal surgery as well as the event of birth and they may require additional time to do so. In terms of delivery method, HP2020 has a goal to reduce caesarean births among low-risk women to 23.9%. [13] Low risk women are defined as those with full term, singleton pregnancies where the baby is in

a vertex (head down) position. Table 3.4 compares the delivery method by geography for cesarean births, vaginal births, and vaginal births with forceps or vacuum assistance. The data is not exclusive to low risk pregnancies. However, it does provide a picture of the differences in delivery method for all births in the indicated geographies. Nashua has a slightly higher percentage, 67.2% of vaginal births, compared to the regional percentage of 66.8% or the state percentage of 65.5%. The percentage of caesarean births is also lowest in Nashua, with 28.5% of births by caesarean section. In the region, there is a slightly higher percentage of 29.1% for caesarean deliveries, and in the state of NH the overall percentage is 30.5% for caesarean deliveries.[21]

Infant birth weight is established when babies are born and is important health information included on New Hampshire issued birth certificates. Babies with low birth weight (less than 5 lbs 8 oz)or very low birth weight (less than 3 lbs 4 oz) are at increased risk for infant mortality or future health complications. Healthy People 2020 goals related to birthweight include a goal to reduce low birth weight to 7.8% of live births and very low birth weight to only 1.4% of live births. [14] Overall, efforts to reduce the number of low birth weight deliveries is not a pressing concern in New Hampshire or the Greater Nashua Region. According to the 2011 NH State Health Profile, the NH percentage of low and very low birth weight has been below the national rate since 1997. In Table 3.4 birthweights for babies born in Nashua, the Greater Nashua Region, and the State of NH are compared.[21] When compared to the Healthy People 2020 goal of 7.8% for low birth weight and 1.4% for very low birth weight, all three NH geographies exceed the HP2020 goals.

In Nashua, the Greater Nashua Region and the State of NH ,the majority of babies are considered “full term” babies because they have reached a gestational age of at least 39 weeks. Full term deliveries account for between 67.7% and 69.8% of all deliveries in the three geographies identified in Table 3.4.[21] A full term delivery is preferred because the in utero fetus has had time and nourishment to develop their health potential and are therefore less likely to have problems such as visual and hearing impairments, developmental delays, and behavioral and emotional issues. Babies who are born earlier than 39 weeks may have additional health risks due to their size and degree of gestational development. Risks increase the earlier the baby is born, particularly for “pre term” deliveries defined as those before 37 weeks of gestation. Reducing the number of preterm birthsto 11.4% has been determined as a high priority goal among the HP2020 goals for decreasing infant morbidity and mortality. In Nashua, the combined total for preterm births was 9.6%, which includes the percentages for both moderately pre term (< 37 weeks) and very preterm (<32 weeks) births.[21] The Nashua rates are better than the HP2020 target goal of 11.4% of live births being preterm. Regionally and statewide, percentage rates for preterm births are slightly lower than the Nashua rates, so all geographies have met or exceed the HP2020 goal for preterm births.

Table 3.5 Prenatal Care Indicators, 2008-2013

	Nashua	GNPHR	NH
Birth Weight			
High Birth Weight (≥4,000 grams)	10.2%	11.4%	11.0%
Normal Birth Weight (2,500-3,999 grams)	81.3%	80.8%	81.8%
Moderately Low Birth Weight (1,500-2,499 grams)	6.7%	6.1%	5.7%
Very Low Birth Weight (<1,500)	1.3%	1.1%	1.1%
Unknown	0.4%	0.5%	.3%
Method of Delivery			
Cesarean	28.5%	29.1%	30.5%
Vaginal	67.2%	66.8%	65.5%
Vaginal with Forceps or Vacuum	4.4%	4.1%	3.9%
Pre-term Births			
Very Preterm (<32 weeks)	1.5%	1.3%	1.3%
Moderately Preterm (32-36 weeks)	8.1%	7.8%	7.1%
Early Term (37-39 weeks)	21.9%	21.9%	20.4%
Full Term (≥39 weeks)	67.6%	67.7%	69.8%
Unknown	.9%	1.3%	1.4%

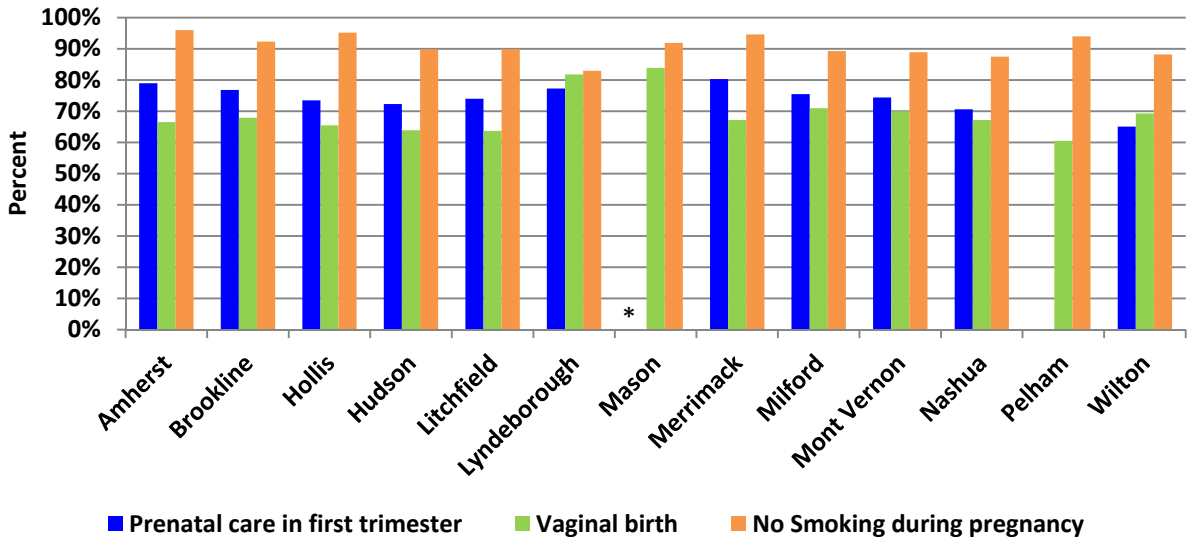
Source: NH DHHS, 2008-2013

Between 2011 and 2012 there were 14 sleep related infant deaths in New Hampshire. The New Hampshire Sudden and Unexpected Infant Death (SUID) Review Group reviews SUID deaths in the state and issued a data brief on the 2011-2012 cases. Although the information they collected is from such a small sample that it should not be generalized, one environmental factor noted in 100% of the cases was the presence soft or loose bedding in the child's sleep environment. Other environmental issues noted in the SUID circumstances included infants sleeping in shared surfaces, not on their backs, and in places other than cribs. The American Academy of Pediatrics recommends that infants should sleep alone, on their backs, in a safety-approved crib, bassinette, or portable play area where there are no soft objects or loose bedding. Best practices for mothers include avoiding smoke exposure during pregnancy and after birth, getting early and regular prenatal care, and breastfeeding.[15]

Maternal Health Indicators by Town

Figure 3.3 compares information about maternal health in the towns of the Greater Nashua Public Health Region. The percentages of women who received prenatal care in the first trimester ranged from 65% in the town of Wilton to 80% in Merrimack. During the 2008-2013 period, Merrimack was the only town in the region to achieve the HP2020 goal to increase the percentage of women who receive prenatal care in the first trimester to 77.9%. The percentage of vaginal births was highest among residents in the Town of Lyndeborough, where 81.8% of babies were delivered vaginally. In looking at the 2008-2013 percentages of women who abstained from smoking during pregnancy, the eight towns of Amherst, Brookline, Hollis, Hudson, Litchfield, Mason, Merrimack, and Pelham all reported that 90% or more of pregnant mothers did not smoke during pregnancy.[21] The HP2020 target goal for percentage of women who do not smoke while pregnant is 98.6%.

Figure 3.4 Maternal Indicators by Town, 2008-2013



*Source: NH DHHS; *=numbers too small to release*

Breastfeeding

Breastfed babies gain a healthy start because breast milk provides them with the immunities and balanced nutrition they need to avoid illnesses and grow stronger. In addition, there are emotional and financial benefits for breastfeeding women and babies due to maternal/child bonding opportunities and the free breast milk that new mothers naturally produce. The NH Breastfeeding Task Force, an organization that is committed to increasing the prevalence and duration of breastfeeding in the State of NH, has organized specific strategies to support their mission and to help NH achieve the HP2020 goals around breastfeeding. There are a number of government agencies that provide education and information around the benefits of breastfeeding, including the NH Department of Health and Human Services. The NH DHHS Obesity Prevention Program issued a brief in 2011, entitled "Breastfeeding: New Hampshire 2011" which includes statewide statistics on breastfeeding as well as information collected from hospitals around the use of lactation support materials and overall hospital practices and policies that support breastfeeding.

The Healthy People 2020 goal to increase the percentage of infants who are ever breastfed to 81.9% is close to being achieved in Nashua, where data from 2008-2013 indicates 81.7% of infants are being breastfed at discharge. During the same period in the Greater Nashua Public Health Region, 84.5% of infants were being breastfed upon discharge and in the State of NH the rate is 82.1%, both rates exceeding the HP2020 goal. Social disparities exist however, and when considering data from the 2013 Nashua Women Infants and Children (WIC) program for low income families, the differences are clear. During 2013, 66.8% of mothers who participated in Nashua WIC reported that their babies were ever breastfed. The duration of breastfeeding by mothers enrolled in the Nashua WIC program during 2013 is evidenced in the reported rates of 22.3% of babies being breastfed for a total of 6 months. The WIC program has many nutrition resources for new mothers and specifically encourages

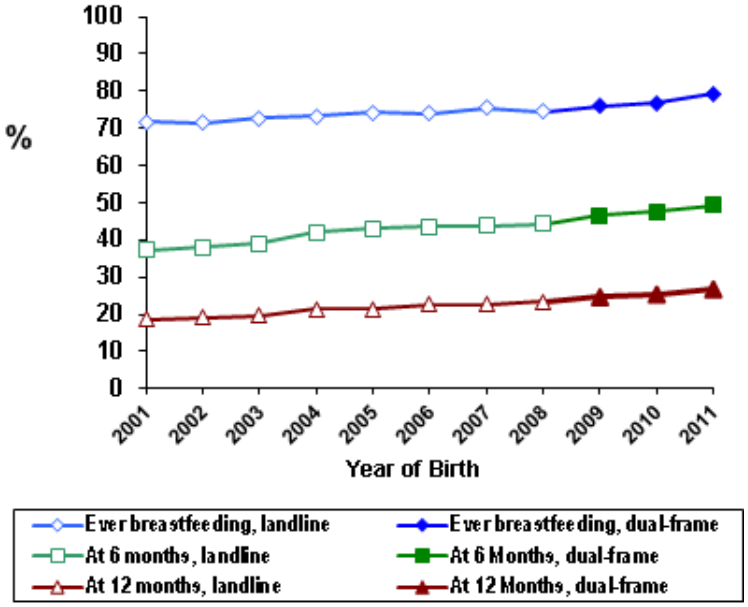
Community Spotlight on Milford: SHARE Outreach

SHARE Outreach was founded as a faith-based program in 1979 by Milford's St. Patrick Parish Council to serve individuals throughout the area who are in need. What started in a small closet in the basement of the church, has developed into a well-respected, vibrant and financially strong community resource and a safety net for those who are economically disadvantaged. The SHARE Center, is open weekdays and evenings and weekends for emergencies. It has become an important point of information, service and referral for many in the Souhegan Valley. The agency's personalized style of food pantry allows families to shop for groceries, one at a time, while volunteers help them make choices that encourage healthy eating and food preparation. SHARE's emergency financial assistance program focuses on help with the basic necessities including housing, fuel, utilities, and medical.

WIC participants to breastfeed their infants. During 2013, 21.5% of mothers in the Nashua WIC program breastfed exclusively and did not use infant formula for 3 months. The HP2020 target for breastfeeding exclusively for three months is 46.2%, so the Nashua WIC participants are below the Healthy People goal. During the same period, 10.2% of breastfeeding mothers in the WIC program continued breastfeeding exclusively for six months. This rate also falls short of the HP2020 goal to increase the proportion of infants who are breastfed exclusively through six months of age to 25.5%.

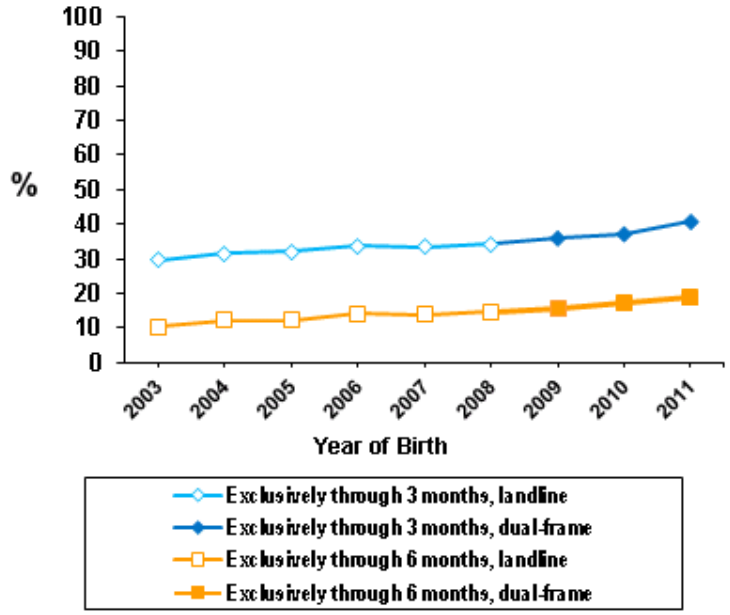
Figure 3.5 shows national information for mothers, gathered via landline and cell phone surveys of mothers, and compares the percentages of those who ever breastfed their children to those who breastfed when their babies were 6 months of age and those who breastfed when their babies reached their first birthday. In every year since 2001, more than 70% of babies in the United States were ever breastfed. When comparing the 2001 percentage of 37.3% of babies who were breastfed at six months of age to the percentage of 49.4% of babies that age who were being breastfed in 2011, an increase is evident. A lower percentage of babies continue with breastfeeding at 12 months of age; however there is also an increase between the 2001 rate of 18.5 % and the 2011 rate of 26.7%. Figure 3.6 looks at the annual percentage of babies that were breastfed exclusively until three months of age as well as the percentage of babies that were breastfed exclusively through six months of age. Again, there has been improvement over eight years for which information was collected, with a 2003 percentage of 29.6% of babies breastfed exclusively at 3 months old increasing to a rate of 40.7% in 2011. Similarly, the 2003 data indicates 10.3% of babies born that year were breastfed exclusively at 6 months of age, but the percentage of babies this age breastfeeding exclusively grew to 18.8% in 2011. The U.S. rate for babies 6 months of age breastfeeding exclusively must continue to improve to meet the goal of 25.5% by the year 2020.[19]

Figure 3.5: Percentages of U.S. children ever breastfeeding, by year



Source: CDC

Figure 3.6: Percentage of U.S. children exclusively breastfed, by year



Newborn Screening

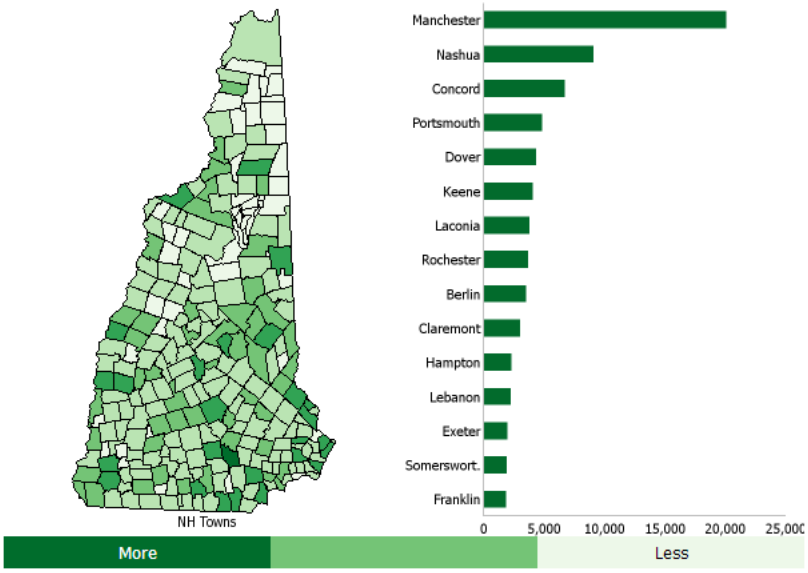
One of the most critical first steps for nearly all babies born in the United States today is a standard hospital procedure referred to as newborn screening. Hearing and pulse are tested along with a blood test, usually between 24 and 48 hours after birth. Commonly known as the "heel prick test," this screening is a blood test using blood from the baby's heel that is tested for a wide range of metabolic and genetic conditions that might exist but may not be visibly apparent in the newborn. Advanced science combined with a national infrastructure of public health laboratories ensures newborn blood samples are processed accurately and promptly and that critical information is relayed to families of newborns. When seriously harmful and potentially fatal conditions can be diagnosed at this early point in life, treatment can be initiated quickly to assist infants in achieving healthier outcomes. For example, conditions such as sickle cell anemia, PKU, cystic fibrosis, or congenital hypothyroidism are serious conditions that can be diagnosed through newborn screening. National recommendations for the most critical conditions that should be part of a screening are included in the "Recommended Uniform Screening Panel" (RUSP). Policies regarding use of the complete RUSP vary by state and are not enforced by law. New Hampshire is not one of the states that mandates use of the RUSP, however there is a state statute (RSA 132:10a) requiring screenings that currently includes 33 screening tests. In NH, between 2006 and 2010, the incidence of spina bifida, which is one of the conditions for which screenings are performed, was 1.76 (CI.91-3.07) per 100,000 live births.[16]

Lead Poisoning

Lead is a poisonous metal that can cause serious and potentially fatal conditions when introduced to the human body by ingestion, inhalation, or skin absorption. It can be absorbed in small amounts over time without producing obvious symptoms; however, the poison accumulates in the body and can have devastating consequences. Resulting problems range from stomach, head and joint pain to much more serious and irreversible neurological damage, behavioral issues, and mental deficiencies. Children under the age of six years are the most vulnerable population for lead poisoning potential because their young bodies can absorb lead easily and their typical oral behavior often includes putting fingers and objects, either of which could carry lead dust or particles, into their mouths.

A common material where lead is present is in paint that was manufactured before 1978, the year it was officially banned from all U.S. paint production. Lead paint is still commonly used is other countries, however, and imported toys or other painted products still present a potential risk for lead poisoning. In the United States, the more typical source for contact with lead paint is in houses that were built prior to 1979 and, in particular, those that were built before 1950 when it is almost certain that lead paint was used. Figure 3.7 shows the number of NH homes built before 1950 by census tract and indicates Nashua has close to 10,000 pre-1950 units of housing. In New Hampshire, only the City of Manchester has a greater number of homes built before 1950. In Table 3.6, the percentage of available housing according to the year in which it was built is shown for each town in the Greater Nashua region. The four towns of Lyndeborough, Mont Vernon, Nashua, and Wilton all have 20% or more of housing stock that was built prior to 1950. According to the NH Healthy Homes and Lead Poisoning Prevention Program, cities and towns with 27% or more pre-1950 stock are considered high risk for lead poisoning, and children living in any pre-1979 home are considered at risk.

Figure 3.7 **Housing Age by Town; Number of Homes Built Before 1950**



Source: NH DHHS; WISDOM

Table 3.6 Year Housing Built by Town, 2008-2012

	1939 or earlier	1940 to 1949	1950 to 1959	1960-1969	1970-1979
Amherst	12.1%	1.7%	4.0%	17.7%	22.4%
Brookline	14.2%	1.8%	3.6%	5.4%	10.3%
Hollis	9.1%	5.0%	6.4%	7.8%	16.6%
Hudson	4.2%	1.2%	7.1%	11.9%	20.4%
Litchfield	1.2%	0.0%	0.9%	6.0%	25.8%
Lyndeborough	26.8%	.9%	2.6%	16.2%	16.3%
Mason	19.0%	.5%	5.1%	6.7%	13.9%
Merrimack	3.8%	.4%	4.9%	13.2%	24.8%
Milford	16.2%	3.6%	4.6%	10.0%	14.1%
Mont Vernon	22.2%	1.2%	3.6%	5.4%	14.7%
Nashua	20.2%	4.2%	8.3%	12.5%	20.7%
Pelham	6.8%	2.2%	8.3%	13.2%	24.6%
Wilton	39.3%	3.0%	6.7%	2.5%	%11.8

Source: American Community Survey, 2008-2012

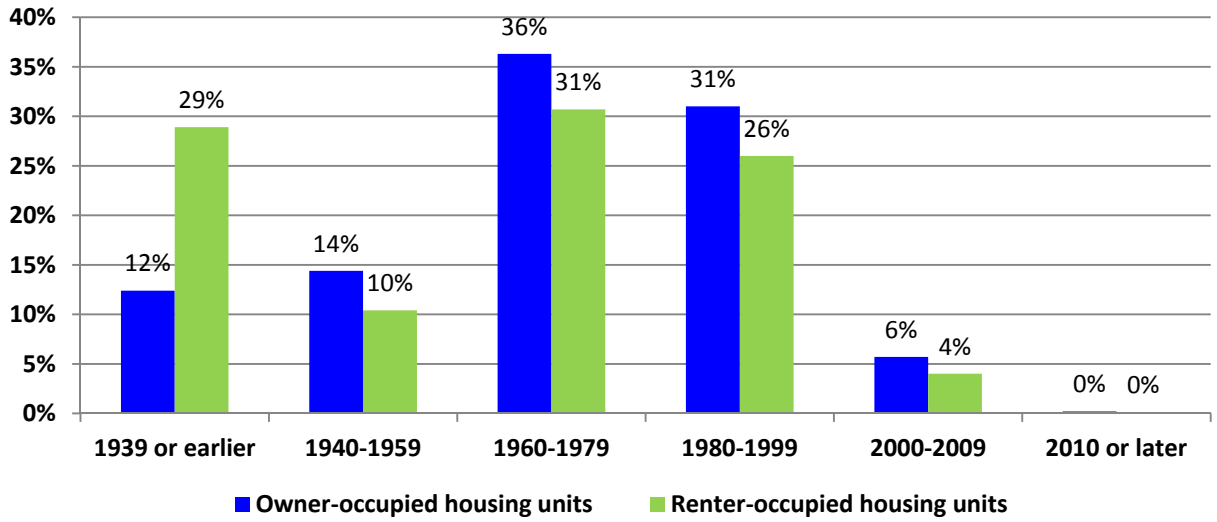
Poverty

Poverty is a factor in most discussions about equity, and as one of the social determinants of health it has a clear connection to individual and community health status. According to 2008-2012 data collected by the American Community Survey, over 20% of U.S. children age 18 and under live below the poverty level. While New Hampshire continues to be one of the higher rated states in the country to raise a child, the state has over 30,000 children under the age of 18, approximately 10.9% of all NH children, living below the poverty level. While the NH percentage of 10.9% of children in poverty compares favorably to the total U.S. percentage of 20.8%, the NH numbers indicate that poverty is an issue in the state. The percentage of children living below the poverty level in Nashua is 13.5%, somewhat higher than the state numbers but still below the national estimates.[25]

One area where the restrictions of poverty are easy to see is in housing accommodations. Low income families, which include many single female head of household family units, struggle to obtain adequate housing. Families with limited resources cannot afford to pay the high costs associated with high end housing and may not be able to sustain permanent housing once they obtain it. Low income families often are renters rather than homeowners. Figure 3.5 below shows the 2008-2012 information for Nashua of the percentage of owner occupied housing units versus those that are renter occupied, and also indicates how those percentages break out according to the year the housing was built. Of the Nashua homes occupied by individuals or families who rent rather than own their homes, 70% of the

units were built prior to 1979. Within the owner occupied housing in Nashua, 52% of the properties were built prior to 1979.[25] A population, such as Nashua renters, that has a higher percentage of people living in pre-1979 housing is a population that has an increased potential for exposure to lead.

Figure 3.8 Year Housing Built by Owner or Renter Status, Nashua, 2008-2012



Source: American Community Survey, 2008-2012

The lead paint that still exists in older homes where lead paint was common, or even in some newer homes where older paint was used, is of particular concern for young children who live in those homes. A lead screening test measures the amount of lead in a child's blood and is a simple intervention that can quickly confirm elevated lead levels. A venous blood lead level that meets or exceeds 10 micrograms per deciliter of blood is considered an elevated result for any child six years of age or younger. In the State of NH, over 13,000 children under the age of six were screened in 2012, indicating a participation rate of 15.9%. For the same year in Nashua, there were 1199 screenings reported, indicating an 18.4% participation rate, and 6 instances of elevated blood lead levels in children under the age of 6 were confirmed. Nashua has somewhat improved its overall screening rate from 2008, when 1065 children were screened, a participation rate of 15.4%.[26]

Image: This photograph reveals lead paint scrapings on a floor.
Source: CDC/ Aaron L. Sussell

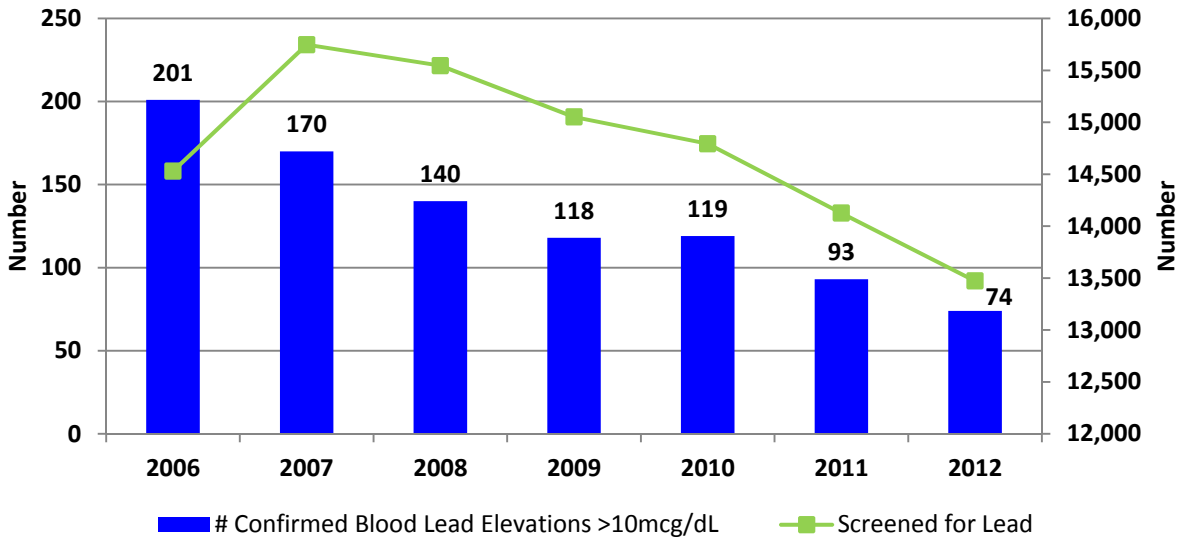
The Healthy People 2020 goal to eliminate elevated blood levels in children supports the idea that there is no "safe" lead level. Communities with universal screening rates have a better opportunity to determine if elevated lead levels are present in the children within their community. A discussion of potential exposure issues is commonly part of a routine pediatric visit, and parent responses regarding the child's environment can prompt a lead screening test. In NH, according to the Foundation for Health Communities preventative screening recommendations, screenings at age one and two are recommended for children based on their individual or community risk. In Figure 3.8, NH lead screening numbers for children age birth to 17 months is compared to the number of newly confirmed lead poisoning cases. The number of children in the age group who have been screened for lead in NH has declined since 2007. The number of confirmed lead cases has also declined, from a high of 201 confirmed elevations documented in 2007 to a low of 74 new cases in 2012. Looking more closely at Nashua screening rates for age one and two children alone, the screening rates are fairly consistent between 2009 and 2012, with over half of the one year olds and approximately one third of the two year olds being screened. Figure 3.9 shows the percentage of children screened for lead at the age of one compared to the percentage screened at the age of two.[26] Uniform screening policies that include lead testing would ensure that all children with potential exposure to lead participate in the blood test at both age one and two so that the medical provider can identify elevated blood lead levels.

Community Spotlight on Hudson: Family Promise of Greater Nashua

The mission of Family Promise of Greater Nashua, formerly known as Anne-Marie House, is to support the needs of families experiencing homelessness as they work to achieve sustainable income, housing and transportation. Initiated in 2005, Family Promise provides safe and secure transitional housing, wholesome meals, continuing education and support services such as parenting and financial literacy programs for its families. During periods of homelessness, families usually face the obstacle of being split up among available spots at homeless shelters. However, Family Promise views keeping the family intact as critically important in order to ensure that families achieve a successful and sustainable lifestyle. Family Promise operates out of a 26 bedroom facility with a large kitchen, library and other amenities. It has a network of over 1,000 trained volunteers, and has aided nearly 90% of its graduating families in achieving sustainable housing, income and transportation.

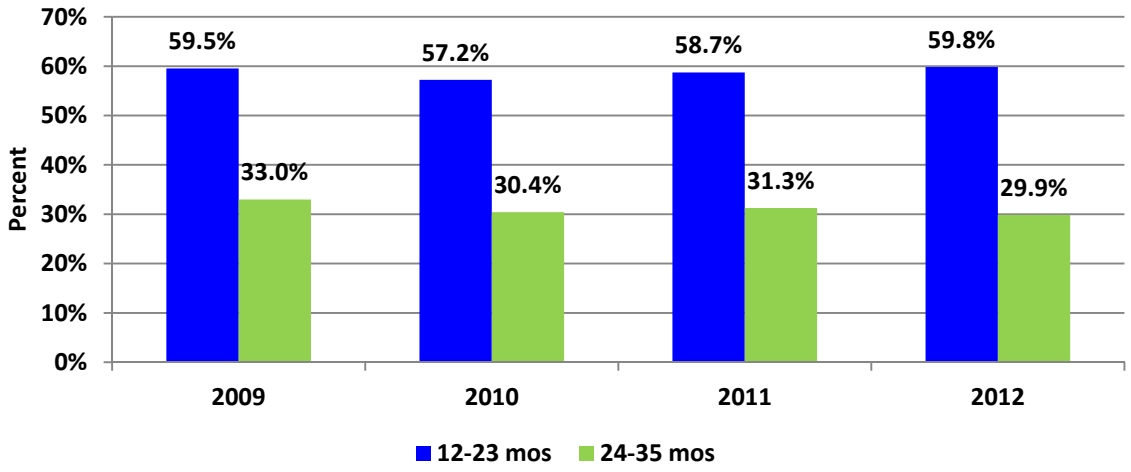
Family Promise of Greater Nashua

Figure 3.9 Number of Newly Confirmed Elevated Blood Lead Levels and Number Screened for Lead for Children Ages 0-17 Months in New Hampshire



Source: NH DHHS; Childhood Lead Poisoning Surveillance Data

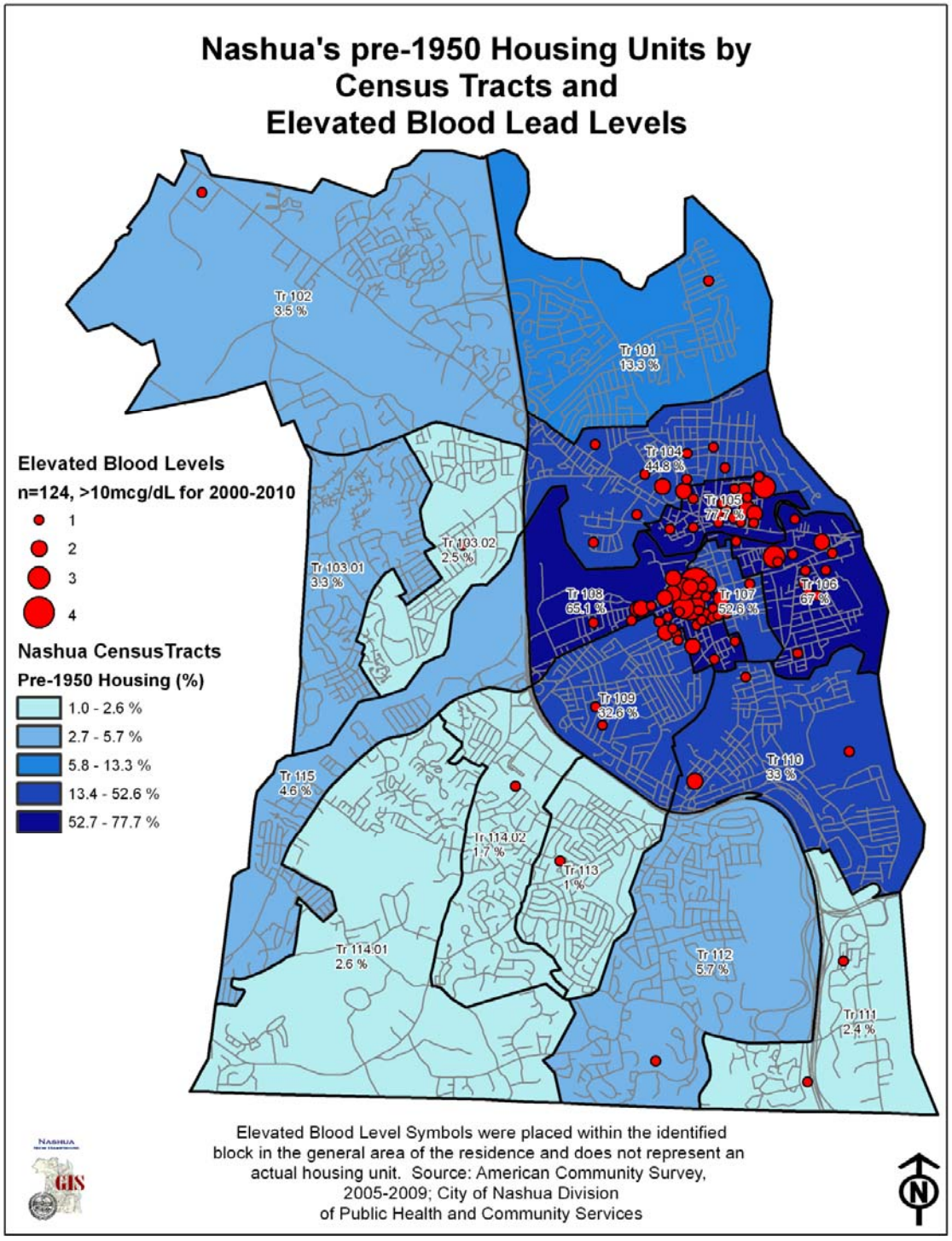
Figure 3.10 Screening Rates for Lead in Nashua, 2009-2012



Source: NH DHHS; Childhood Lead Poisoning Surveillance Data

More in depth detail relative to housing in the City of Nashua reveals there are areas of the city where older homes are more prevalent; an indication that the existence of lead paint is more likely. In figure 3.9, a map of Nashua census tracts and the incidence of elevated blood lead levels by census tract is displayed. The area where pre-1950 housing is highest, accounting for between 52.7% and 77.7% of all housing in the census tract, is also the area where the largest incidence of documented elevated blood lead levels exists.[27]

Figure 3.11 **Pre-1950 Housing Units and Lead Poisoning by Census Tract**



Source: U.S. Census Bureau, 2005-2009 American Community Survey; City of Nashua, Division of Public Health & Community Services

Autism

Children with Autism Spectrum Disorder (ASD) present with an array of atypical social and/or individual behaviors and symptoms that are typically recognized in the first two years of life. The Autism and Developmental Disabilities Monitoring Network (ADDM) is a group of programs funded by CDC to determine the number of people with autism spectrum disorders (ASDs) in the United States. The Network's goal is to provide comparable, population-based estimates of the prevalence rates of ASD in different sites over time.[17] Based on data collected from health and special education records of 8 year olds living in eleven areas of the United States during 2010, the prevalence of autism is about 1 in every 68 children. It is more common in boys, estimated by the same data source to occur in one of every 42 males compared to one of every 189 females.[28]

New Hampshire is the second state in the nation to establish a legislatively mandated, state-wide registry for ASD. The NH Registry of Autism Spectrum Disorders counts the number of new cases and tracks the average age at which a definitive diagnosis is made. Pediatricians, family practice physicians, psychiatrists, neurologists, licensed clinical psychologists and social workers that are qualified to make a diagnosis of ASD are required to report diagnosis to the NH Registry. Individuals diagnosed by non-NH providers may not be reflected. While data collected through the NH Registry will contribute to the understanding of the prevalence of ASD in NH, it is not affiliated with the CDC or ADDM system. The primary focus of the NH Registry is to assess whether early identification, screening and diagnosis are taking place in NH and to understand where there may be gaps in the system for screening and diagnosis. Benefits to early and proper diagnosis include providing families with time and support to learn about their child's disorder and to connect with appropriate treatment strategies.

According to the NH DHHS, during fiscal year 2012 (7/1/2011-6/30/12) there were 157 NH residents diagnosed with ASD and added to the online registry for ASD. The DHHS report for this period indicates that 85% of the cases were among White Non-Hispanic children and 38% of the new diagnoses were made for children less than three years of age. [18] Healthy People 2020 has a goal of 42.9% of children with an Autism Spectrum Disorder receiving a first evaluation by age three, so the State of NH is closing in on the target.

Community Initiatives

Today's parents face the traditional challenges of raising a family as well as some unique issues associated with the changing social and economic climate in the United States. Single parent households, insecure employment and personal finances, downsizing of support programs, and changes in the systems of care that guide our health are concerns for families who struggle to make healthy choices for their families. In New Hampshire, the NH Child Advocacy Network (NH CAN) works with state lawmakers to prioritize policies that improve the lives of all NH children. Among other priorities, the NH CAN 2014 health and wellness advocacy focus areas include expanding the dental workforce, developing a model for funding of family-focused, community-based prevention services, and modernizing NH's juvenile justice system. There are a number of family and community support programs in NH that promote positive health and wellbeing for mothers and children. Community

health initiatives for women and children are provided through the State of New Hampshire Department of Health and Human Services Maternal and Child Health Section. There are non-profit groups, such as the New Hampshire Breastfeeding Taskforce, that provide support and education for moms and families. In addition, there are programs that support injury prevention and access to services, and there are organizations with specific efforts to promote preventative screenings, breastfeeding and nutrition, family planning and healthy child care. New Hampshire is also home of the NH Children's Trust, a child abuse prevention agency that works with direct service programs to improve systems, environments, and public policies that support healthy outcomes for children. They support evidence based prevention programs including community education, home visits and Family Resource Centers as well as national programming models such as Period of Purple Crying, and Strengthening Families, both initiatives that provide training and support for individuals navigating the challenges of parenting. Through the combined resources and commitment of federal and state offices, local non-profit organizations and businesses, school and health professionals, and public health policy makers, the mothers and children in the Greater Nashua Public Health Region have support and opportunities to reach their fullest potential for health and wellbeing.

Source: Fallon Photography

[1]United States Department of Health and Human Services, Centers for Disease Control and Prevention. *Healthy People 2020*. Washington, DC. Retrieved August 14, 2014 from http://www.healthypeople.gov/2020/LHI.

[2]Singh GK. (2010). Child Mortality in the United States, 1935-2007: *Large Racial and Socioeconomic Disparities Have Persisted Over Time*. Retrieved August 20 2014 from http://www.hrsa.gov/healthit/images/mchb_child_mortality_pub.pdf.

[3]Singh GK. (1996). *US Childhood Mortality, 1950 through1993: Trends and Socioeconomic Differentials*. Retrieved August 20 2014 from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1380550/pdf/amjph00515-0043.pdf

[4]New Hampshire Department of Health and Human Services (NH DHHS). (2013). *Continuation of Medical Assistance Following Pregnancy (MAM).*Retrieved on August 12, 2014 from http://www.dhhs.nh.gov/MAM_HTM/225_01_continuation_of_medical_assistance_following_pregnancy_mam_.htm

[5]March of Dimes. *Working Together for Stronger, Healthier Babies.* Retrieve August 16, 2014 from http://www.marchofdimes.com/pregnancy/overweight-and-obesity-during-pregnancy.aspx

[6]United States Department of Health and Human Services. (2014). *Leading Health Indicators.* Retrieved from http://www.healthypeople.gov/2020/Leading-Health-Indicators.

[7]NH DHHS. (2014). *NH Health Wisdom*. Retrieved from http://wisdom.dhhs.nh.gov/wisdom/.

[8]NH DHHS. (2013). *DHHS Releases Findings: Prescription Drug Abuse Data.* Retrieved on August 12, 2014 from http://www.dhhs.nh.gov/media/pr/2013/10-oct/10252013rxdrugdata.htm.

[9]NH DHHS. (2013). *Neonatal Abstinence Syndrome*. Retrieved from http://www.dhhs.nh.gov/dphs/bchs/mch/documents/nas-data-brief.pdf.

[10]Newman, R. (2013). *Open Letter to the Media and Policy Makers Regarding Alarmist and Inaccurate Reporting on Prescription Opiate Use by Pregnant Women, March 11, 2013*. Retrieved from https://opqc.net/sites/bmidrupalpopqc.chmcres.cchmc.org/files/Neo/NAS/Resources/NAS%20resource%20letter_3.11.13.pdf.

[11]U.S. National Library of Medicine, MedlinePlus. (2014). *Adolescent Pregnancy*. Retrieved from http://www.nlm.nih.gov/medlineplus/ency/article/001516.htm.

[12]U.S. Department of Health & Human Services (USDHHS). (2014). *Teen Pregnancy and Childbearing*. Retrieved from http://www.hhs.gov/ash/oah/adolescent-health-topics/reproductive-health/teen-pregnancy.

[13]USDHHS. (2014). *Maternal, Infant, and Child Health*. Retrieved from http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives.

[14]USDHHS. (2014). *Maternal, Infant, and Child Health*. Retrieved from http://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives.

[15]NH DHHS. (2013). *New Hampshire Public Health Issue Brief: Sleep-Related Infant Deaths, 2011-2012*. Retrieved from http://www.dhhs.nh.gov/dphs/bchs/mch/documents/nh-suids-brief-2011-2012.pdf.

[16] NH DHHS. (2014). *NH Health Wisdom*. Retrieved from http://wisdom.dhhs.nh.gov/wisdom/.

[17]USDHHS. (2010). *Autism and Developmental Disabilities Monitoring Network*. Retrieved on August 19, 2014 from http://healthypeople.gov/2020/Data/datasource.aspx?id=19.

[18]NH DHHS. (2012). *NH Registry for Autism Spectrum Disorders: Making Early Identification Count.* Retrieved on August 19, 2014 from http://www.dhhs.nh.gov/dcbcs/bds/documents/asddatasheet20112012.pdf

[19]Centers for Disease Control. (CDC). (2014). *Breastfeeding Among U.S. Children Born 2001–2011, CDC National Immunization Survey.* Retrieved August 12, 2014 from http://www.cdc.gov/breastfeeding/data/nis_data/index.htm

[20] Centers for Disease Control. (CDC). (2014). *Breastfeeding Among U.S. Children Born 2001–2011, CDC National Immunization Survey.* Retrieved August 12, 2014 from http://www.cdc.gov/breastfeeding/data/nis_data/index.htm

[21]NH DHHS, Office Health Statistics and Data Management. *Vital Records*. Concord, New Hampshire: NH DHHS, 2008-2013).

[22]Guttmacher Institute. (2014). *U.S. Teenage Pregnancies, Births and Abortions, 2010: National and State Trends by Age, Race and Ethnicity.* Retrieved on August 12 from http://www.guttmacher.org/pubs/win/contraceptive-needs-2012.pdf

[23]NH DHHS. (2013). *Neonatal Abstinence Syndrome*. Retrieved from http://www.dhhs.nh.gov/dphs/bchs/mch/documents/nas-data-brief.pdf.

[24]City of Nashua, Community Health Assessment Data Subcommittee, personal communications.

[25]US Census Bureau. (2008-2012). *American Community Survey 5-Year Estimates*. Retrieved from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

[26]NH DHHS. (2013). 2012 Childhood Blood Lead Surveillance Data. Retrieved from http://www.dhhs.nh.gov/dphs/bchs/clpp/documents/2012childlead.pdf.

[27]City of Nashua, Division of Public Health and Community Services. (2000-2010). *Elevated Blood Lead Level Database.* Nashua, New Hampshire: City of Nashua, 2000-2010.

[28]National Institute of Mental Health. (2014). *Autism Spectrum Disorder (ASD*). Retrieved from http://www.nimh.nih.gov/statistics/1AUT_CHILD.shtml.

"Medical science has proven time and again that when the resources are provided, great progress in the treatment, cure, and prevention of disease can occur."

- *Michael J. Fox*

Cancer & Preventative Screenings

CONTENTS

While there has been increased research investment and treatment advances over the past decade, cancer remains a serious health issue in the United States. According to Healthy People 2020, "Among people who develop cancer, more than half will be alive in 5 years. Yet, cancer remains a leading cause of death in the United States, second only to heart disease." The Healthy People 2020 goals include reducing death rates from cancer and increasing the health and wellbeing of cancer survivors.[1] In particular, the goals include increasing cancer awareness, increasing the number of people participating in evidence-based cancer screenings, and promoting healthy lifestyle choices that prevent cancer incidence. Specific cancers at the forefront of prevention initiatives include breast, cervical, and colorectal cancer. According to American Cancer Society, 1 in 8 women are at risk for developing breast cancer in their lifetime, and 1 in 36 women are at risk of dying from the disease. In the case of cervical cancer, 1 in 152 women are at risk for developing cervical cancer and 1 in 435 women are at risk for dying. In men, the instance of developing colorectal cancer is 1 in every 20 men, with death rates of 1 in 48. Female risk for colorectal cancer is only slightly less, reported at 1 in every 22 women at risk for developing the disease and 1 in 53 at risk of dying from colorectal cancer. [2]

Cancer Mortality

With its wide range of types and contributing causes, cancer is often listed among the leading causes of death in national studies. In New Hampshire, cancer is the leading cause of death and most deaths from cancer are found in individuals over the age of 55. Between 2008 and 2012 there were 12,778 New Hampshire residents who died from cancer, with 1,685 cancer deaths in the Greater Nashua Public Health Region (GNPHR). In 2012, there was no statistically significant difference when comparing the cancer mortality rates in NH, the GNPHR, or Nashua. Considering all cancer deaths within these three geographies, the mortality rates were between 153.9 and 171.7 per 100,000 persons.[3] Compared to the Healthy People 2020 proposed cancer mortality rate of 161.4, neither the GNPHR nor NH is meeting the goal. Table 4.1 indicates the local, regional, and state mortality rates for cancer and the HP2020 target goal.[1,3]

Table 4.1 Cancer Mortality Rates by Geography, 2012

	Nashua	GNPHR	NH	HP2020 Goal
Cancer Mortality (per 100,000)	153.9 (CI 128.1-179.8)	168.7 (CI 150-187.3)	171.7 (CI 165-178.3)	161.4

Source: NH DHHS

In looking specifically at breast cancer, in 2012 the breast cancer mortality rate in Nashua was 15.3 deaths (CI 6.6-30.1) per 100,000 persons. This compares with the state rate of 19.3 (CI 16.3-22.4) per 100,000 and the regional rate of 22.6 (CI 14.5-33.6) per 100,000.[3] Again, the differences between geographies are not statistically significant. It is worth noting, however, that the Nashua rate of 15.3 is lower than the HP2020 goal of 20.7 per 100,000.[1] When Nashua data is combined with breast cancer

mortality numbers from the region, the breast cancer mortality rate increases to 22.6 (CI 14.5-33.6) per 100,000, which is higher than the HP2020 goal. The NH breast cancer mortality rate of 19.3(CI 16.3-22.4) per 100,000 is below the HP2020 goal.[3,1] Table 4.2 shows the breast cancer mortality rates by geography as well as the HP2020 national goal.[3 1]

Table 4.2 Breast Cancer Mortality by Geography, 2012

	Nashua	GNPHR	NH	HP2020 Goal
Breast Cancer Mortality Rate (per 100,000)	15.3 (CI 6.6-30.1)	22.6 (CI 14.5-33.6)	19.3 (CI 16.3-22.4)	20.7
Source: NH DHHS				

The mortality rates for colorectal, prostate, lung, and skin cancer in Nashua and the GNPHR are already lower than the HP2020 target goals. In looking at NH as a whole, mortality rates for colorectal and prostate cancer are also favorable when compared to the HP2020 goal; however the rate of death from lung cancer exceeds the HP2020 goal by 2.8 deaths per 100,000 and the melanoma mortality rate also slightly exceeds the HP2020 goal. The NH State Health Improvement Plan (SHIP) has identified these two cancer types as priority areas for improvement and has established specific goals for the state to reduce mortality rates for lung and skin cancers by the year 2020. In the case of lung cancer, the SHIP aims for improvement to a rate of 47.8 per 100,000 by 2015 and to 45.5 per 100,000 by 2020, the same rate as the national goal. The NH melanoma mortality rate of 2.8 per 100,000, already a decrease from a higher state rate of 3.1 in 2007, has a SHIP goal of 2.5 per 100,000 in 2020, an improvement which will still not quite meet the national HP2020 goal. Table 4.3 below shows cancer mortality rates as well as the HP2020 and available NH SHIP goals.[1,3,4]

Table 4.3 Mortality Rates for Colorectal, Prostate, Lung, and Skin Cancer, 2012

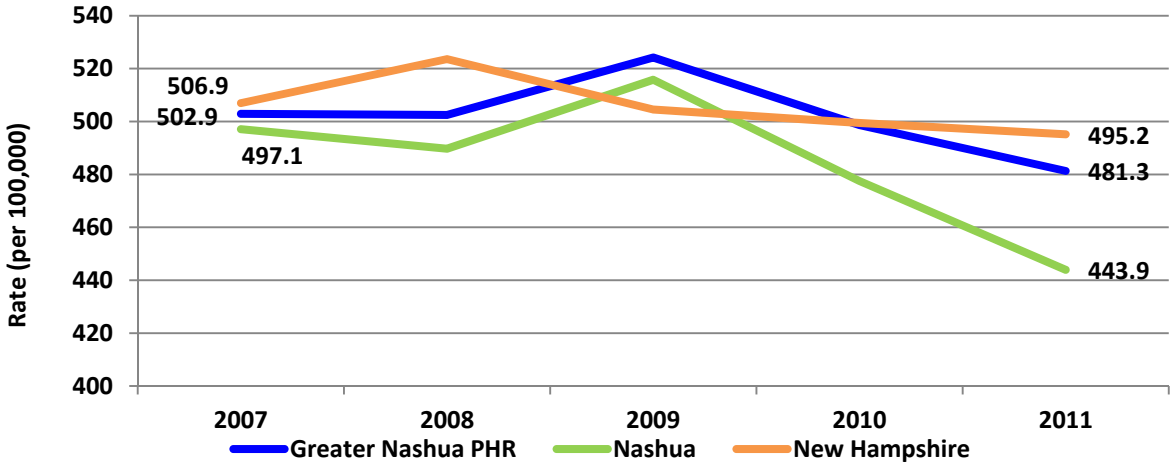
	Nashua	GNPHR	NH	HP2020 Goal	SHIP
Colorectal Cancer Mortality Rate (per 100,000) NOTE: Calculated using 2008-2012	14.7 (CI 11.4-18.7)	14.8 (CI 12.3-17.3)	14.1 (CI 13.3-15.0)	20.7	N/A
Prostate Cancer Mortality Rate, 2012 (per 100,000)	19.5 (CI 13.3-22.5)	18.8 (CI 14.6-24.0)	20.9 (CI 19.2-22.6)	21.8	N/A
Lung Cancer Mortality Rate, 2012 (per 100,000)	44.2 (CI 31.4-60.4)	42.1 (CI 33.4-52.3)	48.3 (CI 44.8-51.9)	45.5	45.5 (2020)
Melanoma Mortality Rate (per 100,000) NOTE: Calculated using 2008-2012	*	2.2 (CI 1.4-3.3)	2.8 (CI 2.4-3.2)	2.4	2.5 (2020)
*Source: NH DHHS; * = numbers too small to release*					

Mortality rates from many types of cancer, including breast, bladder, colorectal, lung and bronchus, and prostate cancer are higher among ethnic minorities and among individuals with lower socioeconomic status. The CDC's Division of Cancer Prevention and Control (DCPC) monitors trends in cancer incidence and mortality, and identifies which populations are disproportionately affected by the disease. The CDC reports that people from lower socioeconomic conditions are less likely to get cancer screening tests. When individuals who are diagnosed as having cancer find out about it when the disease has already reached an advanced stage, positive outcomes are less likely. Race and ethnicity are also determinants that impact cancer death rates. In gathering mortality information, the CDC reports that, in 2010, death rates (per 100,000) for men from all cancers combined were highest among black men (264.4), followed by white (207.1), American Indian/Alaska Native (149.8), Hispanic (148.6), and Asian/Pacific Islander (129.7) men. Rates for women dying from all cancer types are similar, with the highest among black women (166.3), followed by white (145.9), American Indian/Alaska Native (101.5), Hispanic (98.6), and Asian/Pacific Islander (92.4) women.[5]

Cancer Incidence

Once cancer cells have spread beyond the tissue in which they initially developed and are growing into surrounding healthy tissues, the cancer is considered invasive. In NH, the incidence of invasive cancers for all age groups did not change in a statistically significant way during the 2007 to 2011 period. The incidence rate for invasive cancer among all ages in Nashua in 2011 was 443.9 (CI 401.3-486.5) per 100,000, a decrease from the 2007 rate of 497.1 (CI 451.2-543.0) per 100,000. Regionally, the trend is similar, and has decreased from a rate of 502.9 (CI 471.5-534.3) per 100,000 in 2007 to a rate of 481.3 (CI 451.5-511.1) per 100,000 in 2011. Considering data from throughout NH, the incidence of invasive cancers for all ages was 506.9 (CI 495.3-518.6) per 100,000 in 2007 and decreased to 495.2 (CI 483.9-506.4) per 100,000 in 2011.[6] Figure 4.1 shows these incidence rates by geography over the 2007-2011 period.[6]

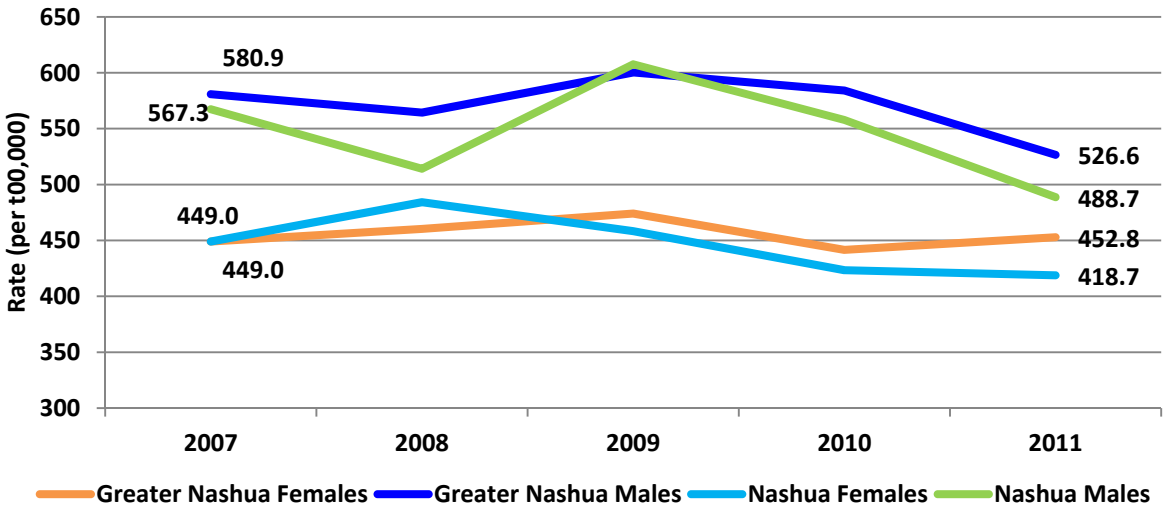
Figure 4.1 Incidence of Invasive Cancer for All Ages, 2007-2011



Source: NH DHHS

The rates of invasive cancer incidence in the GNPHR and Nashua trend similarly when considering all ages and gender; however during the 2007-2011 period there was a greater incidence of invasive cancer among males than females. In 2011, the incidence rate for all cancers in men were 526.6 (CI 479.3-573.8) per 100,000 for the region and 488.7 (CI 421.1-556.2) per 100,000 for Nashua males. Compared to female incidence rates for all cancers in the same year, which were 452.8 (CI 413.3-492.3) per 100,000 in the region and 418.7 (CI 361.9-475.5) per 100,000 in Nashua. The incidence rate among men was consistently higher between 2007 and 2011 (Figure 4.2).[6]

Figure 4.2 Cancer Incidence by Gender, 2007-2011



Source: NH DHHS

The 2011 incidence rates for specific cancers are listed in Table 4.4. Geographically, Nashua exceeds the Healthy People 2020 goal to decrease the incidence rate of colorectal cancer to 38.6 per 100,000, but the GNPHR and NH state rates do not.[1,6] Incidence rates for prostate, lung, breast cancer and melanoma are lower in Nashua than they are in the region. Conversely, Nashua's rates for both cervical cancer incidence, 8.2 (CI 4.9-12.7) per 100,000 and oral/pharynx cancer incidence, 13.3 (CI 10.2-17.) per 100,000, are higher than the regional or state rates.[6]

For information on free or low cost cancer screenings, visit the New Hampshire Colorectal Cancer Screening Program
http://cancer.dartmouth.edu/gi_pancreatic/nh_colorectal_screening.html

and the Let No Women Be Overlooked
http://www.dhhs.nh.gov/dphs/cdpc/bccp/index.htm.

Table 4.4 Cancer Incidence by Geography, 2011

	Nashua	GNPHR	NH	HP2020 Goal
Colorectal Cancer Incidence Rate, 2011 (per 100,000)	31.5 (CI 21.3-45.0)	40.9 (CI 32.5-50.9)	40.6 (CI 37.4-43.9)	38.6
Prostate Cancer Incidence Rate, 2011 (per 100,000)	122.4 (CI 92.9-158.2)	132.3 (CI 110.4-154.2)	147.2 (CI 138.5-156.0)	N/A
Lung Cancer Incidence Rate, 2011 (per 100,000)	43.3 (CI 30.9-58.9)	54.9 (CI 44.4-65.5)	50.6 (CI 47.0-54.2)	N/A
Breast Cancer Incidence Rate, 2011 (per 100,000)	138.3 (CI 107.8-174.8)	142.7 (CI 120.7-164.6)	142.4 (CI 134.0-150.8)	N/A
Cervical Cancer Incidence Rate (per 100,000) NOTE: Calculated using 2007-2012	8.2 (CI 4.9-12.7)	6.1 (CI 4.2-8.5)	5.1 (CI 4.4-5.9)	N/A
Melanoma Incidence Rate (per 100,000) NOTE: Calculated using 2007-2012	19.1 (CI 15.4-23.5)	22.0 (CI 19.1-24.8)	26.6 (CI 25.4-27.8)	N/A
Oral/Pharynx Cancer Incidence Rate (per 100,000) NOTE: Calculated using 2007-2012	13.3 (CI 10.2-17.0)	10.8 (CI 8.8-12.8)	11.2 (CI 10.5-12.0)	N/A
Source: NH DHHS				

Cancer Screening

Organizations like the American Cancer Society and the US Preventative Screenings Task Force have established screening guidelines for the early detection of some cancers. Because early detection and diagnosis can increase treatment options and outcomes, screenings are one of the primary prevention strategies available for individuals at risk of developing cancer. A primary prevention is an intervention that is accomplished before a disease has manifested signs. For example, in the case of breast cancer, recommended screenings include obtaining a mammogram as well as clinical breast examination. According to the American Cancer Society, mammography screenings, used to check for breast cancer even when a woman has no signs or symptoms, have contributed to the reduction in deaths from breast

cancer among women over age 40. Nationally, between 1990 and 2010 there has been a 34% reduction in death rate from breast cancer.[7]

Other cancer types for which screenings are available include colon cancer and cervical cancer. A colonoscopy procedure can find precancerous polyps in the colon so that they can be removed before they become cancerous. According to Healthy People 2020, in the United States in 2008, 52.1% of adults ages 50-75 received a colorectal screening. The corresponding HP 2020 goal is to increase the proportion of adults in this targeted age group who receive one of the recommended screenings to 70.5%. In an effort to improve cervical cancer screening use by women age 21-65, Healthy People has established a 2020 goal of 93% of women in the age group who participate in Pap test procedures based on the currently recommended frequency of screening.[1]

The 2012 Behavioral Risk Factor Surveillance System(BRFSS) data for NH indicates that at least 75% of adults accessed screenings for breast cancer, cervical cancer, and colon cancer; three cancer types where adult screenings are recommended.[8] Table 4.5 shows the screening rates by type and geography, and also indicates the HP2020 and NH SHIP goals for the percentage of targeted individuals who obtain colorectal, pap, and mammogram screenings.[4,8]

Table 4.5 Preventative Screenings, 2012

	Nashua	GNPHR	NH	HP2020 Goal	SHIP
Colorectal Cancer Screening in adults 50 and older	77.7% (CI 69.7-85.8)	76.7% (CI 72.0-81.5)	75.1% (CI 73.2-77.1)	70.5%	82% (2020)
Pap Smear in adult women ages 21-65	92.0% (CI 84.3-99.8)	87.4% (CI 82.1-92.6)	86.3% (CI84.1-88.6)	93.0%	N/A
Mammograms in adult women ages 50-74	81.7% (CI 74.2-89.2)	79.2% (CI74.0-84.4)	80.9% (CI 78.9-82.9)	81.1%	84%** (2020)

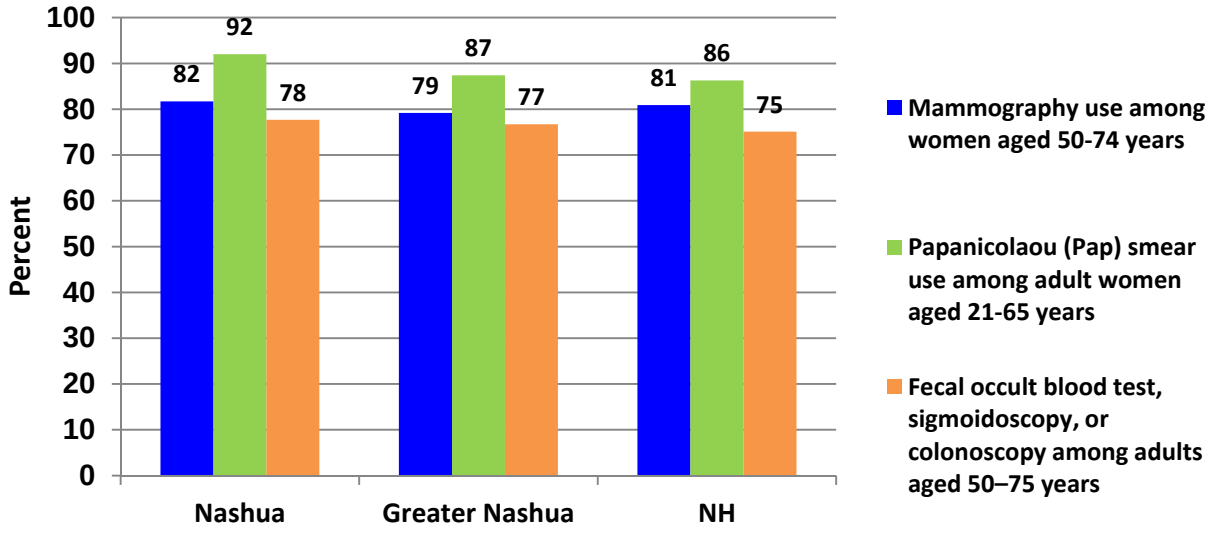
*Source: NH DHHS; ** = SHIP goals are based on ages 40-64 years while both the HP2020 and BRFSS targets are for age ranges of 50-74. While the listed percentages cannot be directly compared, the SHIP goal was included to provide a more complete picture of goals in NH.*

Figure 4.3 compares the percentages by screening type for the Nashua, GNPHR, and NH geographies. In Nashua, an impressive 92% of women age 21-86 had a pap test to screen for cervical cancer, a number that is only 1% below the national HP2020 goal. The percentage of Nashua women in the targeted age group who had mammograms was 81.7%, slightly higher than the percentage of either the regional or state participation rates. The SHIP identifies a target state goal for 2020 of 84% of women between the ages of 40-64 having a mammogram within the past year. As of 2012 in the GNPHR, 79% of women age 50-74 had mammograms, and 87% of those aged 21-86 years participated in cervical cancer screenings. State percentages for the female screenings were somewhat higher than those in the region, with 80.9%

of women having mammograms and 86.3% of the targeted age group participating in cervical cancer screening. HP2020 has set an aggressive national goal of 93% of women between the ages of 21 and 65 obtaining cervical cancer screenings.

Among all adults in New Hampshire age 50-75, 75% participated in one of the recommended screening tests for colon cancer. Although the current State of NH rate for colorectal screenings already exceeds the HP2020 goal, the NH SHIP includes a target of increasing the percent of adults age 50 and over who report being screened for colorectal cancer to 82% by 2020. Within Nashua, 78% of adults age 50-75 had a fecal occult blood test, sigmoidoscopy, or colonoscopy to screen for colon cancer. The Nashua participation rate for colorectal screenings of adults in the age group, as well as both the regional rate of 77% and the state rate of 75%, exceeds the HP2020 goal.[8]

Figure 4.3 Cancer Screenings by Geography, 2012



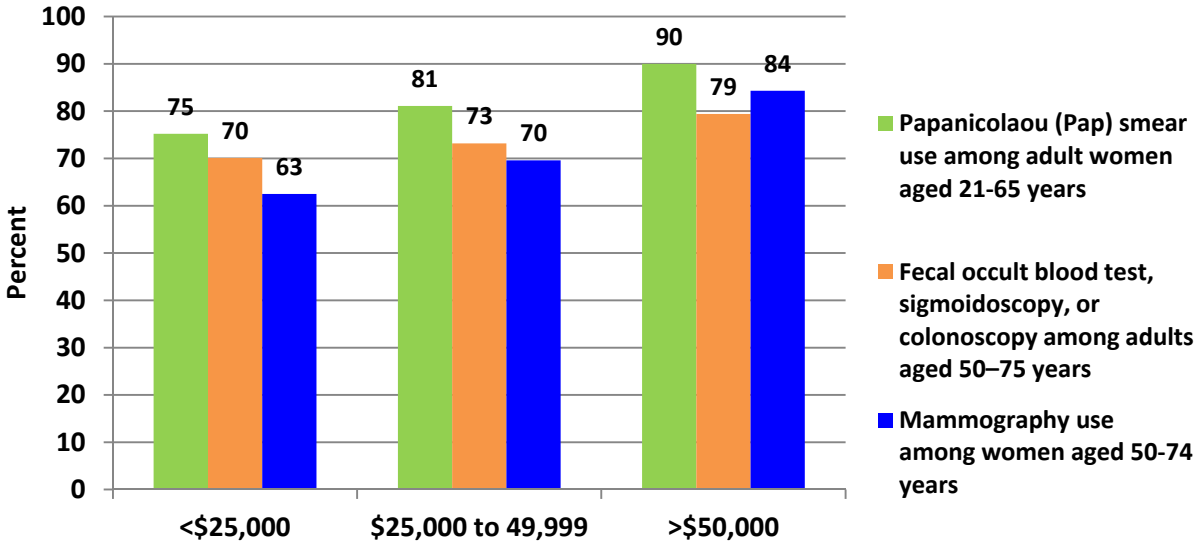
Source: NH DHHS

While there are resources in the region to assist low income individuals with obtaining free or reduced fee screenings, the rates for cancer screening participation is lower for individual with lower incomes. Among adult women in the GNPHR who are between 21-65 years and whose income is less than $26,000 annually, the rate of cervical cancer screening is 75%. Rates for this same screening increase to 81% for women in the age group whose annual income is between $26,000 and $49,000 and to 90% once income level is $50,000 or more (Figure 4.4).[8]

When looking at breast cancer screening rates and income among women in the region aged 50-74 years with income under $26,000, only 63% had mammograms. When income level increases to between $26,000 and $49,000, the rate increases to 70% and then to 84% when income is $50,000 or more. Similar trending results for colon cancer screenings in the GNPHR indicate 70% of all adults age 50-75 years with annual income less than $26,000 participate in one of the recommended screening procedures, which increases to 73% among those with income between $26,000 and $40,000 and to

79% for adults age 50-75 years with income of $50,000 or more. Figure 4.4 shows how income compares to cancer screening rates in the GNPHR

Figure 4.4 Cancer Screenings by Annual Income, 2012

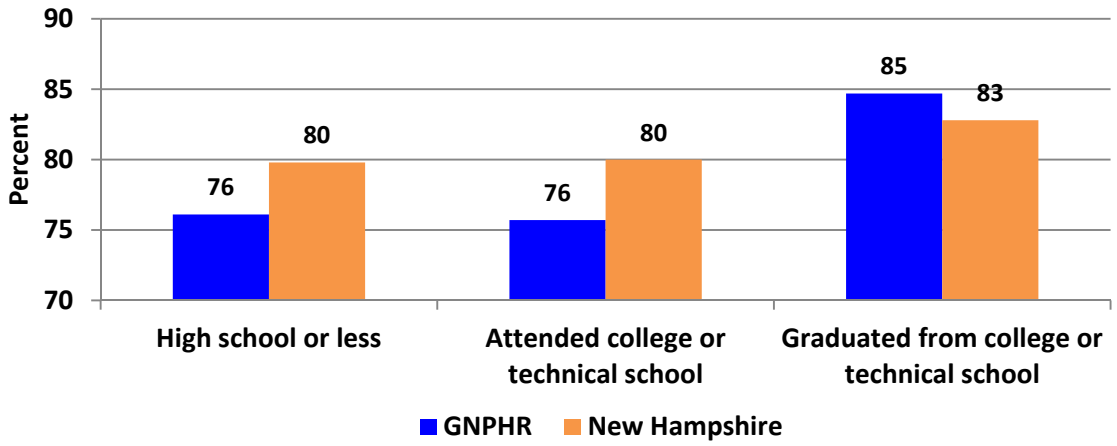


Source: NH DHHS

Use of mammography screenings not only varies according to income, but also by the level of education women have completed. During 2012, approximately 76% of women aged 50-74 years in the GNPHR with less than a high school, college or technical school diploma obtained a mammogram compared to a mammography use rate of 85% among those who graduated from a college or technical school. State percentages show a similar relationship between educational achievement and mammography use with a rate of 80% mammogram use among women whose educational background did not include graduating from a college or technical school and 83% among those who did earn higher education degrees. The NH and GNPHR use of mammography and educational attainment is shown in Figure 4.5.

When looking at breast cancer screening rates and income, among women in the region aged 50-74 years with income under $26,000, only 63% had mammograms.

Figure 4.5 Mammography Use, Women 50-74 years by Education, 2012



Source: NH DHHS

Considering that cancer impacts a wide segment of the population, and also that there are many opportunities for intervention and prevention, cancer remains an important public health issue. In the GNPHR, cancer screenings and treatment are available, and various support groups exist to assist both patients and their caretakers as they manage many of the challenges of cancer. Resource listings, available through the City of Nashua Division of Public Health, can provide information about where to find affordable, accessible, preventative screening services. There remains, however, much work to be done in providing the coordinated emotional, physical, social, and financial support cancer patients need during and after a cancer experience. In New Hampshire, the New Hampshire Comprehensive Cancer Collaboration (NHCCC) is a partnership of individuals and organizations working together to eliminate cancer in the state. This organization has utilized the skills and resources of collaborating organizations to address issues across the cancer continuum. Looking forward, the NHCCC plan for 2015-2020 is organized around three overarching goals: foster communities and systems that support and reinforce healthy lifestyles; prevent and detect cancer at its earliest stage; and optimize quality of life for those affected by cancer. Efforts such as those of the NHCCC are bringing hope to the families and communities in the state that have struggled with cancer.

For more information on the New Hampshire Comprehensive Cancer Collaboration, visit http://www.nhcancerplan.org/.

New Hampshire
COMPREHENSIVE
CANCER
COLLABORATION
Together-Eliminating Cancer

[1] U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. Healthy People 2020. Washington, DC. Retrieved May 20, 2014, from http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=5

[2]American Cancer Society. (2013, September 5). *Lifetime Risk of Developing or Dying From Cancer*. Retrieved May 20, 2014, from http://www.cancer.org/cancer/cancerbasics/lifetime-probability-of-developing-or-dying-from-cancer.

[3]Office of Health Statistics and Data Management. Vital Statistics-Death Data. Concord, New Hampshire: New Hampshire Department of Health and Human Services, 2012.

[4.] NH Division of Public Health Services. *NH State Health Improvement Plan 2013-2020.* Concord, New Hampshire: New Hampshire Department of Health and Human Services, 2013.

[5] Centers for Disease Control. (CDC).(2014). *Racial or Ethnic Variation.* Retrieved July 23, 2014 from http://www.cdc.gov/cancer/dcpc/data/ethnic.htm

[6] Bureau of Public Health Statistics and Informatics. (2003-2007). *New Hampshire State Cancer Registry; Surveillance Epidemiology and End Results Program (SEER).* Concord, New Hampshire: New Hampshire, 2011, 2012.

[7] American Cancer Society. (2014) *Breast Cancer: Mammography Statistics (2013)* Retrieved May 20, 2014 from *http://www.cancer.org/research/infographicgallery/mammography-statistics*

[8] Bureau of Public Health Statistics and Informatics. *New Hampshire Behavioral Risk Factor Surveillance System Data*. Concord, NH: New Hampshire Department of Health and Human Services, 2012.

"So much of what we are currently seeing as far as human suffering and misery comes from diseases that should have been preventable but were not."

- *Francis Collins*

Burden of Chronic Diseases

Contents

Chronic diseases are the leading cause of death and disability in the United States. Chronic diseases cause 7 out of 10 deaths each year. Heart disease, stroke and diabetes alone cause more than 33 percent of all deaths each year. [1] They are also responsible for significant healthcare expenditure and loss of productivity. In Nashua, the Greater Nashua Public Health Region (GNPHR) and New Hampshire, diseases of the heart, stroke and diabetes are also among the top 10 causes of death.[2] In 2012, heart disease accounted for 21% of deaths in New Hampshire, while stroke caused 4% of deaths.[3] Approximately 4 out of 10 men and 3 out of 10 women in the GNPHR have hypertension.[4] Additionally, asthma, a chronic condition of the lungs, affects over 1 in 10 adults and almost 1 in 6 children in Nashua compared to about 1 in 9 children in New Hampshire.[4]

Leading Causes of Death in the GNPHR

1. Cancer
2. Heart Disease
3. Chronic Lower Respiratory Disease
4. Accidents
5. Stroke
6. Alzheimer's Disease
7. Diabetes
8. Kidney Disease
9. Suicide
10. Influenza /Pneumonia

For more on mortality, visit Chapter 2.

In addition to the burden of disease, the direct and indirect costs of chronic diseases are growing ever more expensive. Over 680,000 cases of seven common chronic diseases — cancers, diabetes, heart disease, hypertension, stroke, mental disorders, and pulmonary conditions — were reported in New Hampshire in 2003. That same year, treatment expenditures for those diseases reached $1 billion with an additional $4.4 billion in lost productivity.[5] Given New Hampshire's population of just over 1.3 million people, this impact is staggering. Nationally, the total costs of heart disease and stroke in 2010 were estimated to be $315.4 billion.[6]

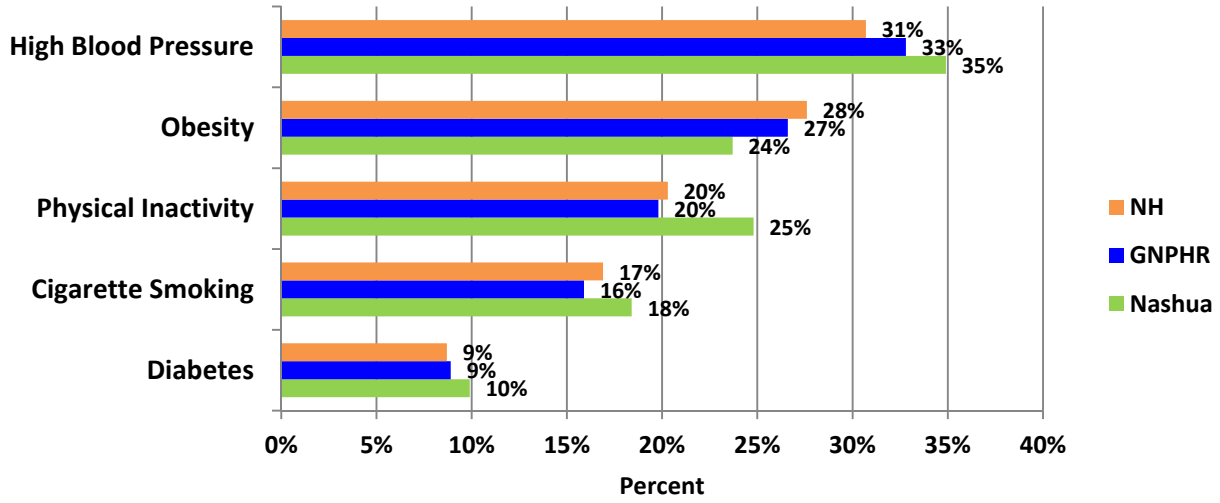
A growing body of evidence points to the effectiveness of lifestyle interventions for lowering the risk of developing chronic disease (primary prevention). There is also strong evidence to support these measures in the management of existing disease (secondary prevention).[7] According to a study published in the *Archives of Internal Medicine* in 2009, four healthy lifestyle factors—never smoking, maintaining a healthy weight, exercising regularly and following a healthy diet—together appear to be associated with as much as an 80 percent reduction in the risk of developing cancer, diabetes and cardiovascular disease. [8] These measures, in combination with medical interventions, have the potential to dramatically reduce the risk and impact of chronic disease.

Although their contribution to the development of heart disease and stroke is well known, the underlying risk factors for these conditions remain common as shown in Figure 5.1.

For reference, each of the following subsections includes at least one comparison to the Healthy People 2020 goals. A list of these goals is provided below:

- Increase the proportion of adults (18 and older) who have had their blood cholesterol checked within the preceding 5 years from 74.6% (2008) to 82.1%
- Increase the percentage of adults aged 18 years and older with high blood pressure/hypertension who blood pressure is under control from 43.7% (2005-2008) to 61.2%
- Reduce the percentage of adults aged 18 years and older with hypertension to 26.9%
- Reduce the national stroke death rate to 34.8 per 100,000

Figure 5.1 Percent of Adults Reporting Heart Disease and Stroke Risk Factors, 2012



Source: NH DHHS

Nashua and the GNPHR have similar rates of coronary heart disease, heart attacks, stroke and diabetes compared to NH (Table 5.1). About 3% of Nashua residents have heart disease, 10% have diabetes, 2% have had a stroke and 4% have had a heart attack.[26] According to the Trauma and EMS Information System, there were 1,103 EMS calls for cardiac related events and 199 calls for hyperglycemia or hypoglycemia. By promoting healthy lifestyle choices, medical clinics, public health outreach programs, schools and other non-profit organizations can directly influence medical outcomes as well as their economic and other consequences.

Table 5.1 Chronic Disease Rates, 2010 or 2011

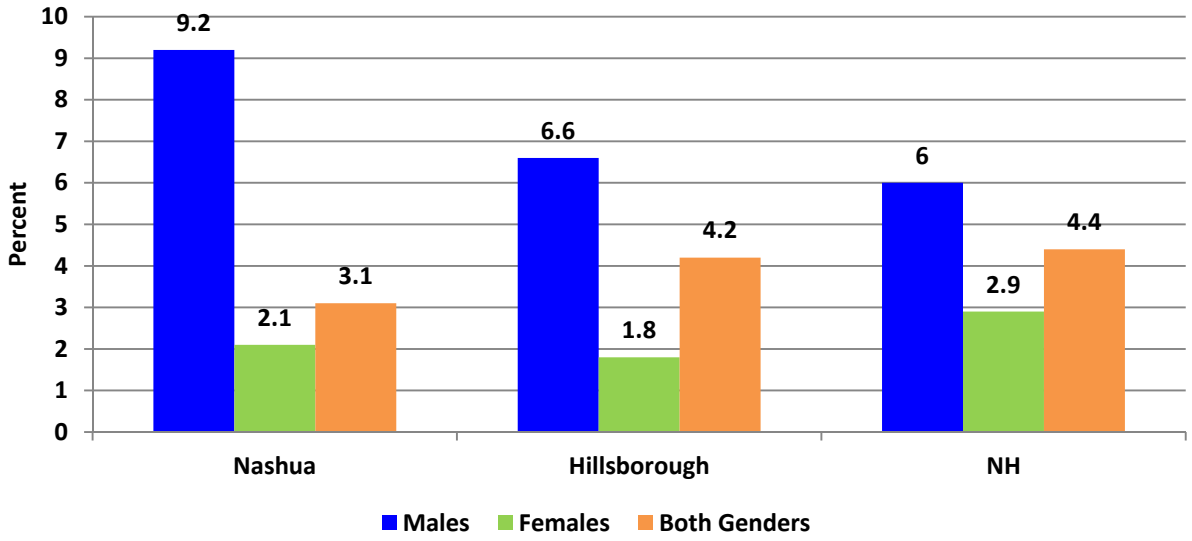
	Nashua	GNPHR	NH
Coronary Heart Disease	2.7% (CI 1.1-4.3%)	2.5% (CI 1.5-3.6%)	4.1% (CI 3.6-4.7%)
Heart Attack	4.4% (CI 2.2-6.5%)	4.0% (CI 2.6-5.4%)	4.2% (CI 3.7-4.8%)
Stroke	1.5% (CI 0.1-2.8%)	2.1% (CI 1.0-3.1%)	2.4% (CI 2.0-2.8%)
Diabetes	10.2% (CI 6.7-13.8%)	8.7% (CI 6.7-10.7%)	9.5% (CI 8.7-10.4%)
Source: NH DHHS, BRFSS			

Heart Disease

The coronary arteries carry oxygen-rich blood to the heart muscle, thereby enabling it to perform its critical function of providing blood flow to nearly every tissue in the body. Coronary artery disease usually results from the building up of plaque which hardens and obstructs the blood flow. This process may occur silently for years before manifesting as chest pain (angina pectoris), shortness of breath or in

the most severe cases, sudden cardiac death. In 2011, 8.3% (CI 4.1-12.4%) of adults over 65 years of age in the GNPHR had coronary heart disease compared to 12% (CI 10.57-14.13%) in New Hampshire and Nashua (12% CI 4.8-19.6%). CHD in 2010 was significantly higher in Nashua males (9.2% CI4.4-12%) than in Nashua females (2% CI 0.4-3.8%) as seen in Figure 5.2.[10] This gender gap is similar to that seen nationally.[9]

Figure 5.2 Coronary Heart Disease by Gender and Geography, 2010

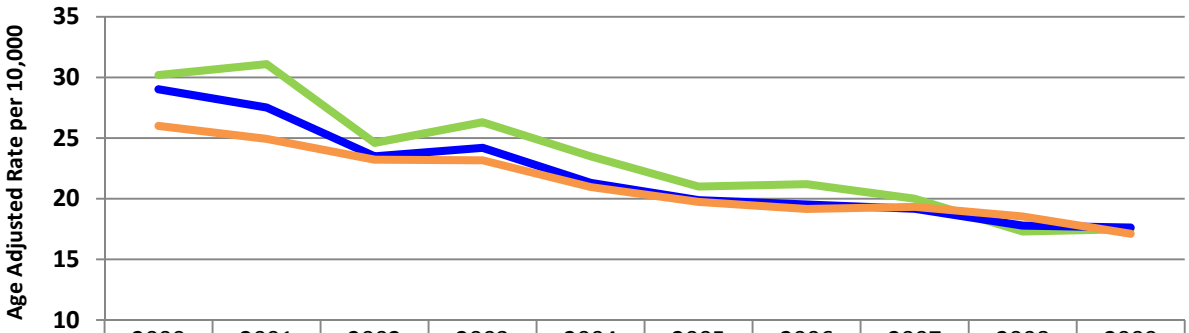


Source: NH DHHS, BRFSS

Modifiable risk factors for heart disease include smoking, hypertension, high cholesterol, physical inactivity, obesity, diabetes, unhealthy diet and chronic stress. Even as the overall death rate from heart disease has declined since the 1960's[10], it remains the number one killer nationally.[11] Cardiovascular disease (CVD) is a broad term for a range of diseases affecting the heart and blood vessels. It includes stroke, heart attack, hypertension and several other conditions. As such it is immensely costly. According to one estimate, "By 2030, 40.5% of the US population is projected to have some form of cardiovascular disease (CVD). Between 2010 and 2030, real total direct medical costs of CVD are projected to triple, from $273 billion to $818 billion (2008 dollar rate)."[12]

Every 34 seconds someone in the United States has a heart attack and every minute someone dies from a heart-related event.[13] In 2009, heart attacks in New Hampshire accounted for 2,589 hospital discharges and 363 of those adults were Nashua residents. The age-adjusted rate of hospital discharges from heart attacks decreased slightly from 2000 to 2009 in Nashua, the GNPHR and NH (Figure 5.3). However, there is no statistically significant difference between Nashua, the GNPHR and NH with respect to heart attack hospitalizations (as shown in the map in Figure 5.4). Deaths from heart attacks are highest in adults over 85 years of age. From 2006 to 2010, there were 213 deaths from heart attacks in the GNPHR and 91 deaths were in adults over 85 years of age.[23]

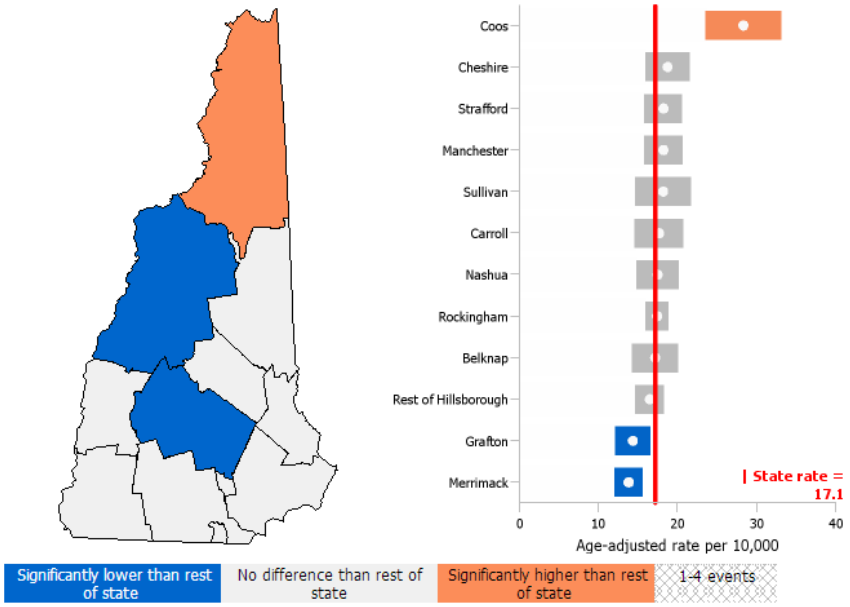
Figure 5.3 Age-Adjusted Rate for Heart Attack Hospitalizations by Geography, 2000-2009



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Nashua	30.2	31.1	24.6	26.3	23.5	21	21.2	20	17.3	17.5
GNPHR	29.02	27.52	23.5	24.2	21.3	19.88	19.53	19.17	17.78	17.62
NH	26	24.94	23.22	23.16	20.96	19.73	19.16	19.33	18.54	17.11

Source: NH DHHS

Figure 5.4 Heart Attack Hospitalizations, Age-adjusted Rate, 2009



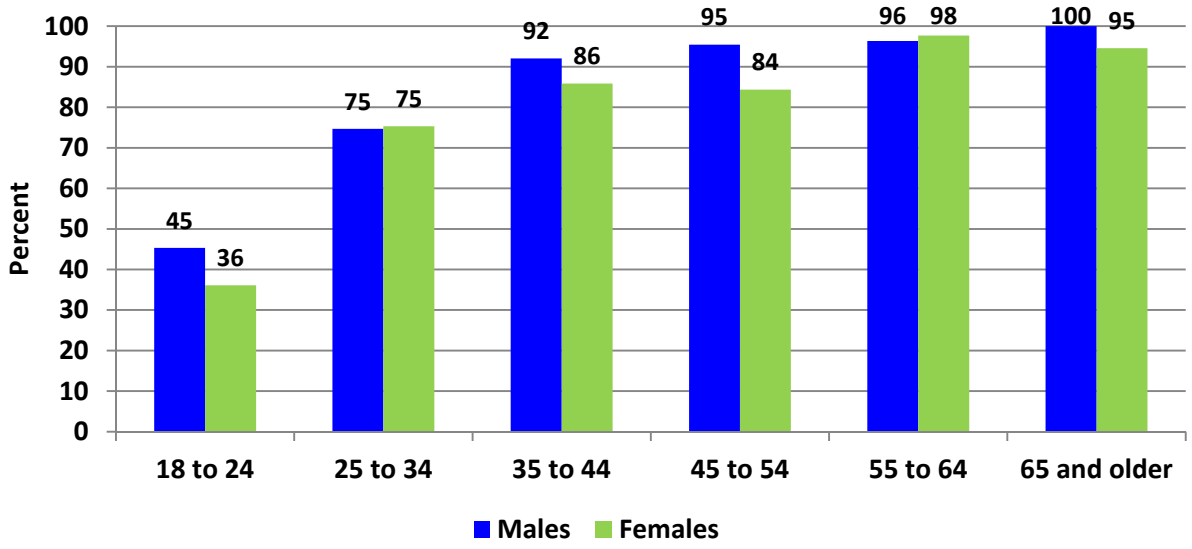
In the above figure, the average rate of heart attack hospitalizations for the state is shown by the red line (17.1 persons per 10,000). Counties (including Hillsborough) and cities (including Nashua) with rates that overlap the red line do not have rates of hospitalization statistically different from that seen in the state as a whole.[23]

High Cholesterol & Cholesterol Screening

Cholesterol is a waxy fat-like substance that is involved in many processes in the body. High levels of certain types of cholesterol have been associated with increased risk for heart disease, stroke and other vascular (blood vessel) disease. Since high cholesterol is almost always a "silent" condition in the early stage, before it causes symptoms, blood testing is needed to determine the levels. High cholesterol is often seen in conjunction with other conditions and lifestyle problems including obesity, smoking, hypertension, diabetes, heart disease, unhealthy nutrition and lack of physical activity. Family history also contributes.

One of the Healthy People 2020 Goals is to increase the proportion of adults (18 and older) who have had their blood cholesterol checked within the preceding 5 years from 74.6% (2008) to 82.1%.[14] The rates of cholesterol screening in the GNPHR were already above this target in 2011: 83% of females and 85% of males had had their cholesterol checked within the past 5 years. There are few differences in cholesterol screening by gender. It is notable, however, that less than half of people under 25, and only 75% of those 25-34 years old have had cholesterol screening performed.[26]

Figure 5.5 Cholesterol Screening by Age and Gender, GNPHR, 2011



Source: NH DHHS, BRFSS

Cholesterol screening is just the first step. Less than half (46%) of New Hampshire adults have their cholesterol under control, a proportion which mirrors that seen in the US as a whole.[15] The principal ways in which one can control cholesterol are:

- Eating a healthy diet
- Exercising regularly
- Maintaining a healthy weight
- Stopping (or never starting) smoking.

For certain people, medication is recommended to further reduce the risk of heart disease, stroke and other vascular (blood vessel) disease. Nationally, and in NH and the GNPHR, there is still room for improvement to control high cholesterol.

Hypertension

Hypertension (high blood pressure) is defined as systolic blood pressure >140 and/or diastolic blood pressure over 90 mm Hg. Hypertension increases the risk for stroke, heart attack, kidney disease, eye disease and other blood vessel damage. Risk factors for hypertension include high sodium intake, physical inactivity, excess weight, smoking, high alcohol consumption, and chronic stress. The prevalence of hypertension also increases with age, race and family history. Since high blood pressure is a "silent" disease, periodic measurement of blood pressure is recommended for screening.

The GNPHR and Nashua do not currently meet the State Health Improvement Plan goal to decrease hypertension to 26% by 2015.

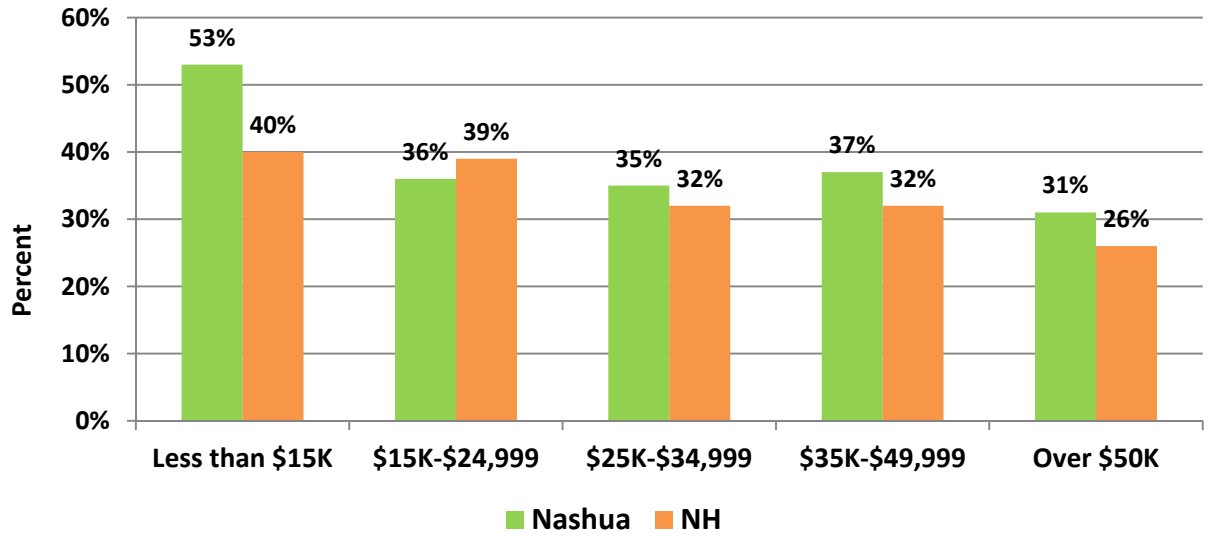
In the GNPHR, 32.8% of adults over 18 years of age have been given a diagnosis of hypertension, including 40% of men and 27% of women (Table 5.2).[16] This compares to an overall prevalence of hypertension among U.S. adults aged ≥18 years in 2003−2010 of 30.4% (an estimated 66.9 million).[17] Notably, the prevalence of hypertension is higher in New Hampshire residents who report an income in the lowest quintile (< $15,000 per year) at over 50%. This contrasts with a 30% rate in residents reporting incomes in the highest quintile (>$50,000 per year). [15] This disparity is striking because nationally the effect of income is smaller.[18] Since hypertension contributes substantially to the morbidity and mortality from stroke and heart disease, the implications for targeted intervention in this vulnerable population are apparent.

One of the Healthy People 2020 goals is to reduce the percentage of adults aged 18 years and older with hypertension to 26.9%; the GNPHR and Nashua do not currently meet this standard. Similarly, the NH State Health Improvement Plan (SHIP) also has a goal to reduce hypertension to 26% by 2015 and to 22% by 2020.[26]

Table 5.2 Hypertension Data, 2011

	Nashua	GNPHR	NH
Percent with hypertension	34.9% (28.8-41%)	32.8% (28.7-36.8%)	30.7% (29.3-32.1%)
Percent of females with hypertension	31.6%	27.3%	27.5%
Percent of males with hypertension	39.8%	39.8%	33.9%
Percent of adults with hypertension take medicine to control it	72.7% (62.2-83.2%)	74.1% (66.4-81.7%)	75% (72.4-77.6%)
Source: NH DHHS, BRFSS			

Figure 5.6 Hypertension by Income, 2011



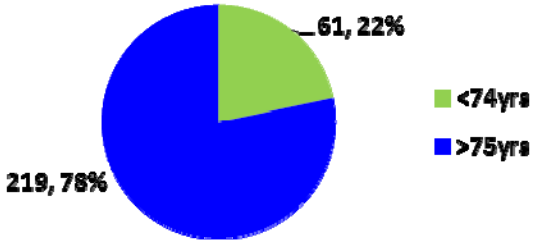
Source: NH DHHS, BRFSS

Seventy-four percent (74%) of patients with hypertension who were seen in the major health systems in the Greater Nashua Region had blood pressure which was at goal (less than 140/90) when it was last recorded.[19] This compares favorably with national statistics, which show that among those with hypertension, an estimated 35.8 million (53.5%) did not have their hypertension controlled.[20] One of the Healthy People 2020 goals is to increase the percentage of adults aged 18 years and older with hypertension whose blood pressure is under control from 43.7% (2005-2008) to 61.2%. Although the number of people in the GNPHR with hypertension that is controlled is above the national average, about 1 in 4 people continue to have suboptimal control. When combined with the prevalence of other risk factors that cause cardiovascular disease, there remains an opportunity to reduce the complications from hypertension still further than has already been achieved.

Stroke

Stroke occurs when the blood supply to a part of the brain is interrupted. This most commonly occurs due to clot formation and obstruction of a blood vessel. Bleeding from a broken artery is another frequent cause. Stroke is often related to poorly controlled high blood pressure, smoking, and diabetes. Stroke is a leading cause of long-term disability and people who survive an initial stroke may be left with permanent problems with vision, motor function (weakness), speech and language problems, memory and balance. The controllable risk factors for stroke are very similar to those for coronary artery disease, and include hypertension, high cholesterol, smoking, alcohol use, physical inactivity, obesity and diabetes. The estimated cost of stroke (direct and indirect costs) in 2010 nationally was $53.9 billion.[21]

Figure 5.6 Deaths from Stroke by Age, 2008-2012 in New Hampshire



Stroke data from New Hampshire and the GNPHR indicate there continues to be room for improvement in stroke prevention:

- From 2005-2010, the self-reported incidence of stroke did not have a statistically significant change; in 2010, 2.3% of men and 2% of women indicated that a health care professional had told them they had experienced a stroke[22]
- From 2008 to 2012, there were 2,360 deaths from stroke in New Hampshire and there were 280 deaths from stroke in the GNPHR.[23]
- In 2012, the death rate from stroke was 33.3 per 100,000 in the GNPHR and 27.8 per 100,000 in Nashua.[23]

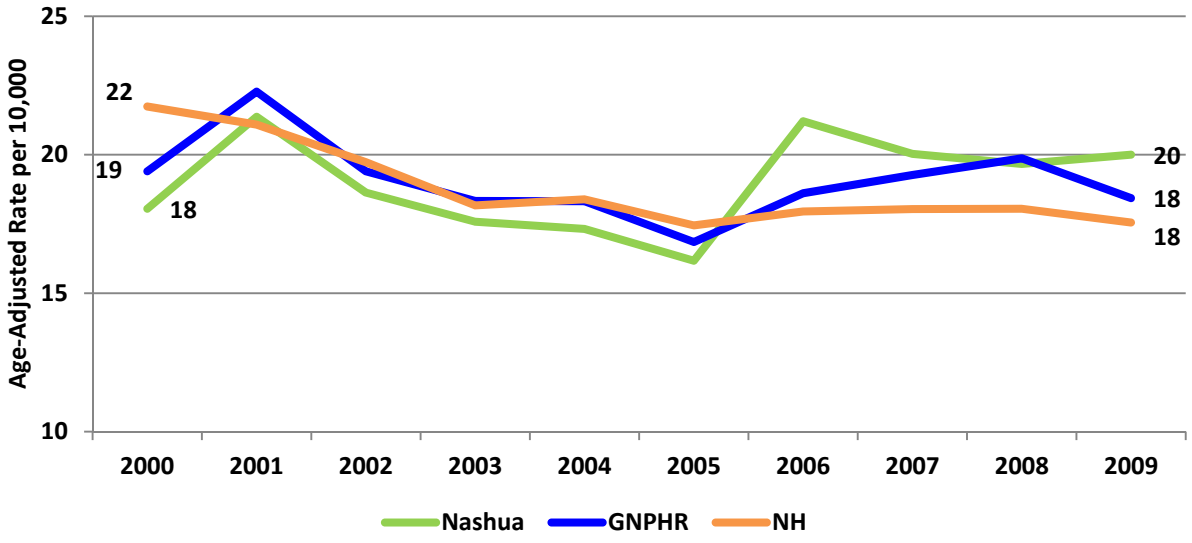
One of the Healthy People 2020 goals is to reduce the national stroke death rate to 34.8 per 100,000 and the NH SHIP goal is to reduce the rate for NH to 28 per 100,000 by 2020. As shown in Table 5.3, the death rate from stroke in Nashua already meets this goal, but the rate in the GNPHR has progress to make. The rate of death from stroke by gender is similar but it increases as people age with the highest death rate in adults over 85 years of age. From 2008 to 2013, the death rate stayed consistently around 30 per 100,000 with minimal change over time.[23]

Table 5.3 Death Rate from Stroke, 2012

	Nashua	GNPHR	NH
Death rate from stroke (per 100,000)	27.8	33.3	29.0
Source: NH DHHS, BRFSS			

Rates of hospitalization for stroke have remained fairly consistent over time in the GNPHR and New Hampshire, but the rate for Nashua has increased slightly since 2005 from 16.2 per 10,000 to 20 per 10,000 in 2009 (Figure 5.7).[23]

Figure 5.7 Age-Adjusted Rate for Stroke Hospitalizations, 2000-2009



Source: NH DHHS

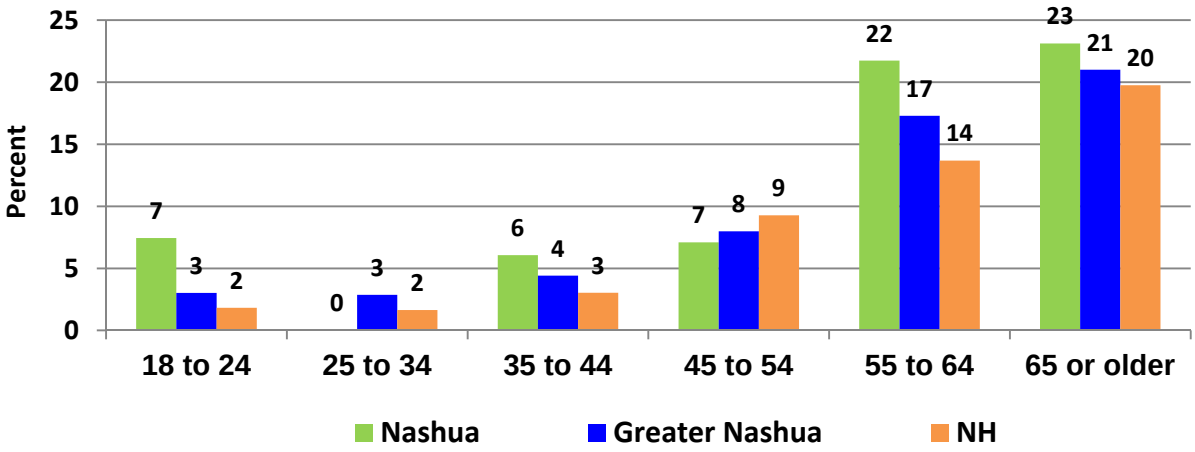
Diabetes

Diabetes is a group of diseases marked by high levels of blood glucose resulting from problems in insulin production, insulin action, or both. Approximately 95% of diabetes is type II (formerly adult-onset) diabetes. The body initially becomes resistant to insulin and then later loses its ability to produce enough insulin. Diabetes is a major cause of stroke, heart disease and heart attacks. It also is a leading cause of blindness, non-traumatic amputations and kidney disease requiring dialysis. It can cause painful nerve damage, and lead to reduced circulation to the arms and legs. The development and impact of diabetes is synergistic with obesity, smoking, high cholesterol, high blood pressure, lack of physical activity, poor diet and mental health problems.

In 2010 diabetes was estimated to affect 25.8 million Americans or about 8.3%.[24] In the same year in New Hampshire, that percentage was 7.1%.[20] In Nashua, the prevalence was 9.9% (CI 0-21.64%) and Greater Nashua 9.5% (CI 0-8.88%).[15] In addition, up to 1 in 4 adults nationally do not know he or she has diabetes.[25] Diabetes is more common:

- In people over 55 years of age
- In Nashua residents compared to NH residents as a whole (Figure 5.7)
- In males under 55 compared to females under 55 (and then equally prevalent in men and women over 55).[26]

Figure 5.8 Diabetes Prevalence by Age and Geography, 2011

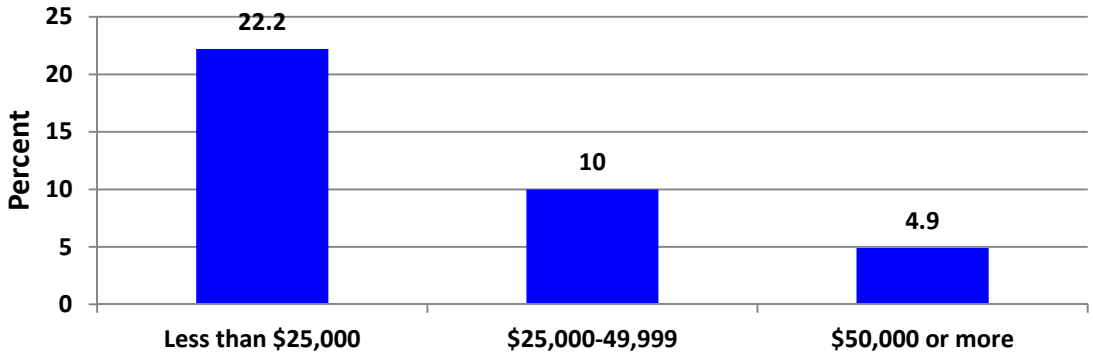


Source: NH DHHS, BRFSS

As with hypertension, a marked association is seen with income: lower income Nashua residents have substantially higher rates of diabetes.[23]

Lower income Nashua residents have higher rates of diabetes and hypertension.

Figure 5.9 Adults with Diabetes by Income, Nashua, 2011



Source: NH DHHS, BRFSS

Diabetes has tremendous economic costs which include both direct medical costs and those related to lost productivity. In 2012, the total cost to the US economy was estimated at $245 billion. Care for people with diagnosed diabetes consumes 1 in 5 health care dollars in the U.S., and more than half of that expenditure is attributable to diabetes.[27] In 2007, diabetes indirectly accounted for 15 million work days absent, 120 million work days with reduced performance.[28] The hospitalization rate due to diabetes in Nashua is higher than in New Hampshire as a whole (Figure 5.10). Hospitalizations attributable to diabetes for ambulatory care sensitive conditions[29] is also significantly higher for Nashua than the rest of the state (Figure 5.11). When you look at the GNPHR without Nashua, the rate for diabetes hospitalizations and diabetes hospitalizations for ambulatory care sensitive conditions is significantly lower than the state (Figure 5.10; 5.11).

Figure 5.10 Diabetes Hospitalizations, Age-Adjusted Rate, 2007

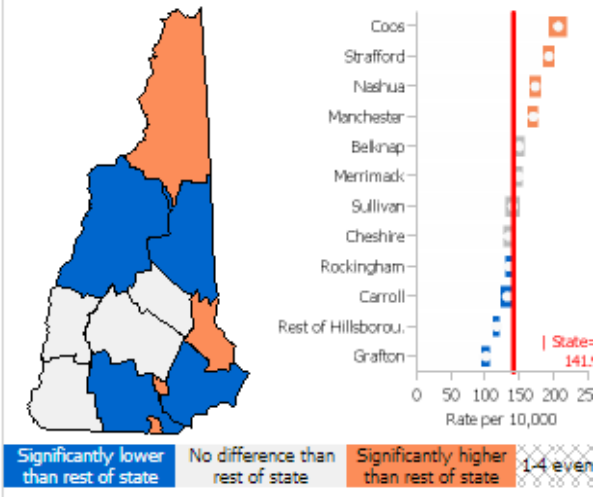
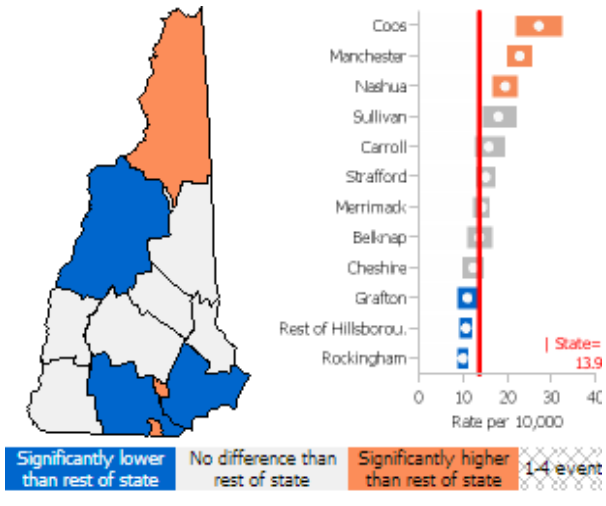


Figure 5.11 Diabetes Hospital Visits for Ambulatory Care Sensitive Conditions (Age-Adjusted Rate),



Source: NH DHHS, WISDOM

Unfortunately, this substantial impact has the potential to grow dramatically. It is estimated that more than 86 million adults in the US have pre-diabetes[30], a precursor to diabetes, marked by higher than normal blood sugars that do not yet meet criteria for diabetes. These individuals have a 15-30% chance

of developing diabetes within 5 years of this diagnosis. The self-reported prevalence of pre-diabetes for adults 18 years and older in 2010 for Nashua was 8% (CI 3.76-12.27%) and for NH 7.2% (CI 6.28-8.07%).[22] However, although awareness of pre-diabetes as a diagnosis is growing, it remains only a small minority of those who have the condition.[31]

Table 5.4 Diabetes Health Data, 2010, 2011

	Nashua	GNPHR	NH
Percent with pre-diabetes (2010)	8.2%	*	7.2%
Percent with diabetes (2011)	9.9%	9.5%	8.8%
Adults with diabetes that had a dilated eye examination (2011)	*	72%	76.2%
Adults with diabetes that took a diabetes self-management course (2011)	*	48.6%	55.8%
Adults with diabetes that also have coronary heart disease (2010)	14.8%	*	15.26%
Adults with diabetes that also have high cholesterol (2010)	*	76.3%	68.4%
*Source: NH DHHS, BRFSS; *=data not available for this report*			

People who have diabetes should see a primary care doctor at least twice a year if their diabetes is well controlled, and more often if it is not well-controlled, or if they have other conditions. As diabetes progresses, more medications for control of blood sugar are added and patients may require insulin. Many people with diabetes also have one or more of the following: obesity, high cholesterol, high blood pressure, heart disease or smoking which require additional medications in order to control. Specialist consultation is common as patients develop complications from their disease, adding to the complexity and cost of management.

Asthma

Asthma is a chronic lung disease that involves swelling and inflammation of the airways, reversible airway obstruction, and muscle spasms around the airways in response to a variety of triggers. The main symptoms of asthma are cough, chest tightness, wheeze (a whistling, high-pitched noise coming from the chest), and shortness of breath. Asthma symptoms can be brought on by a number of different triggers including smoke (tobacco, wood and others), air pollution (combustion byproducts, solvents and other chemical irritants), dust mites, cockroach allergen, mold, pet dander and respiratory infections (e.g. viruses). Poorly controlled asthma can cause difficulty breathing requiring emergency department visits, hospitalizations and even death in severe cases.

National rates of asthma are 9.3% for children and 8% for adults.[32] Over 1 in 10 adults in Nashua and in New Hampshire overall have asthma. Almost 1 in 6 children in Nashua have asthma (15.4%) compared to about 1 in 9 in the rest of the state (11.5% in the Greater Nashua Region and 10.4% state-wide).[4]

Between 2001 and 2010, a statistically significant increase was seen among New Hampshire adults in the prevalence of current asthma (p=0.005) from 8.4% to 10.1%.[33] Therefore, New Hampshire not only has more adults and children living with asthma, but the rates have been increasing.

There exists an association between body mass index (BMI) and asthma; higher prevalence of asthma is associated with higher levels of BMI. As the rates of overweight and obesity rise, this has the potential for asthma rates to increase as well.

Asthma National Quick Facts:[34]

- Asthma caused 10.5 million missed days of school and 14.2 million missed days of work in 2008
- Asthma cost the US about $56 billion in medical costs, lost school and work days, and early deaths in 2007
- Asthma caused 479,300 hospitalizations, 1.9 million emergency department visits and 8.9 million doctor visits in 2009

According to the 2006-2008 NH Behavioral Risk Factor Surveillance System Adult and Child Asthma Call-back Surveys:

- 20.7% of adults (CI 17.2 - 24.3) and 29.3% of children (CI 22.1 - 36.5) had 1 or more urgent visits due to worsening asthma symptoms in the previous 12 months. These data did not include emergency room visits.
- 19.5% of adults (nearly 1 in 5) with asthma reports experiencing cost barriers to adequate treatment. This occurred mainly in the form of medication expenses (17.5% of adults)

In 2008, asthma cost New Hampshire over $266 million, of which, over $81 million was in Hillsborough County, the highest cost county in the state. [35]

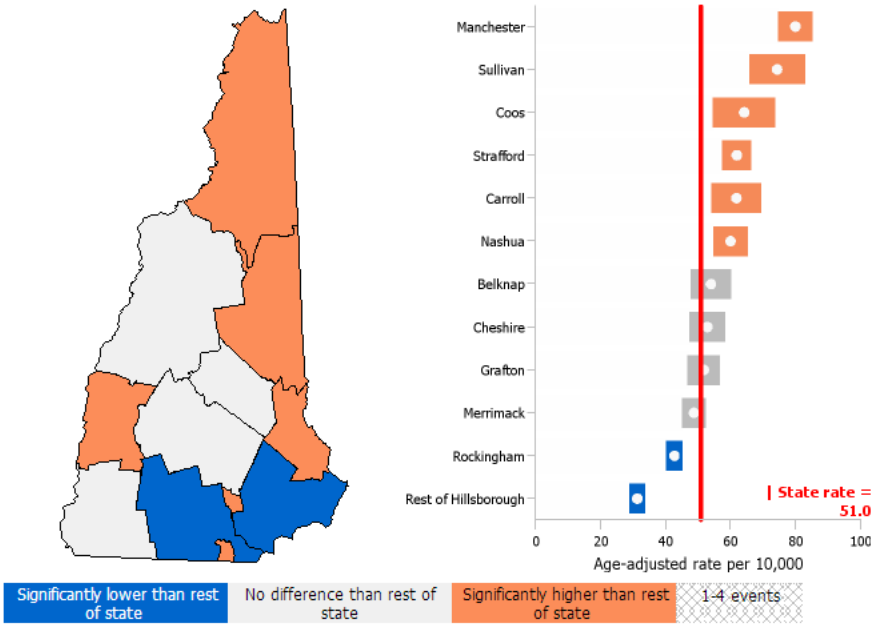
Table 5.5 Asthma Indicators

	Nashua	NH
Percent of adults with asthma (2010)	7.2% (4.2-10.2%)	10.1% (9.0-11.2)
Percent of children with asthma (2008)	10.2% (3.4-17.1%)	8.6% (7-10.1%)
Adults with asthma and are obese (2010)	26.3% (7.55-45.1%)	31.7% (26.5-36.9%)
Adults with asthma that smoke (2010)	7.2% (4.2-10.2%)	17.3% (13.2-21.4%)
Adults with asthma that received their influenza immunization (2010)	66.7% (45.7-87.8%)	56.2% (50.5-61.9%)
Adults with asthma that received their pneumonia vaccine (2010)	7.2% (4.2-10.2%)	10.1% (9-11.2%)

*Source: NH DHHS, BRFSS; *=data not available*

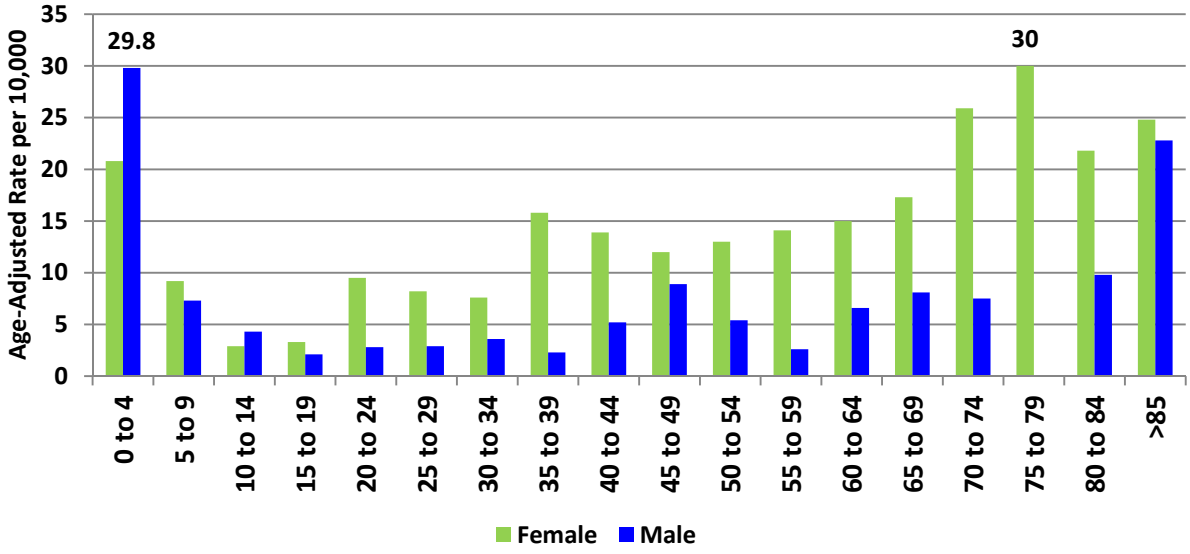
As shown in Figure 5.12, the rate of hospitalizations due to asthma in Nashua is higher than that seen in the state as a whole, while the rest of Hillsborough County enjoys a substantially lower hospitalization rate for asthma. The highest rates of hospitalizations are seen in children under four and adults over 65 years of age.

Figure 5.10 Asthma Hospitalizations, Age-Adjusted Rate, 2009



Source: NH DHHS, WISDOM

Figure 5.11 Asthma Hospitalizations by Age, GNPHR, 2005-2009



Source: NH DHHS

Level of Asthma Control in NH

In New Hampshire, nearly 1 in 3 children and 1 in 3 adults living with asthma are reported to have asthma that is not well controlled. Given the known effects on the economy and missed work and school days, this represents an area for both improvement in quality of life and cost savings.

Figure 5.14 Level of Asthma Control in Children, 2006-2008

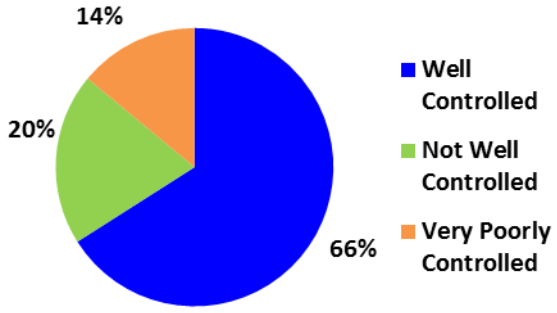
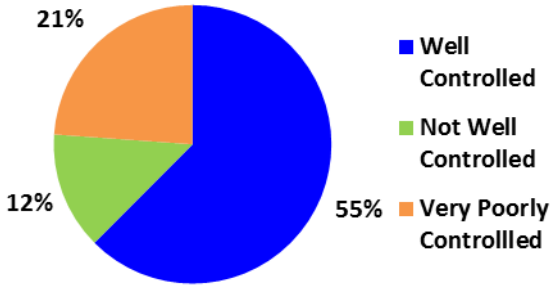


Figure 5.15 Level of Asthma Control in Adults, 2006-2008



Source: NH DHHS

Management of Asthma

Effective ways to manage asthma in the medical setting include:

- Teaching patients and families how to identify the signs and symptoms of asthma that is not well-controlled
- Teaching patients and families how to administer medications properly
- Teaching patients and families why control of asthma is so important
- Developing a written asthma action plan with primary or specialty care
- Regular medical follow-up visits
- Annual flu vaccines

In addition, because there are a number of triggers for asthma that are environmental, educational programs and policies that address these issues can reduce the number of asthma patients suffering acute symptoms. These programs address: [36]

- Reducing the exposure to tobacco smoke
- Reducing exposure to indoor air pollution
- Reducing dust mites in the home
- Reducing animal allergens
- Reducing cockroach antigen in the home
- Reducing indoor exposure to molds
- Avoiding exposure to solvents and other chemical irritants

Extensive recommendations regarding action steps to reduce the burden of asthma in New Hampshire have already been made in the New Hampshire State Asthma Plan, which can be found at http://www.dhhs.nh.gov/dphs/cdpc/asthma/documents/state-plan.pdf.[37]

Conclusion

Despite improvements in the rates of screening for blood pressure and high cholesterol and reductions in deaths from heart disease and stability in death rates from stroke, these conditions continue to affect the health of numerous New Hampshire residents. Furthermore, the rising epidemic of diabetes threatens to reverse these gains at ever growing costs. Although largely non-fatal, asthma remains a significant burden for both adults and children living in New Hampshire, in terms of quality of life and the disruption of every day school and work activities. It is paramount, and indeed a matter of pure sustainability, that New Hampshire and the United States focus efforts on both the treatment and more importantly the prevention of these diseases.

Source: Nashua PAL

Community Spotlight on Lyndeborough: Trails Association

In October 2008, a group of Lyndeborough citizens created the Lyndeborough Trails Association in order to increase outdoor recreational opportunities for families in the town and subsequently, encourage a greater sense of community. The mission of the LTA is to identify, develop and maintain a system of trails for non-motorized recreational use throughout Lyndeborough that will connect to the existing trail networks in surrounding communities. Since its creation, the LTA has completed the first half of its planned Cross Lyndeborough Trail (CLT), which is planned to span from the southwest corner of the town to the corner at High Bridge. In Phase I, the LTA worked to connect historic Lyndeborough Center with Putnam Hill through the construction of a multi-use bridge and maintenance of trails. Currently, the Lyndeborough Trails Association is working on implementing Phase II of the CLT, the High Bridge Restoration Project.

LYNDEBOROUGH Trails Association

Community Spotlight on Hollis: Parks Project

The Hollis Parks Project is a group of citizens committed to fostering community connections and providing quality recreation opportunities for all. In June of 2013, a group of community members saw the need for enhanced and improved spaces for citizens of all ages in two widely used community outdoor areas, Big Nichols Field and Little Nichols Field. The group found that when kids were occupied and happily engaged on playgrounds, it provided the opportunity for parents to connect and establish friendships with one another that build a "community connection." Rather than stay within Hollis, many families tended to travel to different towns for playgrounds, taking the "community connection" with them. Thus, the Hollis Parks Project was born. Empowered by the concept that "playgrounds build community," the Hollis Parks Project is a grassroots effort to raise money and donations to install, repair, and enhance the grounds with new playground equipment, picnic tables, and granite bench seating. The group believes that having a vibrant park with engaging equipment and additional seating means that citizens young and old will have more opportunity to be outside, enjoying nature. The project has collaborated with the Hollis Recreation Commission and other local groups to envision improvements for both Big Nichols Field and Little Nichols field. With a force of 5 committee members and over 30 volunteers, the Hollis Parks Project aims to continue to be a steward of open space and free recreation for the Hollis community for many years to come.

[1] Heron MP, Hoyert DL, Murphy SL, et al. Deaths: Final data for 2006. Natl Vital Stat Rep. 2009; 57(14). Hyattsville, MD: National Center for Health Statistics.

[2] Bureau of Public Health Statistics and Informatics. (2014). *Vital Records*. Concord, NH: NH DHHS.

[3] New Hampshire: Burden of Chronic Diseases. Centers for Disease Control and Prevention. Retrieved on August 13, 2014 from www.cdc.gov/chronicdisease/states/pdf/new_hampshire.pdf.

[4] Bureau of Health Statistics and Data Management. (2012). New Hampshire Behavioral Risk Factor Surveillance System Data. Concord, NH: New Hampshire Department of Health and Human Services, 2012.

[5] DeVol, Ross, and Armen Bedroussian, *An Unhealthy America: The Economic Burden of Chronic Disease*, Milken Institute, October 2007.

[6] American Heart Association. Heart Disease and Stroke Statistics—2014 Update. AHA Statistical Update Web site. Retrieved on August 2, 2014 from http://circ.ahajournals.org/content/early/2013/12/18/01.cir.0000441139.02102.80.full.pdf.

[7] American College of Preventive Medicine: Physicians Dedicated to Prevention. Lifestyle Medicine Literature. 2014. Retrieved from www.acpm.org/resource/resmgr/lmi.../lifestylemedicine-literature.pdf.

[8] Earl S. Ford; Manuela M. Bergmann; Janine Kroger; Anja Schienkiewitz; Cornelia Weikert; Heiner Boeing. Healthy Living Is the Best Revenge: Findings From the European Prospective Investigation Into Cancer and Nutrition-Potsdam Study. *Arch Intern Med.*, 2009; 169 (15): 1355-1362.

[9] United States Department of Health and Human Services, Centers for Disease Control and Prevention. Prevalence of Coronary Heart Disease --- United States, 2006—2010. MMWR. October 14, 2011. 60(40);1377-1381. Retrieved on August 8, 2014 from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6040a1.htm.

[10] Ten Great Public Health Achievements --- United States, 2001—2010. MMWR May 20, 2011. 60(19);619-623. Retrieved on August 3, 2014 from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6019a5.htm.

[11] QuickStats: Number of Deaths from 10 Leading Causes — National Vital Statistics System, United States, 2010. MMWR March 1, 2013 / 62(08);155. Retrieved on August 3, 2014 from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6208a8.htm.

[12] Heidenreich PA, Trogdon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. Circulation. 2011; 123:933-44. Epub 2011 Jan 24.

[13] Roger VL, Go AS, Lloyd-Jones DM, Benjamin EJ, Berry JD, Borden WB, et al. Heart disease and stroke statistics—2012 update: a report from the American Heart Association. *Circulation*. 2012; 125(1):e2–220.

[14] United States Department of Health and Human Services, Centers for Disease Control and Prevention. "Healthy People 2020 Leading Health Indicators". May 2014. Retrieved on August 2, 2014 from http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=21.

[15] New Hampshire Division of Public Health Services. Department of Health and Human Services. "New Hampshire State Health Improvement Plan, 2013-2020: Charting a Course to Improve the Health of New Hampshire". October 2013.

[16] United States Department of Health and Human Services, Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System, 2011.

[17] Centers for Disease Control and Prevention. Vital signs: awareness and treatment of uncontrolled hypertension among adults—United States, 2003–2010. *MMWR*. 2012;61(35):703–9.

[18] Prevalence of Hypertension and Controlled Hypertension — United States, 2007–2010. MMR Supplements. November 22, 2013 / 62(03);144-148. Retrieved on August 18, 2014 from http://www.cdc.gov/mmwr/preview/mmwrhtml/su6203a24.htm.

[19] City of Nashua, Community Health Assessment Data Subcommittee, personal communications.

[20] Centers for Disease Control and Prevention. Vital signs: awareness and treatment of uncontrolled hypertension among adults—United States, 2003–2010. *MMWR*. 2012;61(35):703–9.

[21] Heidenreich PA, Trogdon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. Circulation. 2011;123:933-44. Epub 2011 Jan 24.

[22] United States Department of Health and Human Services, Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System 2010.

[23] Bureau of Public Health Statistics and Informatics. (2009). *Emergency Department and Hospitalizations Database*. Concord, NH: NH DHHS.

[24] Centers for Disease Control and Prevention. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2011.

[25] National Diabetes Statistics Report, 2014. Retrieved on August 8, 2014 from www.cdc.gov/diabetes/.../statsreport14/national-diabetes-report-web.pdf.

[26] Bureau of Health Statistics and Data Management. (2011). New Hampshire Behavioral Risk Factor Surveillance System Data. Concord, NH: New Hampshire Department of Health and Human Services, 2011.

[27] American Diabetes Association. Economic Costs of Diabetes in the U.S. in 2012. *Diabetes Care.* April 2013 36:1033-1046. Retrieved on August 2, 2014 from http://www.diabetes.org/advocacy/news-events/cost-of-diabetes.html.

[29] Canadian Institute for Health Information (CIHI). Health indicators 2013: definitions, data sources and rationale. "Ambulatory care sensitive conditions: age-standardized acute care hospitalization rate for conditions where appropriate ambulatory care prevents or reduces the need for admission to the hospital per 100,000 population younger than age 75 years". Ottawa (ON): Canadian Institute for Health Information (CIHI);89; May 2013.

[30] United States Department of health and Human Services, Centers for Disease Control and Prevention. Press Release "More than 29 million Americans have diabetes; 1 in 4 doesn't know" Published June 10, 2014. Retrieved August 18, 2014 from http://www.cdc.gov/media/releases/2014/p0610-diabetes-report.html.

[31] Awareness of Prediabetes — United States, 2005–2010. MMWR March 22, 2013 / 62(11);209-212. Retrieved on August 3, 2014 from http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6211a4.htm.

[32] United States Department of Health and Human Services, Centers for Disease Control and Prevention, Asthma Data, Statistics, and Surveillance. Retrieved on August 3, 2014 from http://www.cdc.gov/asthma/asthmadata.htm.

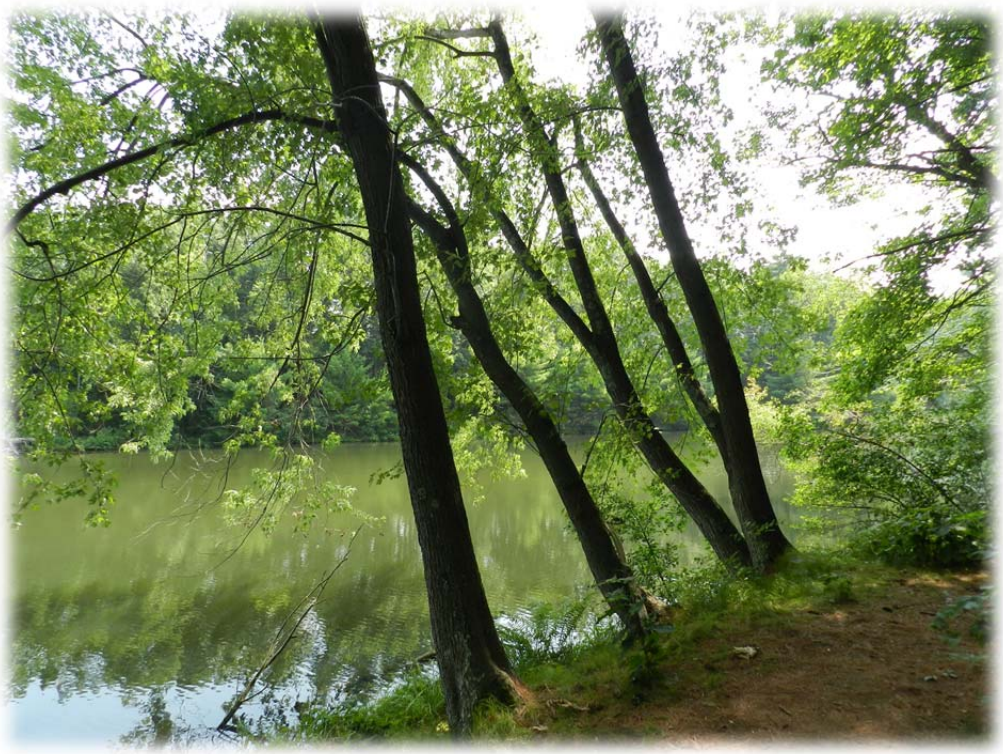
[33] Asthma and Obesity in New Hampshire Issue Brief, March 2013. Retrieved on August 2, 2014 from http://www.dhhs.state.nh.us/dphs/cdpc/asthma/documents/briefobesity2013.pdf. Accessed 8/2/14.

[34] United States Department of Health and Human Services, Centers for Disease Control and Prevention, Asthma, Asthma Fact Sheet. December 2012. Retrieved on August 2, 2014 from www.cdc.gov/asthma/impacts_nation/asthmafactsheet.pdf.

[35] Sierra Club. Fact Sheet: Prevalence and Cost of Asthma in New Hampshire. Retrieved on August 2, 2014 from http://action.sierraclub.org/site/DocServer/NH_state_fact_sheet_1_.pdf.

[36] Environmental Management of Pediatric Asthma. Guidelines for Health Care Providers. August 2005. Retrieved on 8/3/14 from http://www.neefusa.org/health/asthma/asthmaguidelines.htm.

[37] New Hampshire State Asthma Plan, 2009-2014. 2011. Retrieved on August 2, 2014 from: www.dhhs.nh.gov/dphs/cdpc/asthma/documents/state-plan.pdf.



"The physical and emotional health of an entire generation and the economic health and security of our nation is at stake."

- First Lady Michelle Obama at the Let's Move! launch on February 9, 2010

Weight Management, Physical Activity and Nutrition

Contents

Maintaining a healthy body weight through proper nutrition and regular physical activity can help decrease a person's risk of developing serious health conditions such as high blood pressure, high cholesterol, diabetes, heart disease, stroke, and cancer. [1] These activities can have a positive impact on overall well-being through better management of existing health conditions and improved quality of life.[1] A number of factors, such as access to healthy foods and safe places to engage in physical activity, affect a person's ability to eat a healthy diet, stay physically active, and achieve or maintain a healthy weight. [2] Healthy People 2020 (HP2020) is a program of the US Department of Health and Human Services and the vision for Healthy People 2020 is, "A society in which all people live long, healthy lives". For three decades, Healthy People has set 10-year national objectives for improving the health of Americans. There are several HP2020 health topic indicators regarding nutrition, physical activity, and obesity that will be described in this chapter.

Lifestyle and behavioral changes in the United States over the past several decades (increased sedentariness, increased time in front of a screen, lack of walkability in neighborhoods, larger portion sizes, and increased consumption of processed foods, etc.), have led to substantial increases in obesity. About one in three adults and one in six children are obese.[3] These rates have doubled for adults and tripled for children between 1980 and 2008.[3] Although those with higher education and income have lower rates of obesity overall, the increases in obesity rates have been consistent regardless of age, sex, race, ethnicity, socioeconomic status, education level, or geographic region.[3,4] Obesity has some significant costs associated with it. According to the Centers for Disease Control and Prevention (CDC), "The estimated annual medical cost of obesity in the U.S. was $147 billion in 2008; the medical costs for people who are obese were $1,429 higher than those of normal weight."[5]

The State of New Hampshire mirrors the national average with 26% of adults and 18% of children being obese.[6] In comparison to the United States, New Hampshire has lower rates of obesity than other parts of the country, especially

Community Spotlight on Mont Vernon: Lamson Farm

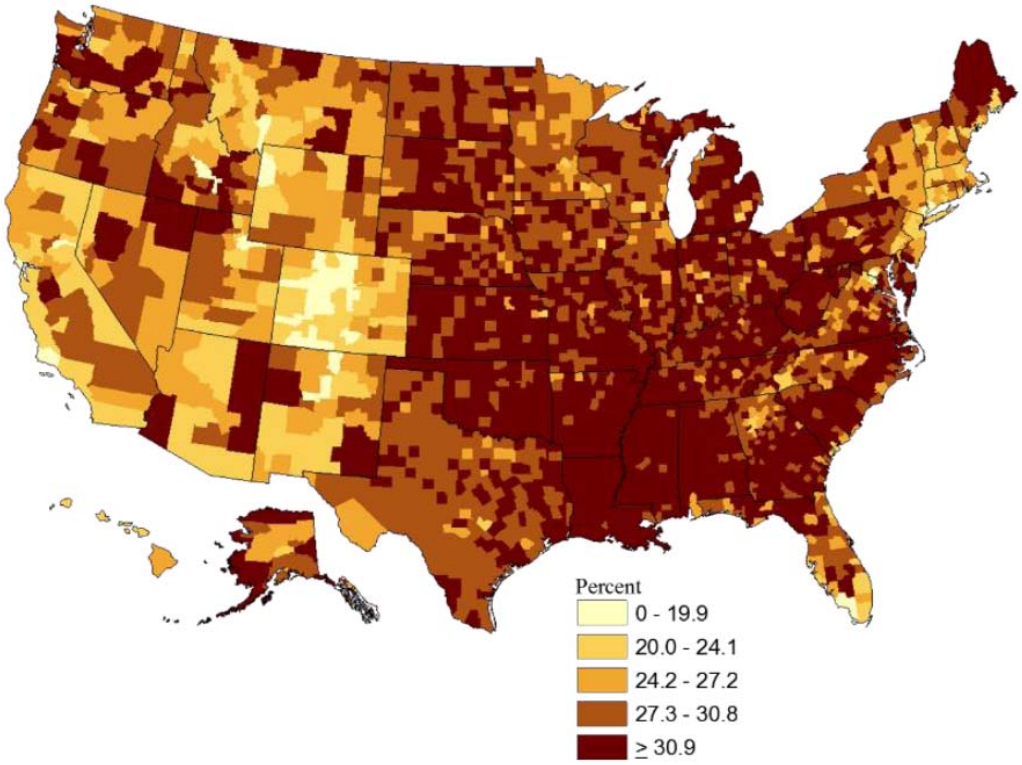
The Lamson Farm is a working, town-owned farm house and museum at the north end of Lamson Road in Mont Vernon, NH. The farm no longer produces milk directly, but the hay is harvested by another farm in town that does produce milk. The process is mutually beneficial. Without harvesting, the hay fields would revert to brush fields with no economic benefit and limited recreational use within a few years. Other than the farm house and two acres, the remaining property is legally constrained to recreational use. The town of Mont Vernon purchased the property in order to provide recreational opportunities for residents and to preserve the rural character of the town. Trails for hiking, snowmobiling, cross country skiing and biking are all available.

compared to the southeast and Midwest (Figure 6.1).[14] In response, the New Hampshire State Health Improvement Plan, 2013-2020 aims to reduce both adult and childhood obesity. Childhood obesity and adult obesity were ranked state priority #1 and #3, respectively, using prioritization criteria in this report.[6]

Goals for New Hampshire:

- Reduce the proportion of adults considered obese from 25.5% (2010) to 24% by 2015 and 23% by 2020[6]
- Reduce the proportion of children considered obese from 18.1% (2008) to 17.2% by 2015 and 16.2% by 2020[6]

Figure 6.1 County-level Estimates of Obesity among Adults ages >20 years: United States 2011



Source: CDC, 2011

Weight Management

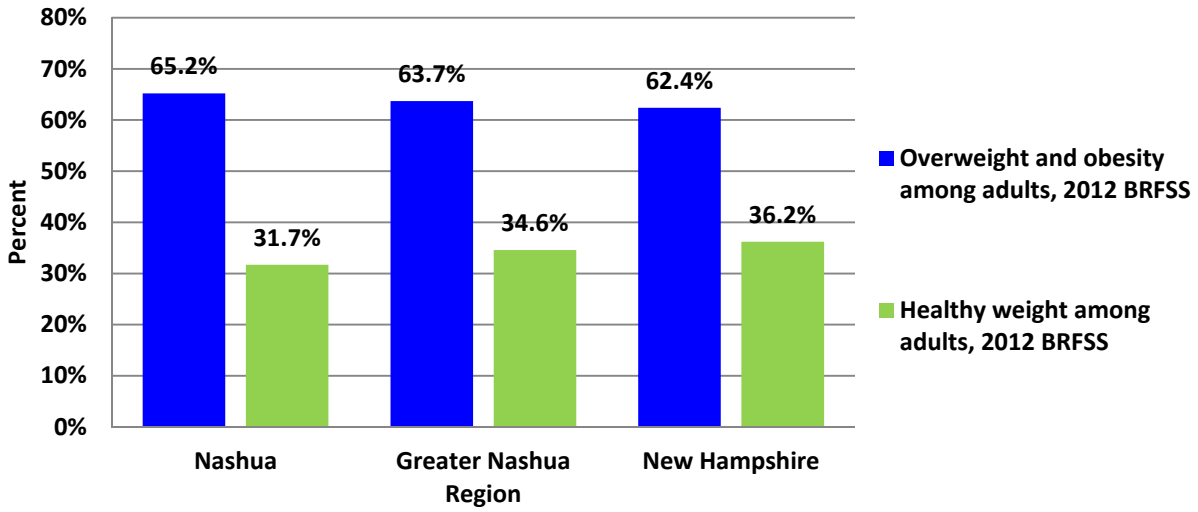
Obesity and overweight are associated with increased risk for several chronic diseases and conditions and have been on the forefront of prevention strategies over the past few years.[3] Progress in obesity management and prevention are being made by developing programs, systems, and environmental initiatives that help make healthy choices available, affordable, and easy.[3]

Overweight in adults is defined as a body mass index (BMI) of 25 or higher and obesity is definite as a BMI of 30 or higher. BMI is a number calculated from a person's weight in relation to their height. BMI in children is also measured by height and weight but CDC Growth Charts are used to determine the corresponding BMI for age and sex percentile. For children and adolescents (aged 2-19 years), overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile for children of the same age and sex. Obesity is defined as a BMI at or above the 95th percentile.[6]

Adults

The Healthy People 2020 goal is to reduce national obesity from 35.3% to 30.5% for adults ages 20 years and older. In NH, the New Hampshire State Health Improvement Plan has a goal to reduce it to 20% by 2020.[1] In the Greater Nashua Public Health Region (GNPHR), 26.6% (CI 23.1-30.1%) of adults over 18 years of age are obese and 63.7% (59.6-67.7%) are obese or overweight. In Nashua, 23.7% (CI 18.4-29%) of adults over 18 years of age are obese and 65.2% (CI 58.8-71.5%) are obese or overweight (Figure 6.2). According to these data, the GNPHR and Nashua meet the Healthy People 2020 goal but do not meet the SHIP 2020 goal (Table 6.1).[7]

Figure 6.2 Overweight and Obesity in Adults by Geography, 2012



Source: NH DHHS

Table 6.1 Weight by Geography, 2012

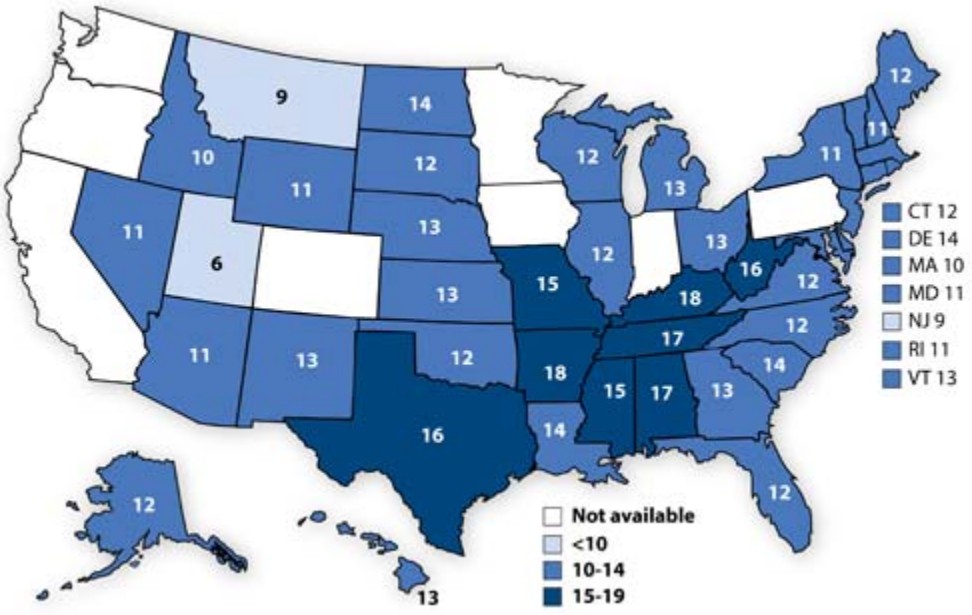
	Nashua	GNPHR	NH	HP2020 Goal	SHIP Goal (2020)
Obese	23.7% (CI 18.4-29%)	26.6% (CI 23.1-30.1%)	27.6% (CI 26.1-29.1%)	30.5%	20%
Overweight	41.5%*	37.1%*	34.8%*	N/A	N/A
Healthy Weight	31.7% (CI 25.6-37.9%)	34.6% (CI 30.6-38.6%)	36.2% (CI 34.5-37.8%)	N/A	N/A

*Source: NH DHHS; *=Confidence Intervals were not calculated*

Adolescents

When children transition from childhood to adulthood, important behavioral and lifestyle choices are established. These choices can impact their health as a teenager and into their adult life. Some adolescents also struggle to adopt behaviors that could decrease their risk of developing chronic diseases in adulthood, such as eating nutritiously and engaging in physical activity.[8] At the national level, 17.9% of adolescents aged 12 to 19 years were considered obese in 2005–08. The HP2020 goal is 16.1%, requiring a two percent decrease in adolescent obesity to reach this objective.[9] Figure 6.3 highlights the percent of high school students who were obese in 2013, with New Hampshire at 11%. In the 2013 YRBS, Nashua students self-reported their weight status as follows, 12% obese, 17% overweight, 68% average weight, and 3% underweight. According to these self-reported weight statuses, Nashua meets the HP2020 goal (Table 6.2).

Figure 6.3 Percentage of high school students who were obese - selected U.S. states, YRBS, 2013



Source: Youth Risk Behavior Survey, 2013

The 2013 Youth Risk Behavior Survey (YRBS), surveying students in grades 9-12, reported that 47% of students completing the survey in the GNPHR (n=7927) are trying to lose weight. [9] In New Hampshire 50.9% of high school students and 45.5% of Nashua high school students reported that they were trying to lose weight. [9] Gender differences exist where 68% of females and 34.4% of males reported trying to lose weight in Nashua.[9] The percentage of students in New Hampshire and Nashua that reported exercising in the past 30 days to lose or maintain weight is 63.2% and 67.1%.[9]

Table 6.2 Youth Risk Behavior Survey (YRBS) Indicators by Geography, 2013

	Nashua North	Nashua South	GNPHR	NH	HP2020 Goal
Obese	12%	12%	*	11.2%	16.1%
Trying to lose weight	48.9%	52.6%	47%	45.4%	*
Exercising to lose or maintain weight	68.3%	66.1%	65.2%	63.2%	*

*Source: NH DHHS; * = data not available*

Youth

Childhood obesity increases the risk for several chronic diseases including type II diabetes, high blood pressure, liver disease and depression during childhood as well as adulthood. The problem of childhood obesity has increased significantly during recent years. The percentage of children ages 6–11 years in the United States who were obese increased from 7% in 1980 to nearly 18% in 2012.[8] The Healthy People 2020 goal aims to reduce the proportion of children ages 6 to 11 years old who are considered obese to 15.7% and the NH SHIP goal aims to reduce the proportion of children considered to be obese to 17.2% by 2015 and 16.2% by 2020.[1, 6]

The City of Nashua 2013-2014 Third Grade Survey was conducted between September 2013 and March 2014 in conjunction with the New Hampshire Third Grade Healthy Smiles Healthy Growth Survey. Height and weight assessments for all participating third grade students indicated that 17.4% of students were obese, 17.5% were overweight, 63.3% were normal weight, and 1.7% of students were underweight (Table 6.3). There were no statistically significant differences between BMI categories by sex. The City of Nashua has not met the Healthy People 2020 goal of reducing the proportion of 6 to 11 year olds that are considered obese to 15.7%.[1] The NH SHIP goal is to reduce the proportion of children considered obese from 18.1% to 17.2% by 2015 and Nashua is 0.2% away from reaching this goal but needs to continue efforts to reach the NH SHIP 2020 goal of 16.2%. Regional data for this health indicator is not available at this time.

Table 6.3 Overall (both males and females) age and gender, BMI categories, 2013

	Students overall (n = 821)	
Variable	***No.***	***Proportion***
Obese	143	17.4%
Overweight	144	17.5%
Normal weight	520	63.3%
Underweight	14	1.7%

Source: City of Nashua, Third Grade Survey; NH DHHS

Stratification by the FRL program participation at the school level indicated a statistically significant greater burden of obesity among students attending schools with a greater than 50% FRL participation than students attending schools with less than 50% FRL participation (Table 6.4, p=0.006).

Table 6.4 BMI Categories by the FRL Program Participation

Variable	Students in schools with <50% FRL participation (n = 509)		Students in schools with ≥50% FRL participation (n = 312)		P-value**
	No.	*Proportion*	*No.*	*Proportion*	
Obese	74	14.5%	69	22.1%	**0.006****
Not obese*	435	85.5%	243	77.9%	
Source: City of Nashua, Third Grade Survey; NH DHHS					

The City of Nashua 2013-2014 Third Grade Survey is available here:

http://bit.ly/NashuaHSHG.

Physical Activity

Regular physical activity is important for good health, and it's especially important if you're trying to lose weight or to maintain a healthy weight. In addition to maintaining a healthy weight, there are many benefits associated with physical activity. Physical activity also helps reduce high blood pressure, reduce risk for type II diabetes, heart attack, stroke, some cancers, osteoporosis, reduce arthritis pain and associated disability, and reduce symptoms of depression and anxiety.[10] Personal, social, economic, and environmental factors all play a role in physical activity levels among youth, adults, and older adults.

Physical activity includes both aerobic and muscle strengthening activities. Aerobic activities are physical activities in which people move their large muscles in a rhythmic manner for a sustained period.[11] Running, brisk walking, bicycling, playing basketball, dancing, and swimming are all examples of aerobic activities. Muscle-strengthening activities provide additional benefits such as increased bone strength and muscular fitness.[11]

Adults

Physical activity is an important behavioral and lifestyle choice. Adults who are physically active are healthier and less likely to develop many chronic diseases than adults who are inactive. They also have better fitness, including a healthier body size and composition.

The United States Department of Health and Human Services Physical Activity Guidelines suggest, "Adults gain most…health benefits when they do the equivalent of at least 150 minutes of moderate intensity aerobic physical activity (2 hours and 30 minutes) each week. Muscle-strengthening activities also provide health benefits and are an important part of an adult's overall physical activity plan." [12]

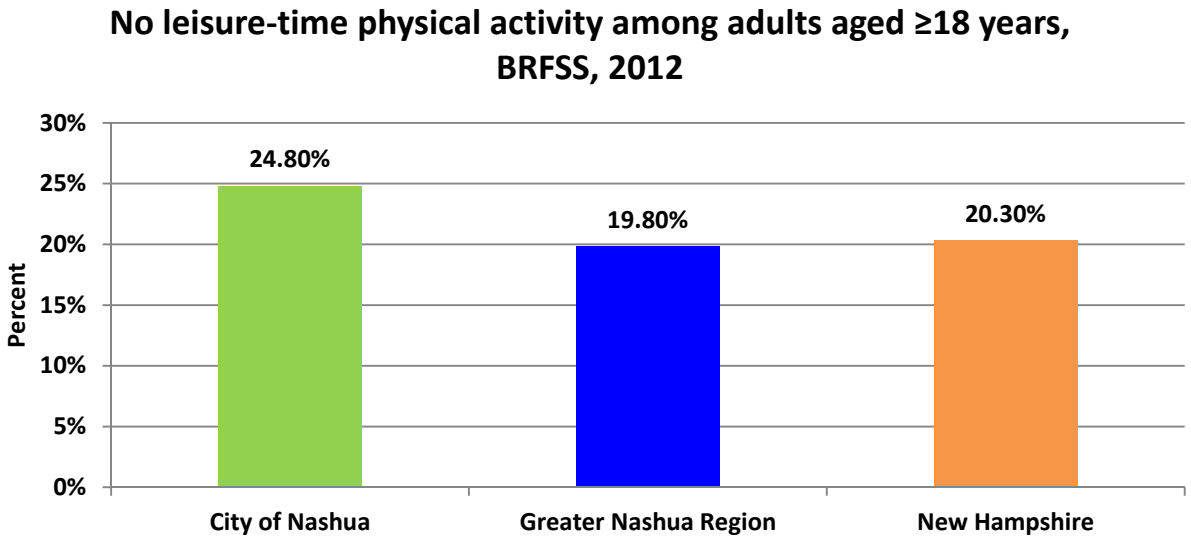
Physical activity for adults ages 18 and older includes aerobic physical activity and muscle strengthening. Between 2008 and 2012, the rate of adults meeting physical activity and muscle strengthening guidelines increased from 18.2% to 20.6%, nationally.[1] This increase exceeded the HP2020 target of 20.1%.[1] New Hampshire, GNPHR and the City of Nashua also have met this target, with rates of 22.6%(CI 21.1-24.1%), 22.9% (CI 19.3-26.6%) and 23.5% (CI 17.6-29.4%), respectively (Table 6.5).[7] Although these rates have increased in the past years, about 80% of adults still do not meet the guidelines for both aerobic and muscle-strengthening activities.

Table 6.5 Physical Activity Indicators for Adults, BRFSS, 2012

	Nashua	GNPHR	NH	HP2020 Goal
Meeting aerobic physical activity guidelines for substantial health benefits among adults aged ≥18 years	49.8% (CI 43-56.7%)	53.1% (CI 48.6-57.6%)	56.5% (CI 54.8-58.2%)	N/A
Meeting aerobic physical activity guidelines for substantial health benefits and for muscle-strengthening activity among adults aged ≥18 years	23.5% (CI 17.6-29.4%)	22.9% (CI 19.3-26.6%)	22.6% (CI 21.1-24.1%)	20.1%
Meeting aerobic physical activity guidelines for additional and more extensive health benefits among adults aged ≥18 years	25% (CI 19.5-30.5%)	28.7% (CI 24.7%-32.7%)	34.8% (CI 33.1-36.4%)	N/A
No leisure-time physical activity among adults aged ≥18 years	24.8% (CI 19.0 – 30.5%)	19.8% (CI 16.6 – 23.1%)	20.30% (CI 19.0 – 21.6%)	32.6%
Source: NH DHHS				

As a part of maintaining a healthy lifestyle, it is important to live an active lifestyle. The HP2020 goal aims to reduce the proportion of adults that do not engage in leisure-time physical activity. The goal was to reduce this proportion to 32.6%. According to the BRFSS, Nashua, GNPHR, and the State of New Hampshire have exceeded this goal, with only 24.8% (CI 19.0-30.5%), 19.8% (CI 16.6-23.1%), and 20.30% (CI 19.0-21.6%), respectively, reporting they do not engage in leisure-time physical activity (Figure 6.4).

Figure 6.4 Physical Activity Among Adults, 2012



Source: NH DHHS

Adolescents

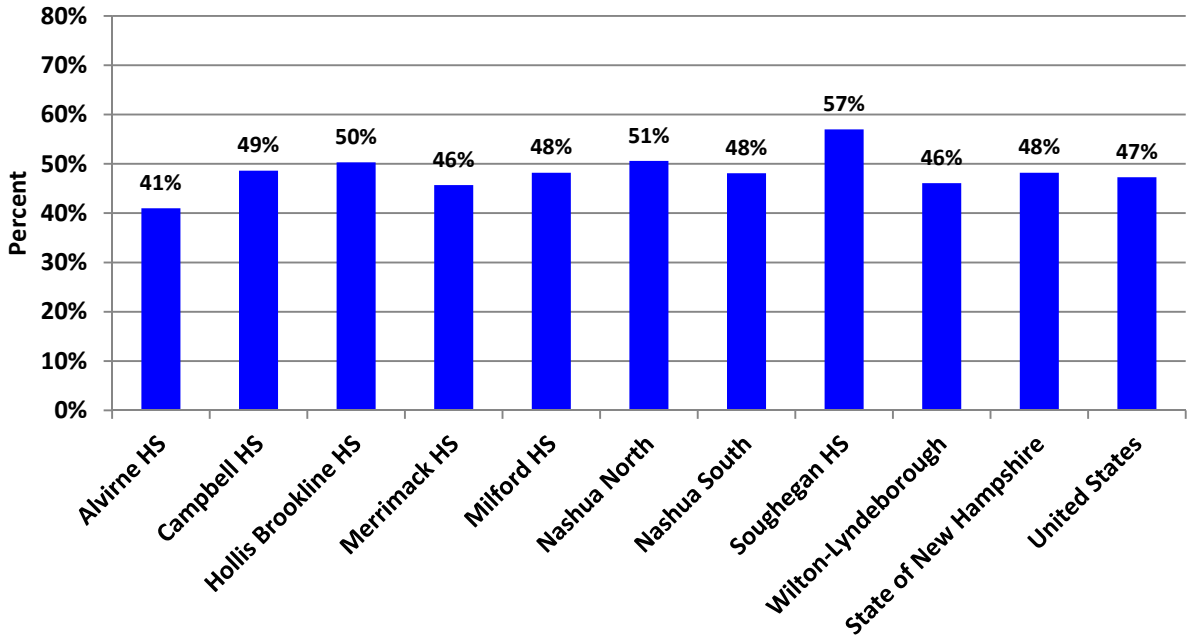
Regular physical activity in children and adolescents promotes health and fitness throughout the lifetime. Those who are regularly active in their youth have a better chance of a healthy adulthood and are less likely to develop risk factors for certain chronic diseases[11]. Physically active youth have higher levels of cardiorespiratory fitness, stronger muscles and bones, less body fat, and reduced symptoms of anxiety and depression when compared to their inactive peers[11]. According to the United States Department of Health and Human Services Physical Activity Guidelines, "Youth can achieve substantial health benefits by doing moderate- and vigorous-intensity physical activity for periods of time that add up to 60 minutes...or more each day. This activity should include aerobic activity as well as age-appropriate muscle- and bone–strengthening activities."[11]

Children and adolescents can meet the guidelines by doing activity that is appropriate for their age. During recess, and in their free playtime and games, children use basic aerobic and bone-strengthening activities, such as running, hopping, skipping, and jumping, to develop movement patterns and skills. [11] In 2009, the baseline for adolescents meeting current Federal physical activity guidelines was 18.4%.[1] The HP2020 goal is to increase this rate to 20.2%.[1] In addition to reaching the physical activity requirements, HP2020 aims to increase the proportion of the Nation's public and private schools requiring daily physical education[1]. The baseline for this measure was 3.8% (2006) and the goal is 4.2% for 2020.[1] In New Hampshire, daily physical education is not a requirement, however, one hundred

percent of New Hampshire's schools must provide physical education K-12. This is a requirement in the Minimum Standards for School Approval.

At the state level, 22.9% of adolescents are meeting the Federal physical activity guidelines which exceed the Healthy People 2020 goal of 20.2%. Among schools in the region, between 41% and 57% of students reported being active for 60 minutes or more on five of seven days. Eight schools reported rates higher than the national average of 47.3%. Seven schools reported rates that met or exceeded the state average of 48.2% where students reported engaging in physical activity for a total of at least 60 minutes per day on five or more days (Figure 6.5)[9]. Figure 6.5 provides an overview of responses from schools throughout the region.

Figure 6.5 Students Physically Active for at Least 60 Minutes per Day on 5 or more of the past 7 days, YRBS 2013



Source: Youth Risk Behavioral Survey

Physical education can increase adolescents' regularity of recommended physical activity each week. Nationwide, 48% of students reported attending one or more Physical Education (PE) classes on one or more days during an average week.[15] Males reported higher attendance of PE classes than females, 53.3% and 42.8%, respectively.[15] This difference was consistent across white, black and Hispanic male and female students, grades 9-12. The prevalence of having attended a PE class was higher among Hispanic (57.5%) than white (43.1%) students.[15] Higher prevalence of having attended a PE class among Hispanic students remains consistent when comparing gender as well. Additionally, the prevalence of students attending PE class consistently decrease as the grade level increased. Across the country, 9th grade students, male and female, reported higher PE attendance than their older peers. This trend was

consistent for all grades, where the younger students reported higher rates of PE attendance than their older peers.

For students from GNPHR, responses ranged from 27.0% of students at Milford High School reporting to attend one or more PE classes on an average week, to 47.5% at Wilton-Lyndeborough High School (Table 6.6). Similar to national rates, those in GNPHR and the state of New Hampshire are usually higher in 9th grade compared to 12th grade.

According to the Department of Education, each school's decision to provide PE on a daily basis depends on the number of students and teachers and how the schedule is arranged to assure that all students receive sequential and comprehensive physical education K-12. For high school, that translates to a minimum of 1 credit for the state HS graduation requirement. An explanation for this difference in PE rates and age may be due to PE requirements and each individual schools choice of electives for students in each grade. For example the school may require on year of PE so younger students may take this class earlier on in high school so additional elective opportunities are available as upperclassmen.

At this time, none of New Hampshire's schools require students to participate in PE on a daily basis. There is state guidance that schools should provide daily physical activity (before, after school playground time and/or recess or physical activity integrated into classroom instruction). All schools are to have a wellness policy, and guidance for wellness policy included daily physical activity. Physical activity is just that—while physical education is a planned program and curriculum taught by a certified PE teacher.

Table 6.6 Physical Education Classes by School District, YRBS, 2013

Percent Attending Physical Education Classes One or More Days					
	9th Grade	10th Grade	11th Grade	12th Grade	Overall
Alvirne HS	63.5%	48.2%	7.6%	5.3%	32.0%
Campbell HS	70.1%	34.0%	28.6%	37.6%	43.6%
Hollis-Brookline HS	99.4%	56.5%	12.8%	34.9%	49.6%
Merrimack HS	64.8%	15.9%	23.1%	22.9%	31.6%
Milford HS	71.4%	19.9%	8.6%	6.4%	27.0%
Nashua North	51.9%	55.0%	13.8%	14.0%	35.3%
Nashua South	51.6%	43.0%	10.8%	10.1%	29.6%
Souhegan HS	98.3%	62.5%	6.4%	5.1%	42.7%
Wilton-Lyndeborough	54.8%	38.0%	51.0%	47.1%	47.5%
GNPHR (ALL)	*	*	*	*	35.0%
State of NH	58.40%	42.80%	19.80%	19.10%	36.2%

Source: NH DHHS; Youth Risk Behavior Survey
** Data not available*

An important component to increasing physical activity among youth and adolescents is to decrease time spent in front of a screen. Screen time is a sedentary activity, meaning you are being physically inactive while sitting down. According to the Youth Risk Behavioral Survey, 41.3% of students nationwide played video or computer games or used a computer for non-school work for three or more hours per day on an average school day.[15] In addition, it was reported 32.5% of students watched television for three or more hours per day on an average school day.[15] The HP2020 goals aim to increase the proportion of children and adolescents who engage in screen time for no more than two hours each day from 75.1% in 2009 to 82.6% by 2020. "Screen time" includes any activity done in front of a screen, such as watching television or videos, playing video games, or using a computer for non-school work. In addition, the HP 2020 goal aims to increase the proportion of adolescents, grades 9-12, engaging in screen time no more than two hours a day (television, videos, video games) from 67.2% in 2009 to 73.9% by 2020.

Nutrition

Diet and body weight are related to health status. A healthy diet also helps Americans reduce their risks for many health conditions. The HP2020 objectives for nutrition emphasize the health benefits of eating a nutritious diet and maintaining a healthy body weight. According to the National Association of County & City Health Officials (NACCHO), those maintaining a healthy diet, "consume a variety of nutrient-dense foods within and across the food groups, especially whole grains, fruits, vegetables, low-fat or fat-free milk or milk products, and lean meats and other protein sources"[1]. It is import to limit caloric intake to what is needed daily and limit the intake of saturated and trans-fats, cholesterol, added sugars, sodium and alcohol[1].

Between 2001–2004 and 2007–2010, the mean daily intake by persons aged 2 and older was unchanged at 0.8

Community Spotlight on Merrimack: Town Center

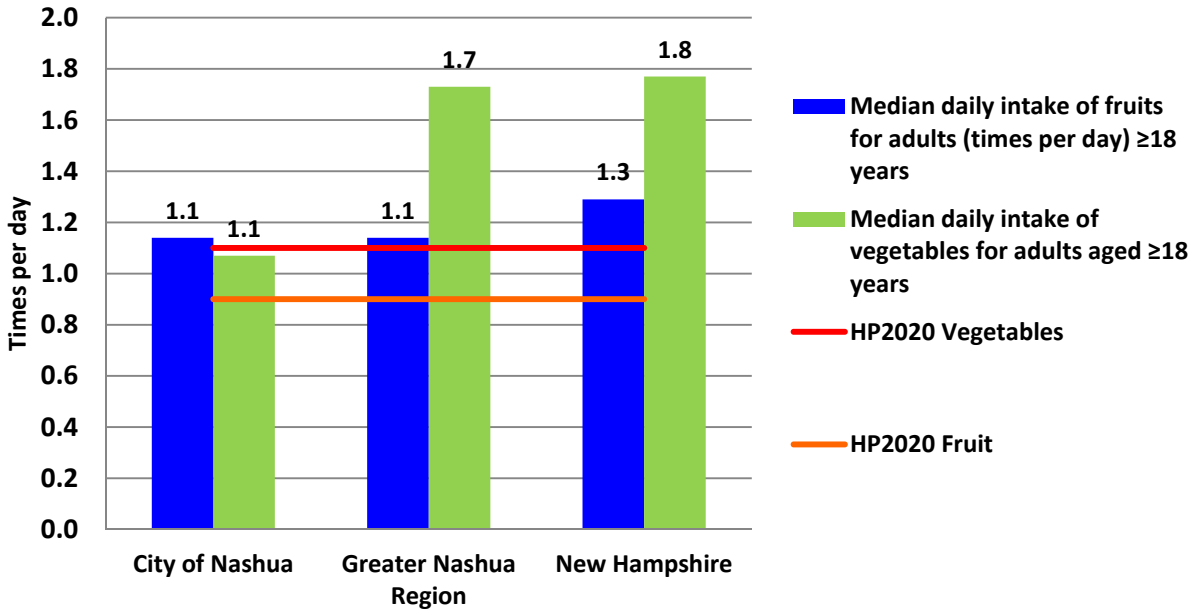
For the past 55 years, the Nashua Regional Planning Commission (NRPC), located in Merrimack, NH has provided its 13 member communities with an array of professional planning services including transportation, land use and environmental planning, as well as data analysis and mapping. In 2009, NRPC worked with the Town of Merrimack to develop a Town Center Pedestrian and Trail Master Plan. This Master Plan identified missing links to create a fully connected system of sidewalks and trails throughout the Town Center. Once in place, this well-developed sidewalk and trail system will provide residents with an alternative transportation mode to access local parks, retail establishments and schools, all while promoting a healthy lifestyle.

cup equivalents of total vegetables per 1,000 calories (age adjusted). [1] The Healthy People 2020 target is 1.1 cup of vegetables equivalents per 1,000 calories.[1] Between 2001-2004, the mean daily intake by persons 2 and older was 0.5 cup equivalent of fruits per 1,000 calories (age adjusted to the year 2000 standard population)[1]. The HP 2020 goal is 0.9 cup equivalent per 1,000 calories[1].

Adults and Adolescents

According to 2012 BRFSS, the State of New Hampshire and the GNPHR exceed the HP 2020 goal for both intake of fruit (0.9 times per day) and vegetables (1.1 times per day) for adults aged ≥18 years. The City of Nashua and GNPHR meet the goals for fruit and vegetable consumption among adults aged ≥18 years (Figure 6.6).

Figure 6.6 Median Daily Fruit and Vegetable Consumption for Adults Aged ≥18 years, 2012



Source: CDC, BRFSS

Good nutrition is important to the growth and development of children. Soda has no nutritional value, adds calories to the diet and increases the occurrence of cavities. Table 6.7 shows the percentage of students drinking soda one or more times during the past week, based on student responses to the YRBS, 2013. Males at each school represented in table 6.7 and throughout the GNPHR reported higher rates of drinking soda one or more time during the week compared to their female peers. The national rate for drinking soda one or more times during the past week is 27%.[15] The GNPHR average

Nashua and the GNPHR meet the Healthy People 2020 goals for fruit and vegetable consumption among adults aged ≥18 years!

for drinking soda one or more times during the past week is 9.8%, about one-third of the national rate.

Table 6.7 Percent of Students that Drank Soda One or More Times in the Past Week, 2013.

Percent of Students that Drank Soda One or More Times in the Past Week, 2013			
	Female	**Male**	**Overall**
Alvirne HS	7.4%	11.6%	9.9%
Campbell HS	6.7%	14.8%	10.6%
Hollis-Brookline HS	5.7%	8.9%	7.4%
Merrimack HS	5.0%	16.0%	10.8%
Milford HS	8.9%	12.9%	11.1%
Nashua North	7.5%	14.9%	11.2%
Nashua South	7.9%	14.4%	11.1%
Souhegan HS	3.7%	10.6%	7.4%
Wilton-Lyndeborough	5.1%	7.7%	6.2%
GNPHR	*	*	9.8%

Source: NH DHHS; YRBS
** Data not available*

Environmental factors can affect behavior choices around food and beverage. For example, as schools, workplaces, and communities start removing sugar sweetened beverages as an option for refreshment, both adults and children may have be less tempted to indulge in the higher calorie sugar sweetened beverage. Another example for improving general behavior around food and beverage choice could be increased access to wholesome fruits and vegetables. If healthier choices are available and at an equivalent price point, it may help individuals and families make healthier choices when food shopping.

Conclusion

Weight status of adults, adolescents and children is impacted by activity levels as well as diet. An unhealthy weight status can be the result of a poor diet, lack of physical activity or a combination of both. A number of chronic conditions are associated with weight status and can reduce quality of life. There are no simple solutions to America's growing waist lines, but small changes made in diets, daily routines, or in the neighborhoods we live in can improve health, including weight status, over time. This summary of weight status, physical activity and nutrition can inform where priorities may need to focus and perhaps help to define what small changes could have an impact in the GNPHR.

[1]United States Department of Health and Human Services, Centers for Disease Control and Prevention. "Healthy People 2020 Leading Health Indicators: Nutrition, Physical Activity, and Obesity". May 2014. http://www.healthypeople.gov/2020/LHI/HP2020_LHI_Nut_PhysActiv.pdf. Retrieved, 6/9/2014.

[2]United States Department of Health and Human Services, Centers for Disease Control and Prevention. "Nutrition, Physical Activity, and Obesity Leading Health Indicators - Healthy People 2020". June 18, 2014. http://www.healthypeople.gov/2020/LHI/nutrition.aspx?tab=determinants. Retrieved 6/18/2014.

[3]National Association of County and City Health Officials (NACCHO). "Obesity Prevention/Physical Activity/Nutrition". 2014. http://www.naccho.org/topics/HPDP/chronicdisease/oppan.cfm. Retrieved 6/9/2014.

[4]United States Department of Health and Human Services, Centers for Disease Control and Prevention. National Center for Health Statistics. "Higher education and income levels keys to better health, according to annual report on nation's health". Press Release. February 8, 2012. http://www.cdc.gov/media/releases/2012/p0516_higher_education.html. Retrieved 6/9/2014.

[5]United States Department of Health and Human Services, Centers for Disease Control and Prevention. "Adult Obesity Facts". March 28, 2014. http://www.cdc.gov/obesity/data/adult.html. Retrieved 6/9/2014.

[6]New Hampshire Division of Public Health Services. Department of Health and Human Services. "New Hampshire State Health Improvement Plan, 2013-2020: Charting a Course to Improve the Health of New Hampshire". October 2013.

[7]Bureau of Health Statistics and Data Management. (2012). New Hampshire Behavioral Risk Factor Surveillance System Data. Concord, NH: New Hampshire Department of Health and Human Services, 2012.

[8]United States Department of Health and Human Services, Centers for Disease Control and Prevention. Division of Adolescent and School Health. Updated April 30 2012. Retrieved 07/30/14 from http://www.cdc.gov/healthyyouth/adolescenthealth/.

[9]Bureau of Health Statistics and Data Management. (2013). New Hampshire Behavioral Risk Factor Surveillance System Data. Concord, NH: New Hampshire Department of Health and Human Services, 2013.

[10]United States Department of Health and Human Services, Centers for Disease Control and Prevention. Division of Nutrition, Physical Activity and Obesity. Updated September 13 2011. Retrieved 7/30/14 from http://www.cdc.gov/healthyweight/physical_activity/index.html.

[11]United States Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Physical Activity Guidelines, Chapter Three "Active Children and Adolescents". Updated on July 30 2014. Retrieved on 7/30/14 from http://www.health.gov/paguidelines/guidelines/chapter3.aspx.

[12]United States Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Physical Activity Guidelines, Chapter Four "Active Adults". Updated on July 30 2014. Retrieved on 7/30/14 from http://www.health.gov/paguidelines/guidelines/chapter4.aspx.

[13]Community Health Institute. Greater Nashua Community Health Assessment, Focus Group Summary Report. May 2014.

[14]United States Department of Health and Human Services, Centers for Disease Control and Prevention. County-level Estimates of Obesity among Adults aged ≥ 20 years old, Trend 2005 – 2011, 2011. Retrieved on 8/7/14 from: http://www.cdc.gov/diabetes/atlas/countydata/Obesity_Prevalence.pdf

[15]United States Department of Health and Human Services, Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. Surveillance Summaries, Volumn 63, Number 4. Youth Risk Surveillance – United States, 2013. June 13, 2014.

Community Spotlight for Litchfield: Albuquerque Avenue

Litchfield's Albuquerque Avenue gently winds on a north-south axis through the center of the Town. Nearly 70% of the Town's 8200 residents live within a five to ten minute walk of Albuquerque. In 2007, Litchfield secured funding to construct an eight foot wide pedestrian path/bikeway along this two mile corridor. This path leveraged available ARRA funds of approximately $470,000 and $18,500 of local money for design and construction. Since its completion in 2010, the Albuquerque Bike Path has become a valuable community asset.

Throughout the day, this path sees a wide range of users early morning joggers, dog walkers, students walking to Campbell High School (located along the path) and evening strollers. Given its proximity to the majority of residences in Litchfield, it is easily incorporated into many residents' healthy routines.

"Antibiotic resistance is a worldwide problem. New forms of antibiotic resistance can cross international boundaries and spread between continents with ease. World health leaders have described antibiotic-resistant microorganisms as "nightmare bacteria" that "pose a catastrophic threat" to people in every country in the world."

- Antibiotic Resistance Threats, 2013, CDC

Microbial Threats

Contents

Healthcare Associated Infections

Healthcare-associated infections (HAIs) are among the greatest causes of preventable injuries and deaths in the United States. Every day about one in 25 hospital patients has at least one HAI and there were an estimated 722,000 HAIs in U.S. acute care hospitals in 2011. In this same year, about 75,000 hospital patients with HAIs died.[1] However, HAIs are not solely the result of receiving medical treatment in a hospital. Recent studies show an increase in the prevalence of HAIs that can be linked to outpatient care or treatment received in an assisted living facility or nursing home. Unfortunately, there is limited data available on the specific burden of HAIs that are acquired outside of the hospital. However, it is estimated that up to 3 million infections and 380,000 HAI related deaths occur each year in long term care facilities (LTCFs).[2] Agencies such as the Centers for Disease Control and Prevention and the Agency for Healthcare Research and Quality (AHRQ) note that current figures may actually underestimate the true impact of HAIs outside of the hospital setting. As a result of the significant and preventable burden to human life and the US healthcare system caused by HAIs, the U.S Department of Health and Human Services has identified the prevention and reduction of HAIs as a top priority.

In the 2013 HAI report by the NH DHHS, the data is presented as both standardized infection ratios (SIRs) and rates. SIRs allow for data to be aggregated across risk groups, procedures and hospitals, it does not give the infection rate but a comparison between how many infections occurred and how many were predicted to occur based on national data. In the state of New Hampshire, 2013 HAI rates were lower than predicted based on the national baseline with a SIR of 0.70 or 30% fewer infections than would be expected.[3] A total of 112 surgical site infections were reported in hospitals, with 13% (n=15) of those occurring in Nashua. This exceeds the HHS target of 0.75 (25% reduction in HAIs). SSIs however are still the most common HAI reported in the state of New Hampshire, accounting for 60% of reportable HAIs statewide. Other reportable HAIs in the state include central-line blood stream infections (CLABSI) and catheter-associated urinary tract infections (CAUTI). A total of 15 CLABSI cases were reported in 2013, 66% fewer than predicted. NH has not yet met the HP2020 goal of a 0.25 SIR for CLABSI, but holds a much lower SIR than the nation (SIR = 0.56). 56 CAUTI cases were reported statewide, 4% more than would be expected. In 2013, Nashua reported 2 cases of CAUTI and there were no reported incidences of CLABSI.

Table 7.1 Standardized Infection Ratios, US and NH

	C. difficile	CAUTI	SSI	CLABSI	MRSA	Overall HAI
2013 SIR Target	**0.70**	**0.75**	**0.75**	**0.50**	**0.75**	**0.60**
National 2012 SIR	**0.98**	**1.02**	**0.80**	**0.56**	**0.97**	*
NH 2013 SIR	*	**1.04**	**0.68**	**0.34**	*	**0.70**

*Data not Available

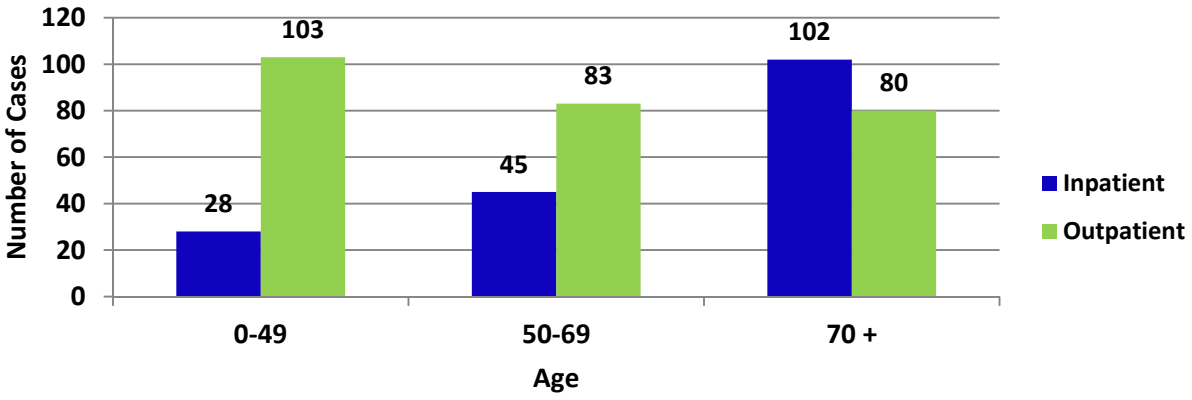
Source: US HHS, NH DHHS

Clostridium difficile

From 2005 to 2009, there were 426 deaths with intestinal infection due to *C. difficile* as an underlying or contributing cause in adults ages 55 and older.

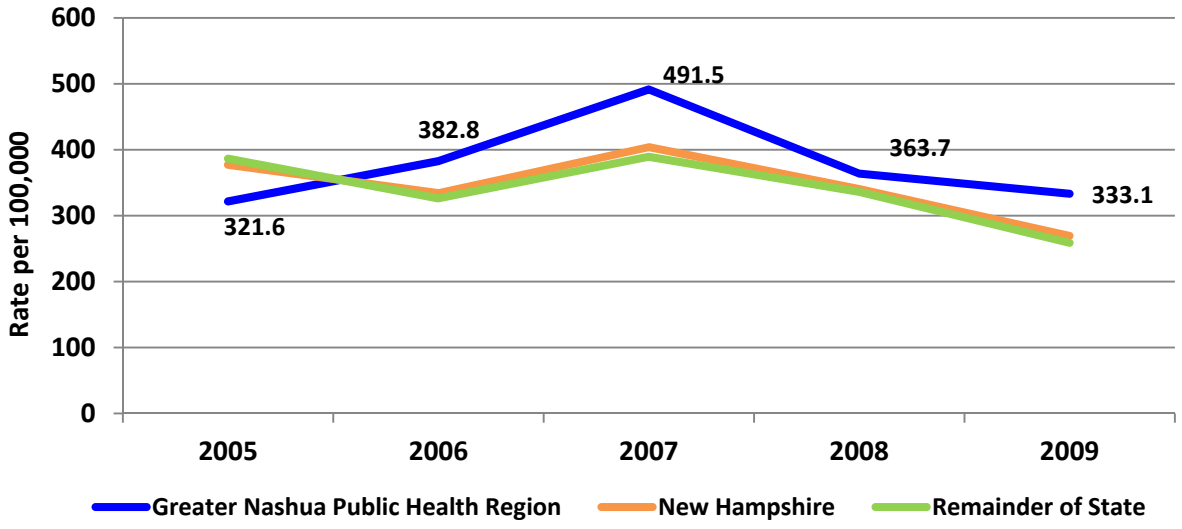
Although New Hampshire hospitals are only required to report cases of SSI, CAUTI, and CLABSI, there are other HAIs such as *Clostridium difficile*. When an individual takes certain antibiotics for a high or prolonged period of time, the normal bacterial flora of the gut is disrupted. If this individual is colonized or exposed to *Clostridium difficile* then they are at risk for developing illness. Patients can be exposed by the hands of a healthcare worker who cared for a *C. difficile* patient or a contaminated surface. *C. difficile* bacteria produce a toxin that is capable of causing diarrhea, kidney failure, sepsis and death. Risk of death is greatest in the elderly, with mortality rates having the potential to exceed 10%.[4] In 2000, a more virulent strain of *C. difficile* began to spread throughout the United States, triggering a 400% increase in *C. difficile* related deaths for the following seven years.[5] *Clostridium difficile* infection (CDI) is estimated to increase the length of hospital stay between 2.8 to 5.5 days and cost US hospitals upwards of $1 billion dollars each year.[6] In 2013, Nashua observed a total of 441 CDIs, with 70% occurring in individuals aged 50 and older (Figure 7.1). Although 40% of these cases occurred in hospitals (n=175), CDI cases with hospital onset accounted for only 50 cases. The majority of cases were observed in outpatient settings with individuals 50-59 and 70-79 experiencing the highest number of cases. The Association for Professionals in Infection Control and Epidemiology estimates that the average cost of inpatient CDI is approximately $35,000; meaning that 175 hospitalized cases of *C. difficile* cost the Nashua healthcare system over $6 million dollars in 2013. Furthermore, it is estimated that CDI recurs in at least 20% of cases even with appropriate treatment, which further increases the burden felt by both patients and healthcare providers.[7] In NH from 2005 to 2009, there were 426 deaths with intestinal infection due to *C. difficile* as an underlying or contributing cause in adults ages 55 and older.[28]

Figure 7.1 *Clostridium difficile* Cases, All Ages, Nashua, 2013



Source: Northeast Healthcare Quality Foundation, Greater Nashua C. difficile Collaborative

Figure 7.2 Inpatient Hospital Discharges, *Clostridium difficile*, Primary or Secondary Diagnosis, Ages 55 and Older



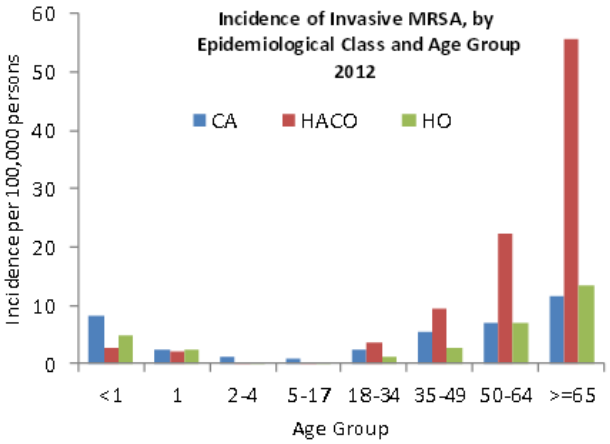
Source: NH DHHS

Methicillin Resistant *Staphylococcus aureus*

Of the 16% of all HAIs that are caused by multidrug resistant organisms, half are related to methicillin-resistant staphylococcus aureus, or MRSA.[8] In 2009, there were an estimated 94,000 invasive MRSA infections contributing to 18,000 deaths in the United States. Data from the National Healthcare Safety Network (NHSN) indicates that from 2009 to 2010, MRSA accounted for the following percentage of *S. aureus* related HAIs: 54.6% CLABSI, 58.7% CAUTI, and 43.7% of SSIs.[9] Patients with a MRSA related SSI have been reported to have a 3.4 greater risk of death and median healthcare costs that are almost twice as great as those with a methicillin susceptible *S. aureus* infection ($14,000 versus $7,600)[10]. The CDC reports that MRSA is still a large patient threat but rates of hospital onset invasive MRSA have declined 54% from 2005-2011.[11] As of 2012, individuals over 50 with healthcare-associated, community onset cases of MRSA have the greatest incidence of invasive disease, over double that of individuals of the same age with community acquired or hospital onset disease (Figure 7.3). The Society for Healthcare Epidemiology of America (SHEA) promotes recommendations for all acute care facilities, including conducting a MRSA risk assessment to identify the opportunity of transmission in the facility and educating staff, patients and families on MRSA and recommended precautions.

Figure 7.3 Invasive MRSA, US, 2012

Source: Active Bacterial Core Surveillance Report, 2012



The use of antibiotics, has improved the health outcomes of millions of individuals since the 1920s, but they carry some risk of adverse complications. When antibiotics are used inappropriately or for longer than necessary, the patient's risk of suffering an adverse event such as acquiring CDI, increases. The CDC estimates that up to half of all antibiotics are used incorrectly.[12] In LTCFs, there is a 50-70% likelihood that a resident will receive at least one course of antibiotics during a one year period.[13] Antibiotic resistant infections are estimated to cause a minimum of 2 million illnesses and 23,000 deaths in the U.S. each year and the threat continues to increase. The CDC is working with health departments and healthcare facilities to stress prevention and take actions such as preventing infections and the spread of infections in the healthcare system, tracking resistant bacteria, improving the use of antibiotics and promoting the development of new antibiotics. Aggressive action is needed to keep new resistance from developing and to prevent the resistance that already exists from spreading. [14]

As a patient, what can I do to prevent healthcare associated infections?

- **Talk to your doctor about your procedure(s) and if you have a catheter, ask if it is necessary each day. Ask your healthcare provider how they prevent surgical site infections and how you can prepare for surgery to reduce your infection risk.**
- **Wash your hands and make sure your healthcare providers wash their hands before touching you.**
- **Don't take antibiotics for viral infections and make sure your healthcare provider is checking to make sure the right antibiotic is prescribed.**
- **Know the signs and symptoms of infection and tell your healthcare provider.**
- **Tell your healthcare provider if you have 3 or more diarrhea episodes in 24 hours, especially if you are taking an antibiotic.**
- **Get vaccinated against the flu and other infections to avoid complications.**

For more information, visit the CDC website at http://www.cdc.gov/HAI/patientSafety/patient-safety.html.

Foodborne & Waterborne Diseases

About 1 in 6 people, or 48 million people, in the United States will get ill from a foodborne illness each year and there will be about 1,000 foodborne outbreaks in the United States every year. This causes 128,000 hospitalizations and 3,000 deaths as a result of foodborne diseases. There are 31 pathogens known to cause foodborne illness and if we reduce foodborne illness by 10%, we would keep 5 million

Americans from getting ill each year. One cause of foodborne illness, Salmonella, has caused more hospitalizations and deaths than any other type of pathogen and costs $365 million in direct medical costs annually. Poultry and eggs are the most commonly contaminated food items with Salmonella.[15] From 2009 to 2013 in Nashua, there were 58 cases of Salmonella. In the same time frame there were an additional 125 cases of foodborne and waterborne diseases (Table 7.1).[16] There are many ways to prevent foodborne and waterborne diseases including safe food handling, proper food storage and safe manufacturing practices. A CDC infographic explains these preventative measures in figure 7.4.[15]

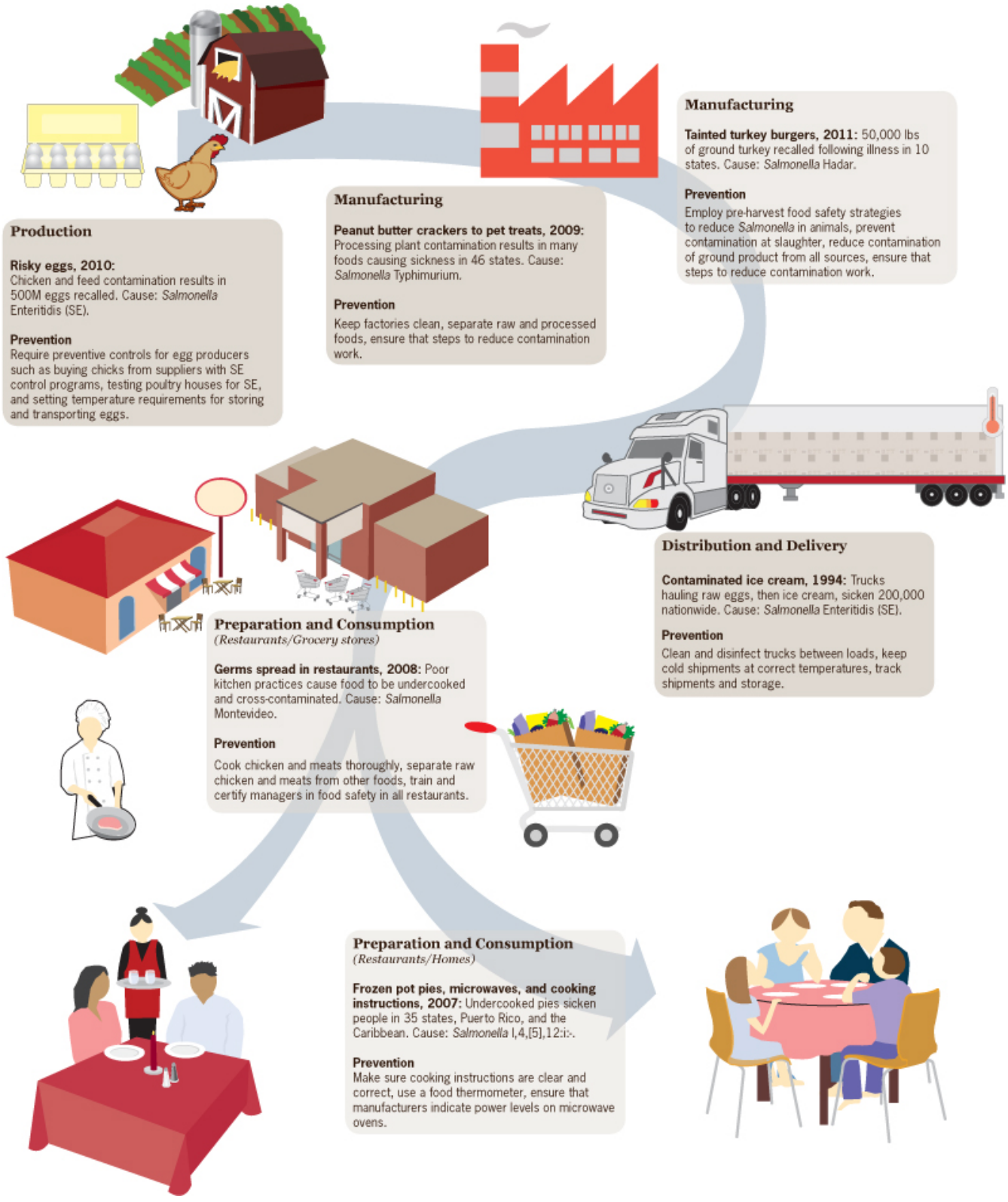
Table 7.1 Foodborne and Waterborne Diseases and Conditions in Nashua, 2009-2013

City of Nashua, NH					
Disease/Condition	**2009**	**2010**	**2011**	**2012**	**2013**
Campylobacteriosis	11	15	17	9	14
Cryptosporidiosis	6	3	2	1	1
Cyclospora Infection	0	0	0	0	0
***E. coli*, Shiga toxin**	0	1	2	1	2
Giardiasis	6	5	6	3	2
Hepatitis A	2	0	0	0	0
Listeriosis	0	1	0	0	0
Salmonellosis	16	11	11	8	12
Shigellosis	10	0	0	0	0
Vibriosis	1	0	0	1	1
Yersiniosis	1	0	0	1	0
Source: NH DHHS; City of Nashua DPHCS					

Figure 7.4 Preventing Foodborne Illnesses

Precautions to Prevent Illness

CLEAN: Wash your hands with soap and water before preparing food. Wash cutting boards, dishes, utensils (including knives), and counter tops with hot, soapy water *after* preparing *each* food item and *before* going on to the next food.
SEPARATE: Don't cross-contaminate one food with another.
COOK: meat, poultry and eggs thoroughly.
CHILL: Refrigerate leftovers promptly.
REPORT: Report suspected foodborne illnesses to the health department.


Production
Risky eggs, 2010:
Chicken and feed contamination results in 500M eggs recalled. Cause: Salmonella Enteritidis (SE).
Prevention
Require preventive controls for egg producers such as buying chicks from suppliers with SE control programs, testing poultry houses for SE, and setting temperature requirements for storing and transporting eggs.
Manufacturing
Peanut butter crackers to pet treats, 2009: Processing plant contamination results in many foods causing sickness in 46 states. Cause: Salmonella Typhimurium.
Prevention
Keep factories clean, separate raw and processed foods, ensure that steps to reduce contamination work.
Manufacturing
Tainted turkey burgers, 2011: 50,000 lbs of ground turkey recalled following illness in 10 states. Cause: Salmonella Hadar.
Prevention
Employ pre-harvest food safety strategies to reduce Salmonella in animals, prevent contamination at slaughter, reduce contamination of ground product from all sources, ensure that steps to reduce contamination work.
Distribution and Delivery
Contaminated ice cream, 1994: Trucks hauling raw eggs, then ice cream, sicken 200,000 nationwide. Cause: Salmonella Enteritidis (SE).
Prevention
Clean and disinfect trucks between loads, keep cold shipments at correct temperatures, track shipments and storage.
Preparation and Consumption
(Restaurants/Grocery stores)
Germs spread in restaurants, 2008: Poor kitchen practices cause food to be undercooked and cross-contaminated. Cause: Salmonella Montevideo.
Prevention
Cook chicken and meats thoroughly, separate raw chicken and meats from other foods, train and certify managers in food safety in all restaurants.
Preparation and Consumption
(Restaurants/Homes)
Frozen pot pies, microwaves, and cooking instructions, 2007: Undercooked pies sicken people in 35 states, Puerto Rico, and the Caribbean. Cause: Salmonella I,4,[5],12:i:-.
Prevention
Make sure cooking instructions are clear and correct, use a food thermometer, ensure that manufacturers indicate power levels on microwave ovens.

Source: CDC

Vector-borne Diseases

Most vector-borne diseases, or diseases that are transmitted to people by blood-sucking arthropods (insects or arachnids), can infect animals and humans. These diseases can be difficult to control because it relies on managing the vector, such as tick and mosquito populations.[17] In NH, tick-borne diseases such as Lyme disease, are the most prevalent vector-borne diseases. Mosquito-borne diseases such as West Nile Virus (WNV) and Eastern Equine Encephalitis (EEE) are also concerns in NH. From January to October 4, 2014, there were two humans, two animals and 18 mosquito batches that were positive for EEE. Only one of the EEE positive mosquito batches was in the GNPHR. There was only one mosquito batch that tested positive for WNV in the state. Mosquito batches are traps set-up in communities to capture mosquitoes that are then tested for WNV and EEE.[19] Nashua routinely collects and tests mosquitoes every summer and fall for WNV and EEE.

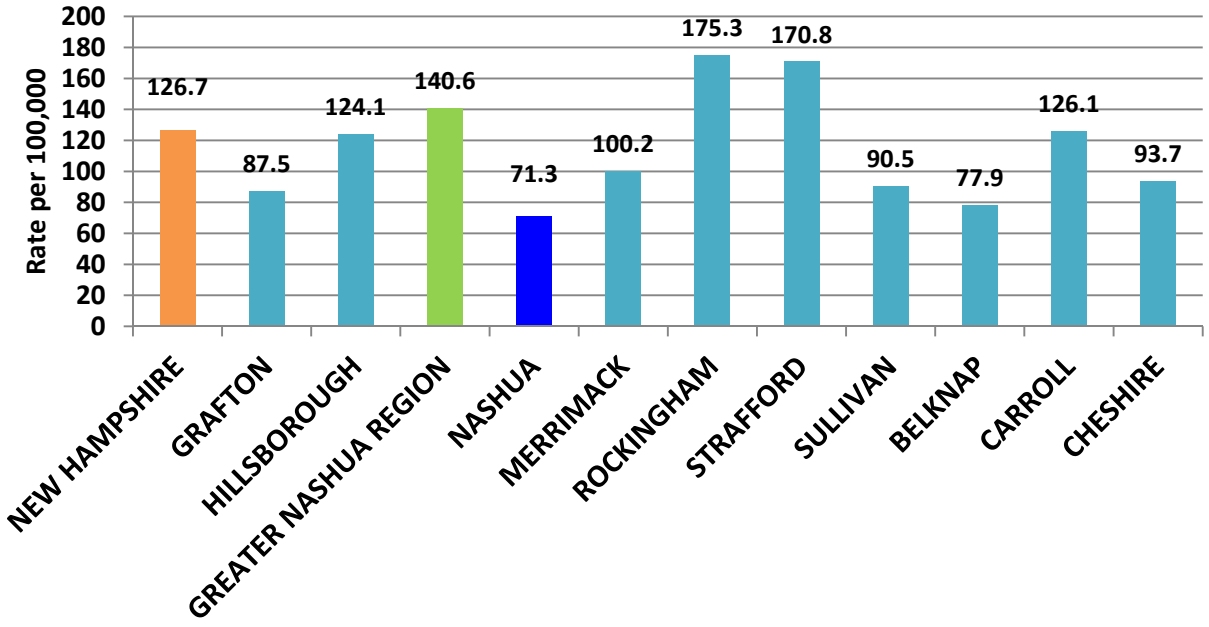
Changes in climate can influence transmission and the incidence of these diseases. When there are changes in temperature or precipitation patterns. With this change in climate, it can create a more ideal living environment for the vector making it easier for it to breed or survive. An example of climate change is the expansion of the blacklegged tick northward which will causes Lyme disease to continue to expand northward.[18]

Lyme Disease

In the early 1970's, Lyme, Connecticut and the surrounding towns started to see an increase of patients with mysterious cases of rheumatoid arthritis. Clinicians and researchers started to investigate these cases and during patient interviews, it was noted that many of the cases were from children that often played in the woods, which made them focus on the blacklegged tick population as a possible link. From here the researchers recorded the time of year and signs and symptoms of the cases to find commonalities and determine the cause of their illness. This eventually led to the identification of *Borrelia burgdorferi*, the bacteria that cause Lyme disease. In 2012, there were a total of 30,000 reported cases in the U.S. This was the highest reported vector-borne illness for that year. In the same year, New Hampshire had the highest incidence rate (incidence = the number of new cases) for Lyme disease. In 2013, the incidence for the state of New Hampshire was 126.7 cases per 100,000 people, the incidence for the GNPHR was 140.6 cases per 100,000 people and the incidence for Nashua was 71.3 per 100,000 people. The incidence in the GNPHR was significantly higher than Nashua (Table 7.2). In comparison to the counties in New Hampshire, the GNPHR ranks third in incidence for Lyme disease (Figure 7.5).

In 2013, there were 1,687 cases of Lyme disease in New Hampshire. It is most common in kids age's five to nine and the onset of symptoms is most commonly seen from June to August.

Figure 7.5 Incidence Rate of Lyme Disease Cases by Geography, 2013



Source: NH DHHS

In 2013, the Greater Nashua Public Health Region had 287 new cases and the City of Nashua had 62 new cases of Lyme disease (Table 7.2), which accounts for 17% of Lyme cases in New Hampshire.

Table 7.2 Incidence Rate and Number of Cases of Lyme Disease by Geography, 2013

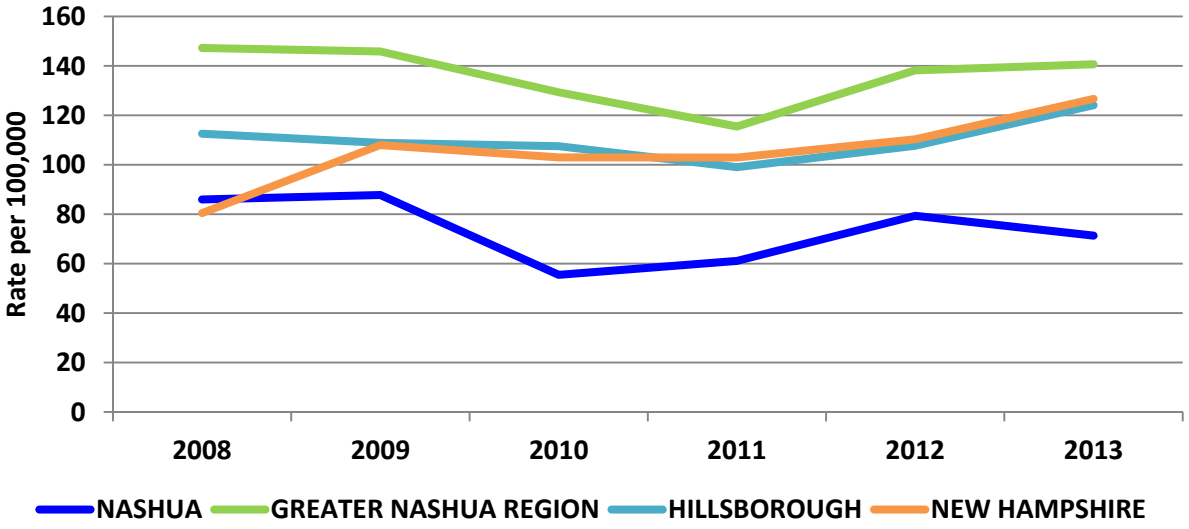
Geography	Number of Cases	Rate (per 100,000)	Confidence Interval
New Hampshire	1,687	126.7	104.6-148.7
Greater Nashua Public Health Region	287	140.6	117.4-163.9
Nashua	62	71.3	54.8-87.9
Source: NH DHHS			

The incidence rate of Lyme disease has remained consistent over the past five years with the Greater Nashua Public Health Region having a significantly higher rate than the City of Nashua in 2013. In 2012 and 2013, the rate for the region stayed around 140 cases per 100,000 (Figure 7.6).

Avoid Tick Bites:

- **Avoid woody and busy areas with high grass and leaf litter**
- **Walk in center of trails**
- **Use repellants with 20-30% DEET**
- **Bathe or shower after coming indoors**
- **Check yourself, your family, pets and gear for ticks**
- **Put clothes in dryer on high heat for an hour to kill ticks**

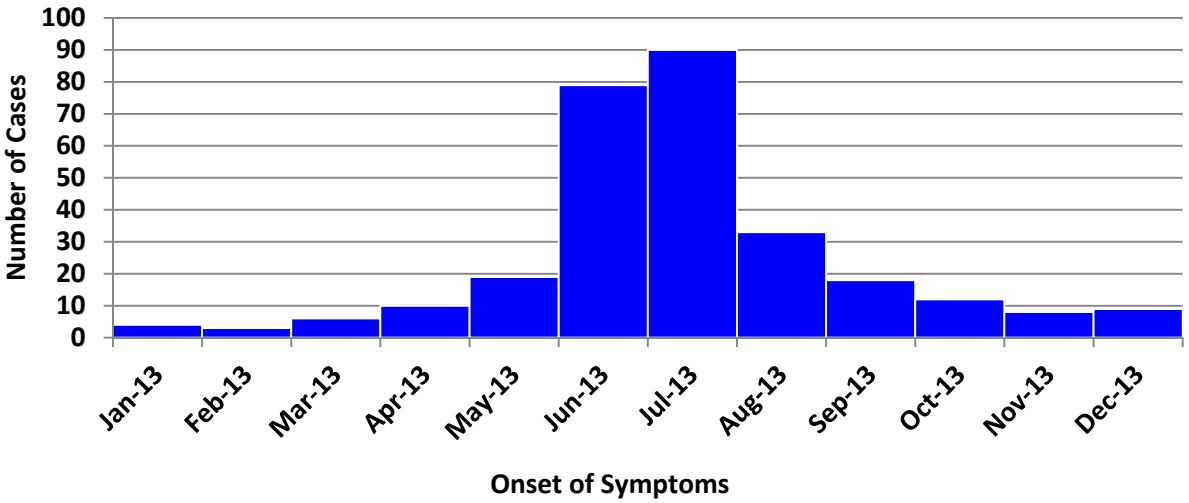
Figure 7.6 Lyme disease Incidence by Year and Geography, 2008-2013



Source: NH DHHS

Nationally, the onset of symptoms in Lyme disease cases mainly occurs in June, July and August which is a similar pattern to what we see in New Hampshire and the Greater Nashua Public Health Region. In 2013, the highest amounts of Lyme disease cases were in the months of June, July and August for Lyme disease cases in the GNPHR as this is when the blacklegged tick is in the nymph stage (Figure 7.7).

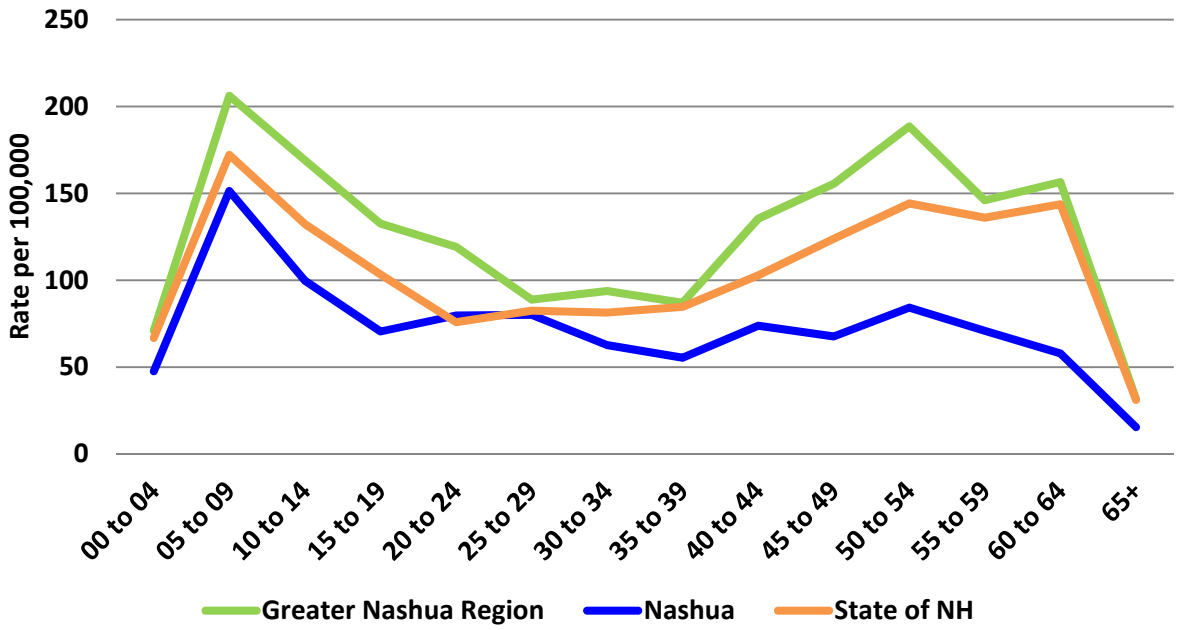
Figure 7.7 Lyme Disease Epi Curve, GNPHR, 2013



Source: NH DHHS

Lyme disease is most common among boys ages five to nine years of age. In Nashua and the Greater Nashua Public Health Region, the age groups that are most affected are ages five to 14 and 50 to 54 (Figure 7.8). From 2008-2013, 54.7% of cases in the GNPHR were male.

Figure 7.8 Rate of Lyme Disease by Age, 2008-2013



Source: NH DHHS

Tuberculosis

Tuberculosis, or TB, is caused by a bacterium called *Mycobacterium tuberculosis* that infects a person's lungs. If not treated properly, TB can be fatal. Not everyone infected with TB becomes sick with TB, this is called latent TB. In latent TB, the bacteria can live in the body without making the person sick and it does not make them infectious. Active TB is when someone develops symptoms of TB and can spread it to others. TB is spread through the air from one person to another when a person with TB coughs or sneezes. Individuals with HIV, chronic conditions such as diabetes, and abuse alcohol and illicit drugs are at higher risk for developing TB disease. Treatment is available for latent TB and active TB. It is important to treat latent TB to reduce the chances of becoming active TB.[20]

From 2004 to 2013, there were 136 cases of active TB in New Hampshire. Most cases were in Hillsborough County and in individuals that were foreign-born. From 2009 to 2013 there were 61 cases of active TB and 52 (85%) were in foreign-born individuals. The most common age category for active TB cases in NH was 25 to 44 years of age.[21] In Nashua from 2009 to 2013, there were 7 cases of active TB.[16]

Vaccines and Vaccine Preventable Illnesses

Some diseases, like polio and diphtheria, are rare in the United States thanks to immunizations. Vaccines are the most cost-effective clinical preventative service to reduce infections. Vaccines save 33,000 lives, prevents 14 million cases of disease and reduces health care costs by $9.9 billion. Although we have vaccines available in the US, about 42,000 adults and 300 children die each year from vaccine-preventable diseases. Recently, there have been outbreaks of measles and pertussis in communities where the population is undervaccinated. In Nashua, the most common vaccine-preventable diseases are varicella (chickenpox), *Streptococcus pneumonia* (invasive disease) and pertussis. From 2009 to 2013 in Nashua, there were 47 probable or confirmed cases of varicella and 25 probable or confirmed pertussis cases.

In the US in 2013, vaccination coverage for children born from January 2010 to May 2012 achieved the 90% Healthy People 2020 target goal for measles, mumps and rubella vaccine (MMR), the hepatitis B vaccine (HepB), the poliovirus vaccine and the varicella vaccine. Coverage was below the 90% target for diphtheria, tetanus and pertussis vaccine (DTaP), the pneumococcal conjugate vaccine (PVC) and the *Haemophilus influenza* type b vaccine (Hib). In 2013, the national vaccination coverage for children 19-35 months was 83.1% for ≥4 DTap doses, 92.7% for ≥3 poliovirus doses, 91.9% for ≥1 MMR dose, 82% for the full series of Hib, 90.8% for ≥3 HepB doses, 91.2% for ≥1 varicella dose, and 82% for ≥4 PCV doses. In 2013 in New Hampshire, children in this age group met the 90% target for MMR (96%) and DTaP (91%). Another Healthy People 2020 goal is to increase the percent of newborns receiving a birth dose of HepB to 85%. Nationally, 74% received this birth dose and in NH 74% received the birth dose (Table 7.3).

Table 7.3 Estimated Vaccination Coverage in Children 19-35 months

Geography	MMR (≥1dose) HP2020 Goal: 90%	DTaP (≥4doses) HP2020 Goal: 90%	HepB Birth HP2020 Goal: 85%	HepA (≥2doses) HP2020 Goal: 85%	Rotavirus HP2020 Goal: 80%
US	91.9%	83.1%	74.2%	54.7%	72.6%
NH	96.3%	91.3%	74.1%	53.3%	78.2%
MA	95.8%	93.3%	78%	62.7%	84%
Source: CDC, National Immunization Survey, US, 2013					

In the US, the percentage of children who received no vaccinations is below 1% and children living below the federal poverty level had lower vaccination coverage compared with children above the poverty level. Additionally, in 2013 in the US, African American children had lower coverage compared to Caucasian children for ≥3 and ≥4 DTap doses, Hib, ≥4 PCV doses, rotavirus, and the combined vaccine series. However, African American and Hispanic children had higher coverage than Caucasian children for the Hepatitis B vaccine.

It is recommended that adolescents receive the tetanus (Td) or tetanus/pertussis (Tdap), meningococcal (MCV4) and human papillomavirus (HPV) vaccines as part of their routine adolescent visits because the vaccines received in childhood begin to weaken. There are many reasons why protection against tetanus, meningococcal disease and human papillomavirus is important. Tetanus is a serious disease that leads to tightening of the muscles and can lead to death in one out of ten cases. Meningicoccal disease is caused by the bacteria, *Neisseria meningitidis*, and the case fatality rate for this disease is 10-14% with antibiotic therapy. One of the high risk groups includes those living in closed quarters such as dormitories and military barracks. The Human Papillomavirus (HPV) is one of the most commonly transmitted sexual diseases, causes genital warts and is the leading cause of cervical cancer in women. In 2010, the American Cancer Society estimated that over 12,200 women will be diagnosed and 4,210 will die from cervical cancer in the United States.[24]

The Healthy People 2020 objective is to increase vaccine coverage for adolescents for the tetanus, meningococcal and HPV vaccines to 80%. New Hampshire meets this target for the tetanus vaccine with 88% (CI 82.7-91.8%) coverage. However, New Hampshire does not meet the Healthy People 2020 objective for the meningococcal vaccine with 68% coverage and the HPV vaccine with 40% coverage for all three shots in the HPV vaccine series.[24]

Influenza

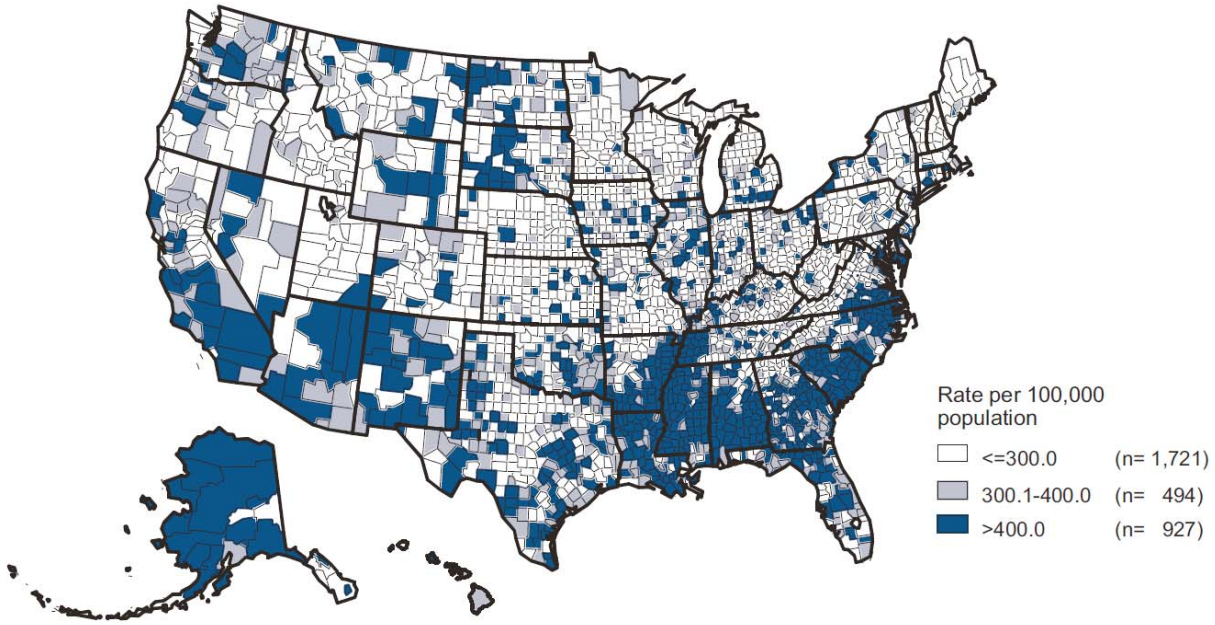
Influenza causes 3,000 to 49,000 deaths every year and certain people are at greater risk for complications from influenza including young children, pregnant women and individuals with chronic conditions or a weak immune system. Current recommendations are for anyone over 6 months of age without a contraindication to get the influenza vaccine every year. The Healthy People Goal is to have 70% of the population 6 months and older receiving the influenza vaccine annually. Additionally, it is recommended that individuals with chronic conditions, smokers or individuals over 65 years of age receive the pneumococcal vaccine to prevent illness from *Streptococcus pneumoniae* a bacteria that causes pneumonia, ear infections and meningitis. From 2009 to 2013 in Nashua, there were 45 cases of invasive disease of *S. pneumoniae*. The Healthy People 2020 goal is to increase the percent of adults 65 years and older vaccinated for *S. pneumoniae* to 90%. In 2012 in NH, 59% of adults over the age of 65 years received an influenza vaccine and 91% received a pneumococcal vaccine. In 2012, only 40% of asthmatics in NH received an influenza vaccination and only 47% received a pneumococcal vaccination.

Sexually Transmitted Infections

In the Unites States, young adults ages 15 to 24 make up 24% of the sexually active population and account for 50% of the 20 million new sexually transmitted infections (STIs). Undiagnosed STIs cause 24,000 women to become infertile and many do not know they are infected because STIs often have no symptoms. Individuals can protect themselves by getting tested, reducing risky behaviors and getting vaccinated with the HPV vaccine. In 2012 there were 1,422,976 cases of chlamydia in the US which is the largest number of cases reported to the CDC for any condition. The rate among women was over two times the rate for men and the rate in African Americans was 6.8 times the rate in Caucasians. The rates of chlamydia in NH are lower than other parts of the country such as the southeast and south west

(Figure 7.9). The rates of gonorrhea have increased slightly since 2009 and in 2012 there were 334,826 cases nationally. Antimicrobial resistance remains a threat in the treatment of gonorrhea with an increased resistance to fluoroquinolones, a type of antibiotic. The rate of primary and secondary syphilis has decreased dramatically but there are still small geographic pockets in the country with syphilis. The rate among African Americans was 6 times than the rate for Caucasians with African Americans ages 15-19 years most disproportionately affected by syphilis.[25]

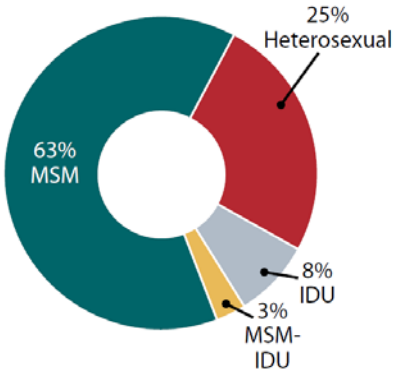
Figure 7.9 Chlamydia Rates by County, United States, 2012



Source: CDC

Additionally, there were an estimated 47,500 people newly infected with the human immunodeficiency virus (HIV) in the US in 2010 and the incidence of HIV has remained steady with about 50,000 new infections each year. African Americans, Latinos and gay and bisexual men continue to be disproportionately affected by HIV. However, there is a decreasing trend of new HIV infections among African American women. Men who have sex with men are the most affected by HIV as they represent 4% of the population but make up 78% of new HIV infections among men and nearly 63% of new infections in 2010.

Figure 7.10 Estimated New HIV Infections by Transmission, 2010



In NH, there have been increases in chlamydia and gonorrhea over the past five years and syphilis and HIV have had stable case counts the past five years. In NH in 2012, there were 3,070 cases of chlamydia with 2,151 of these cases in women and 1,354 of these cases in young adults 20-24 years of age. In 2012 in Hillsborough County, there were 1,056 cases and in Nashua there were 228 cases of chlamydia. Nashua and Manchester make up the bulk (73%) of cases in Hillsborough County. The rate of chlamydia infections in

Nashua (262 per 100,000) is about ½ of the rate for the United States (456 per 100,000) and similar to Hillsborough County (262 per 100,000). In NH in 2012 there were 148 cases of gonorrhea and in Nashua there were 9 cases. The rate of gonorrhea in NH is lower than the rate in the US (98 per 100,000) and the rate in Nashua (10.4 per 100,000) is about the same as NH (11.2 per 100,000). There were 49 cases of syphilis in NH in 2012 and 3 cases in Nashua. The rate of syphilis in NH is 3.7 per 100,000 and the rate in the US is 5.0 per 100,000 (Table 7.4).

Similar to national trends, men who have sex with men make up a majority of newly diagnosed HIV infections with about 120 cases from 2008-2012. There were 49 new infections with HIV in NH in 2012 and 26 in Hillsborough County. The rate of HIV was 6.5 per 100,000 in Hillsborough County in 2012 and 3.7 per 100,000 in NH. In 2012, there were 27 new diagnoses of AIDS in NH and 12 in Hillsborough County. About 40% of these cases received a concurrent diagnosis of HIV and AIDS meaning they received an AIDS diagnosis within 12 months of an initial HIV diagnosis.

Table 7.4 Rates of Sexually Transmitted Diseases by Geography, 2012^

	Chlamydia (per 100,000)	Gonorrhea (per 100,000)	Syphilis (per 100,000)	HIV (per 100,000)
Geography				
US	456.7	98	5.0	19.1 (2011)
NH	232.4	11.2	3.7	3.7
Hillsborough	262.1	16.6	6.2	6.5
Manchester	493.6	39.0	14.5	*
Nashua	262.3	10.4	*	*
Gender				
NH Males	140.9	12.9	7.5	5.8
NH Females	321.8	9.6	0.0	1.6

*Source: CDC, NH DHHS; *=number of cases too small to release or calculate; ^=unless otherwise indicated.*

Adolescents and Sexual Behavior

Educating adolescents on prevention of STIs is an important component of reducing STIs. In the Greater Nashua Public Health Region (GNPHR), about 40% of high school students have had sexual intercourse and 31.6% have had sexual intercourse with more than one person in the past 3 months (Table 7.5). There are differences by grade with 23% of 9th grade students from the Nashua high schools that had sexual intercourse compared with 64% of 12th graders (Figure 7.11). Of GNPHR high school students that had sexual intercourse 21% drank alcohol or used drugs beforehand, 62% used a condom and 26%

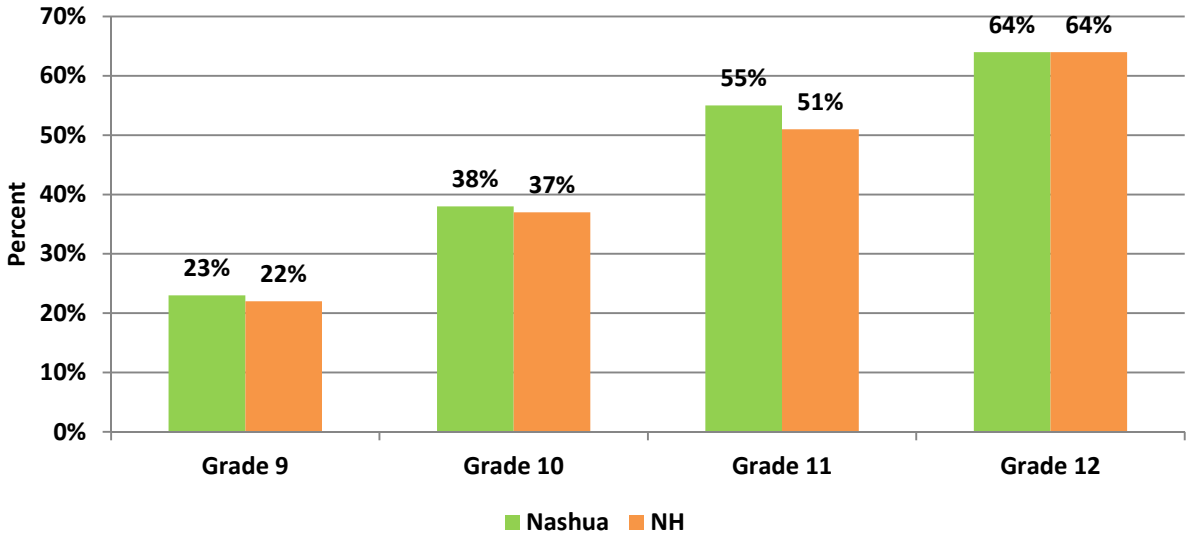
used birth control to prevent pregnancy.

Table 7.5 Sexual Behavior for High School Students, 2013

	Nashua	GNPHR	NH
Percentage of students who had sexual intercourse	44.2%	40.4%	42.3%
Percentage of students who had sexual intercourse with one or more people during the past 3 months	34.5%	31.6%	33.5%
Among students who had sexual intercourse, the percentage that drank alcohol or used drugs beforehand	20.8%	21.2%	20.3%
Among students who had sexual intercourse, the percentage who used a condom during last sexual intercourse	63.4%	62.5%	62.7%
Among students who had sexual intercourse, the percentage who used birth control pills to prevent pregnancy	22.4%	26%	27.3%
Source: NH DHHS; YRBS			

About 21% of high school students in the Greater Nashua Public Health Region used alcohol or drugs before having sexual intercourse.

Figure 7.11 Percent of High School Students Who Had Sexual Intercourse by Grade



Source: YRBS

[1]Centers for Disease Control and Prevention (CDC). (2014). Healthcare-associated Infections Data and Statistics. Retrieved on October 8, 2014, from http://www.cdc.gov/HAI/surveillance/index.html.

[2]Centers for Disease Control and Prevention. (CDC). (2014). Nursing Homes and Assisting Living. Retrieved on October 8, 2014 from http://www.cdc.gov/longtermcare.

[3]NH DHHS. (2014). NH Healthcare-Associated Infections 2013 Hospital Report. Retrieved on October 8, 2014 from http://www.dhhs.state.nh.us/dphs/cdcs/hai/documents/hai2013-hospital.pdf

[4]Infectious Disease Society of America. (IDSA). (2009). New Hampshire: A Summary of Select Antimicrobial Resistance Data. Retrieved on October 8, 2014 from http://www.idsociety.org/AR_New_Hampshire.

[5]Centers for Disease Control and Prevention (CDC). (2012). Vital Signs: Stopping C. difficile Infections. Retrieved on October 8, 2014, from http://www.cdc.gov/HAI/surveillance/index.html.

[6]Society for Healthcare Epidemiology in America. (SHEA). (2014). Strategies to Prevent Clostridium difficile Infections in Acute Care Hospitals: 2014 Update. Retrieved October 8, 2014 from http://www.jstor.org/stable/10.1086/676023

[7]Infectious Disease Society of America. (IDSA). (2009). New Hampshire: A Summary of Select Antimicrobial Resistance Data. Retrieved on October 8, 2014 from http://www.idsociety.org/AR_New_Hampshire.

[8]US DHHS. Office of Disease Prevention and Health Promotion. (2013). Acute care hospitals. Retrieved on October 8, 2014 from http://www.health.gov/hai/pdfs/hai-action-plan-acute-care-hospitals.PDF.

[9]Society for Healthcare Epidemiology in America. (SHEA). (2014). Strategies to Prevent Methicillin-resistant Staphylococcus aureus Transmission and Infections in Acute Care Hospitals: 2014 Update. Retrieved October 8, 2014 from http://www.jstor.org/stable/10.1086/676534.

[10]Infectious Disease Society of America. (IDSA). (2009). New Hampshire: A Summary of Select Antimicrobial Resistance Data. Retrieved on October 8, 2014 from http://www.idsociety.org/AR_New_Hampshire.

[11]Centers for Disease Control and Prevention (CDC). (2014). Methicillin-resistant Staphylococcus aureus (MRSA) Infections. Retrieved on October 8, 2014, from http://www.cdc.gov/HAI/surveillance/index.html.

[12]Centers for Disease Control and Prevention (CDC). (2014). Antibiotic Resistance Threats in the United States, 2013. (2013). Retrieved on October 8, 2014 from http://www.cdc.gov/drugresistance/threat-report-2013.

[13]US DHHS. Office of Disease Prevention and Health Promotion. (2013). Acute care hospitals. Retrieved on October 8, 2014 from http://www.health.gov/hai/pdfs/hai-action-plan-ltcf.pdf

[14]Centers for Disease Control and Prevention (CDC). (2014). Antibiotic Resistance Threats in the United States, 2013. (2013). Retrieved on October 8, 2014 from http://www.cdc.gov/drugresistance/threat-report-2013.[15]CDC. (2014). *Vital Signs: Making Food Safer to Eat*. Retrieved from http://www.cdc.gov/vitalsigns/FoodSafety/?s_cid=vitalsigns_070.

[16]NH Department of Health and Human Services. (2013). *New Hampshire Electronic Disease Surveillance System*. Concord, NH: NH DHHS.

[17]CDC. (2014). Division of Vector-Borne Diseases. Retrieved from http://www.cdc.gov/ncezid/dvbd/about.html.

[18]CDC. (2014). Vector-Borne and Zoonotic Diseases. Retrieved from http://www.cdc.gov/climateandhealth/effects/vectorborne_zoonotic.htm.

[19]NH DHHS. (2014). *NH Arbovirus Testing Results*. Retrieved from http://www.dhhs.state.nh.us/dphs/cdcs/arboviral/documents/arbotestresults2014.pdf.

[20]CDC. (2014). *Basics TB Facts*. Retrieved from http://www.cdc.gov/tb/topic/basics/default.htm.

[21]NH DHHS. (2013). *NH DHHS Tuberculosis Program*. http://www.dhhs.state.nh.us/dphs/cdcs/tb/documents/tbcounty.pdf

[22]NH DHHS. (2012). New Hampshire Immunization Data 2012 Behavioral Risk Factor Surveillance System Update. http://www.dhhs.nh.gov/DPHS/immunization/documents/databrief12.pdf.

[24]NH DHHS. (2011). *New Hampshire Immunization Data 2011.* Retrieved on July 21, 2011 from http://www.dhhs.state.nh.us/dphs/immunization/documents/data2011.pdf.

[25]CDC. (2012). *2012 Sexually Transmitted Disease Surveillance*. Retrieved from http://www.cdc.gov/std/stats12/default.htm.

[26]NH DHHS. (2013). *New Hampshire STD/HIV Surveillance Program 5 Year Data Summary Report 2008-2012.* Retrieved from http://www.dhhs.state.nh.us/dphs/cdcs/documents/nh-std-hiv-aids-surveillance.pdf.

[27]NH DHHS. (2013). *Youth Risk Behavioral Health Surveillance System*. Retrieved from http://www.education.nh.gov/instruction/school_health/hiv_data.htm.

[28]Bureau of Data Management and Informatics. (2009). *Emergency Department and Hospitalization Discharges*. Concord, NH: NH DHHS.

"Each year, drug abuse and addiction cost taxpayers nearly $534 billion in preventable health care, law enforcement, crime, and other costs"

- *National Institute on Drug Abuse*

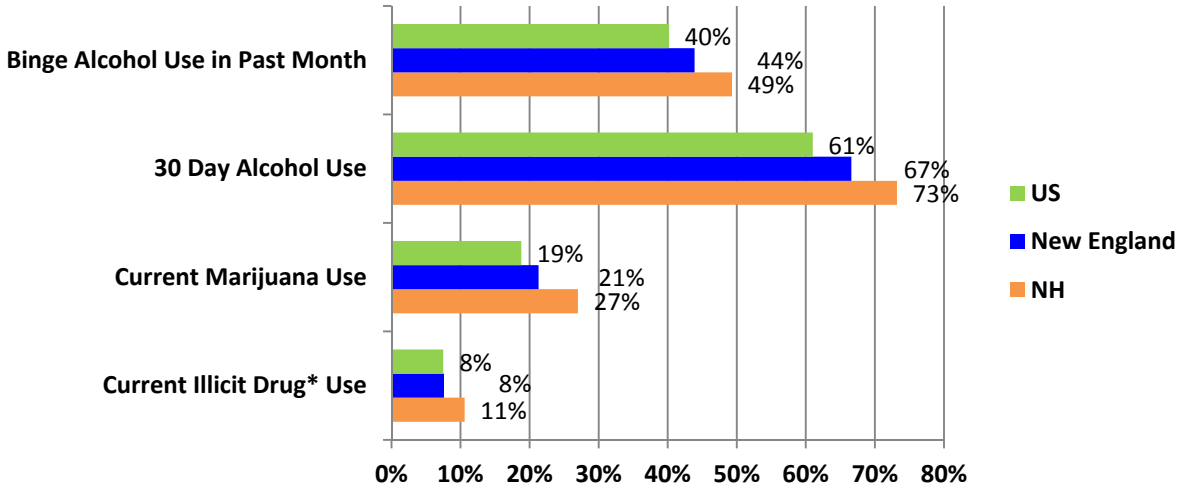
Substance Misuse & Tobacco

Contents

Alcohol, tobacco and other drugs continue to be a problem in communities across the nation. The use, misuse and abuse of substances surpass the individual and impact all members of a community. The word use is applied when referring to a legal substance, used as indicated and considered socially appropriate. In the case of alcohol; use is considered appropriate if consumed by an adult over the age of 21 in a manner that does not result in intoxication and is not habitual use. Substance misuse refers to using a legal substance in a manner that is not considered appropriate or not as indicated. In the case of prescription drugs this means using prescriptions in a manner other than as prescribed. Substance abuse refers to the use of substances with the intention of getting a euphoric response.[15] Substance abuse is a public safety concern because of the associated medical issues and crime. Substance abuse has both short and long-term health and safety consequences, including cognitive impairment that affects activities such as driving and learning, delays to adolescent brain and social skill development, suicide risk, unwanted sexual activity, violence, injury, family and relationship problems, academic failure, low work place productivity, acute intoxication, crime, addiction and other outcomes, many of which are associated with significant personal and societal costs. Drug control spending has increased dramatically in the last decade. According to the National Drug Control Budget the 2013 Fiscal Year saw a spending of $23.8 billion for drug control up from $17 billion in 2003.[1] These numbers do not take into account drug related medical costs or loss of productivity due to substance abuse. According to the National Institute on Drug Abuse, drug related healthcare costs surpass 135 billion annually.[2] The cost of substance abuse is more than financial since substance use affects family dynamics, mental health and the quality of life of those touched by substance abuse.

According to the National Survey on Drug Use and Health, New Hampshire ranks as one of the highest states for substance abuse among New England states and New England has a high substance abuse rate compared to the rest of the country (see Figure 8.1).

Figure 8.1 Young Adult Substance Abuse, 2011



Source: 2011 National Survey on Drug Use and Health

*Illicit drugs include cocaine (including crack), heroin, hallucinogens, inhalants, prescription type psychotherapeutics used non-medically.

Illicit Drug Abuse

Illicit drug abuse in America continues to increase. Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, and prescription-type psychotherapeutics used non-medically. In 2012, an estimated 23.9 million Americans ages 12 or older—or 9.2 percent of the population—had abused an illicit drug or misused a psychotherapeutic medication (such as a pain reliever, stimulant, or tranquilizer) in the past month, an increase from 8.3% in 2002. The increase mostly reflects a recent rise in the abuse of marijuana; the most commonly abused illicit drug.[3] Drug abuse has the potential to become an addiction. Addiction is a chronic disease that causes compulsive drug seeking and use, despite harmful consequences to the addicted individual and those around them. Even though the initial decision to take drugs is voluntary for most people, the brain changes that occur over time impact an addicted person's self-control and hamper their ability to resist intense impulses to take drugs.[4] Fortunately, treatments are available to help people recover from addiction.

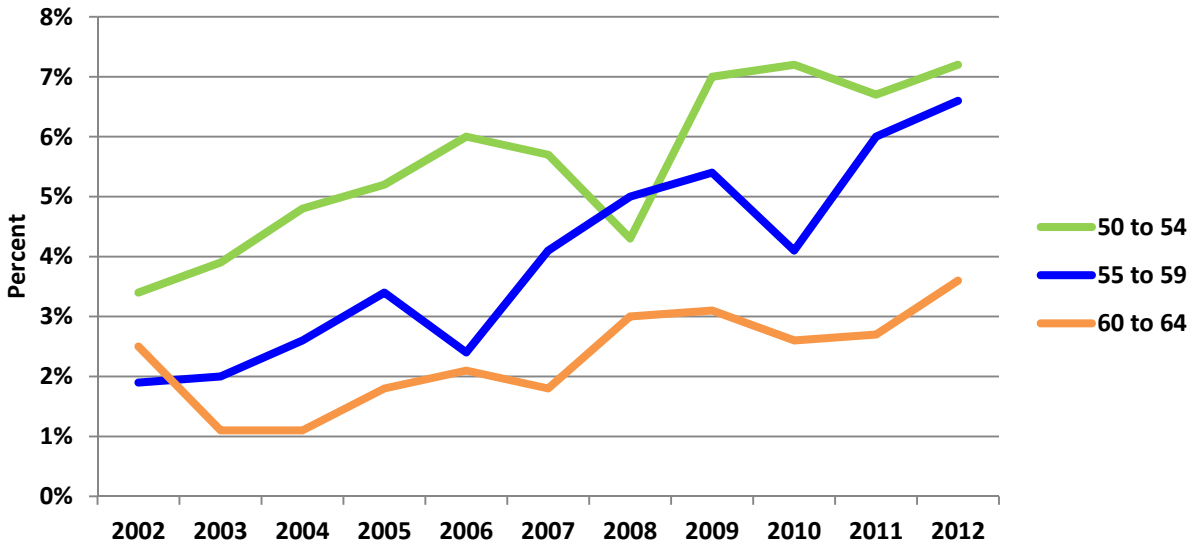
In 2012, an estimated 23.9 million Americans ages 12 or older—or 9.2 percent of the population—had used an illicit drug.

Drug abuse is highest among people in their late teens and twenties. Below are the substance use rates for New Hampshire in 2011 according to the National Survey on Drugs and Health for adults between the ages of 18-25:

- 73.2 % reported current alcohol use
- 49.3 % reported current binge drinking
- 46.2 % reported current tobacco smoking
- 27% reported current marijuana use
- 10.6% reported current illicit drug use (not marijuana).[3]

According to the U.S. Drug Enforcement Administration, marijuana is the predominant drug of choice for New Hampshire, and is readily available in all parts of the State. This report also indicated that heroin and methamphetamine abuse and availability were increasing, particularly in the seacoast and western parts of the State.[5] Substance abuse is also on the rise for older adults as seen in figure 8.2. Abuse of alcohol or other drugs is a common cause of physical and mental health problems in older adults, especially older men. Rates of illicit drug abuse and dependence are lower in the older population than in younger people. However, substance misuse, such as inappropriate use of prescription and over-the-counter (non-prescription) medicines, is increasing.[6] In New Hampshire, this is visible in the sharp increase of overdose deaths between 2012 and 2013 for males ages 50-59, increasing from zero deaths to eleven in just one year.[7]

Figure 8.2 Past Month Illicit Drug Use among Adults Aged 50 to 64 in the US, 2000-2012



Source: 2012 National Survey on Drug Use and Health

Youth and Illicit Drug Abuse

Most people who use drugs begin using as teenagers. Nationally, there were over 2.8 million new users of illicit drugs in 2012, or about 7,900 new users per day. Over half (55.1 %) were under 18 years of age. Most (65.5%) of new illicit drug users begin with marijuana followed by prescription pain relievers (17%) and inhalants (6.3%) which is most common among younger teens.[3] New Hampshire high school students were asked about drug use in the 2013 Youth Risk Behavioral Survey (YRBS) that was also completed in the Greater Nashua Public Health Region (GNPHR). Table 8.1 represents the results for substance related questions answered by high school students.

The Healthy People 2020 objective for high school students reporting use of marijuana in the past 30 days, is to lower the rate to 6% by 2020. The current rate for the Greater Nashua Public Health Region is 24.8%.

Table 8.1 Substance Abuse Indicators for High School Students, 2013

	Nashua	GNPHR	NH
Students used marijuana one or more times during past 30 days	26.2%	24.8%	24.2%
Students tried marijuana for the first time before age 13 years	7.8%	6.4%	7.0%
Students haven take prescription drug (such as OxiContin, Percocet, Vicodin, Adderall, Ritalin, or Xanax) without a doctor's prescription one or more times during their life	18.6%	17.5%	16.6%
Students have taken a prescription drug (such as OxiContin, Percocet, Vicodin, Adderall, Ritalin, or Xanax) without a doctor's prescription one or more times in the past 30 days	8.8%	8.1%	7.8%
Students used some form of cocaine, including powder, crack, or freebase, one or more times during their life	6.7%	6.0%	5.9%
Students sniffed glue, breathed the contents of aerosol spray cans, or inhaled any paints or sprays to get high one or more times during their life	8.4%	8.4%	8.3%
Students used heroin one or more times during their life	2.7%	2.8%	3.0%
Students used methamphetamines one or more times during their life	3.2%	3.4%	3.5%
Students used ecstasy one or more times during their life	8.1%	7.6%	7.0%
Students who were offered, sold, or given an illegal drug on school property by someone during the past 12 months	21.0%	19.3%	18.7%
Source: NH DHHS, 2013 YRBS			

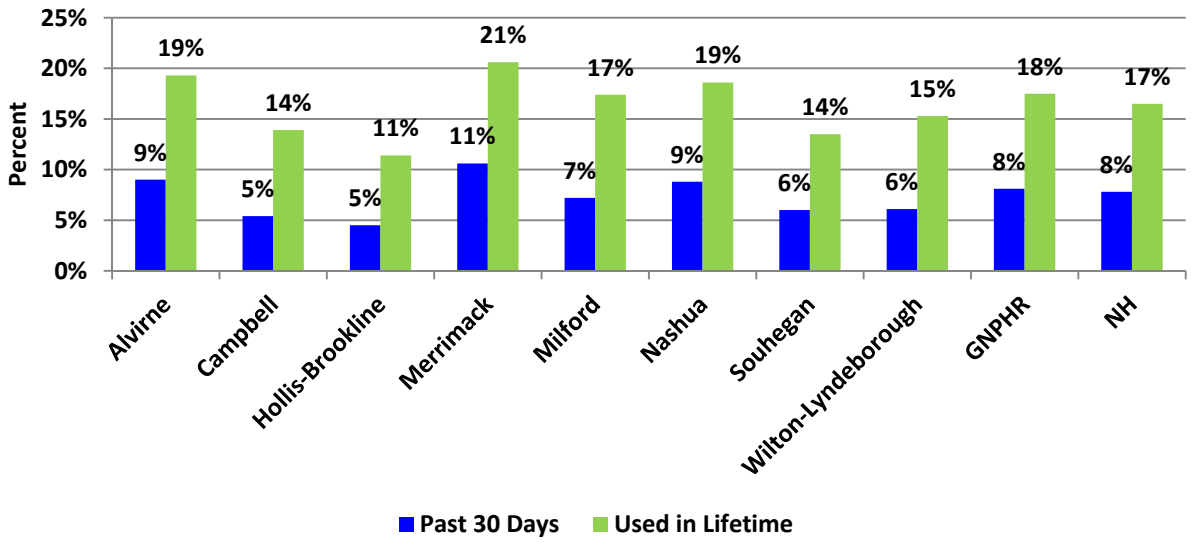
The Healthy People 2020 objective for high school students reporting use of marijuana in the past 30 days, is to lower the rate to 6% by 2020.[9] The current rate for the GNPHR is 24.8% which is far from the Healthy People 2020 goal. The communities of the GNPHR are working in coalitions focused on substance abuse prevention to lower the rates of use through education and projects to influence social norms regarding substance use.

When GNPHR students were asked about access to substances, 45.6% of students think it would be very easy for them to get some marijuana if they wanted to and 17.8% of students think it would be very easy for them to get a prescription drug without a doctor's prescription is they wanted to. When asked about perception of harm 22.7% of students think people are at great risk of harming themselves (physically or in other ways), if they smoke marijuana once or twice a week (see table 8.2 to find this information by school and grade) and 62.7% of students think people are at great risk of harming themselves (physically or in other ways), if they take a prescription drug without a prescription. Table 8.3 highlights the percent of students by school that have used a prescription drug without a prescription in their lifetime or within the past 30 days.[8]

Table 8.2 Perception of Harm – Smoking marijuana once or twice a week, 2013

Perception of Harm – Smoking marijuana once or twice a week					
	9th Grade	10th Grade	11th Grade	12th Grade	Overall
Alvirne HS	35.4%	22.4%	15.1%	17.7%	23.0%
Campbell HS	44.4%	28.2%	23.5%	20.8%	29.7%
Hollis-Brookline HS	45.2%	26.2%	18.8%	11.9%	25.7%
Merrimack HS	32.0%	23.9%	18.9%	14.5%	22.5%
Milford HS	35.2%	24.4%	16.2%	13.0%	22.3%
Nashua North	30.0%	22.7%	13.4%	13.8%	20.5%
Nashua South	25.4%	21.4%	18.8%	16.9%	20.9%
Souhegan HS	30.5%	21.6%	23.3%	12.5%	22%
Wilton-Lyndeborough	42.9%	28.0%	25.5%	8.8%	27.1%
State of NH	29.9%	22.9%	18.2%	14.8%	22.0%
*Source: NH DHHS; YRBS; *Data not available*					

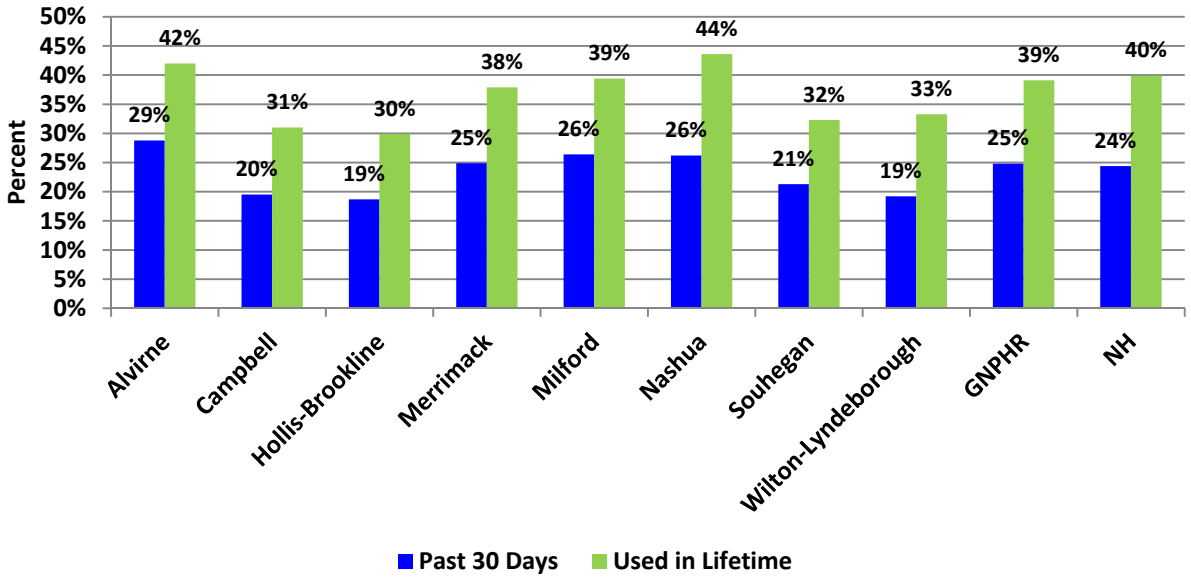
Figure 8.3 High School Students Use of Prescription Drugs without Doctor's Prescription, 2013



Source: YRBS, 2013

Between 10% and 44% of high school students in the GNPHR have used marijuana at least once in their lifetime and between 19% and 29% have used it within the past 30 days. Figure 8.6 shows the reported use of marijuana by town as reported by the 2013 Youth Risk Behavior Survey.

Figure 8.4 High School Students Use of Marijuana, 2013



Source: YRBS 2013

Adults and Alcohol Abuse

In the 2012 National Survey on Drug Use and Health, 52.1% (135.5 million) of Americans over the age of 12 reported being current alcohol drinkers, 23% (59.7 million) of Americans over the age of 12 reported binge drinking in the past 30 days and 6.5% (17 million) of Americans in the same age range reported heavy drinking.[3]

Heavy drinking is defined as more than two drinks a day for a man and more than one drink a day for a woman. Binge drinking is defined as five or more drinks at one time for a man and four or more drinks at one time for a woman. According to the 2012 New Hampshire BRFSS 15.9% (CI 12.7-19.0%) of adults over 18 years of age in the GNPHR reported binge drinking and 6.6% (CI 4.3-8.8%) of adults over 18 years of age reported heavy drinking (Table 8.3).[10]

For more information on treatment, visit the NH DHHS Bureau of Drug and Alcohol Services website at http://www.dhhs.nh.gov/dcbcs/bdas/treatment.htm

Table 8.3 Alcohol Abuse Indicators for Adults, 2012

	Nashua	GNPHR	NH
Binge drinking prevalence among adults	13.5% (CI 8.9-18.1%)	15.9% (CI 12.7-19.0%)	17.3% (CI 15.9-18.6%)
Binge drinking frequency among adults	6.1% (CI 3.3-8.8%)	4.9% (CI 3.1-6.7%)	4.5% (CI 3.8-5.1%)
Binge drinking intensity among adults	8.5% (CI 5.4-11.7%)	7.9% (CI 6.2-9.7%)	7.5% (CI 6.0-8.1%)
Heavy drinking among adults	7.6% (CI 3.7-11.6%)	6.6% (CI 4.3-8.8%)	7.2% (CI 6.3-8.1%)
Women of Childbearing Age			
	Nashua	**GNPHR**	**NH**
Binge drinking among women 18-44 years	N/A	19.9% (CI 12.0-27.8%)	18.5% (CI 15.1-21.9%)
Heavy drinking among women 18-44 years	N/A	4.9% (CI 0.8-9.1%)	5.7% (CI 3.7-7.7%)
Source: NH DHHS, BRFSS			

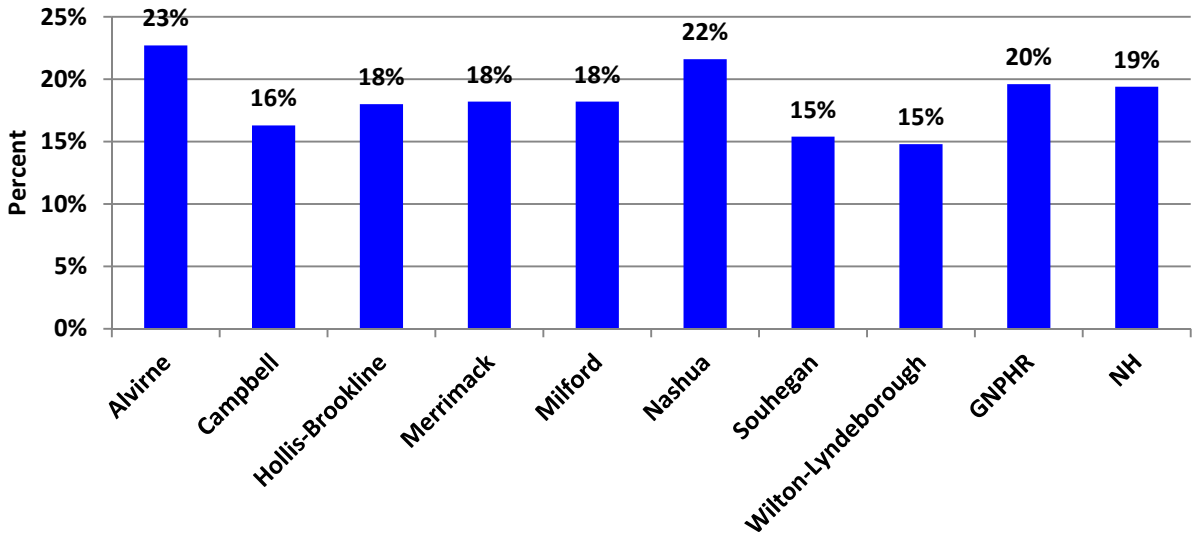
Youth and Alcohol Abuse

Nationally, the rate of alcohol use for children 12-13 is 2.2%, while for children 14-15 that rate increases to 11.1%. The rate continues to increase with 24.8% of 16-17 year olds drinking and 45.8% of 18-20 year olds.[3] Rates of binge drinking among youth also increase with age. The rate for binge drinking for youth 12-13 are 0.9%, increasing to 5.4% by 14-15 and continuing to increase to 15% for 16-17 year olds. The rate increases to 30.5% for those 18-20 year olds, and it peaks for those 21-25 at 45.1%.[3] Alcohol consumption among youth of high school age in New Hampshire and the GNPHR is described in table 8.4 and figure 8.5. Both tables demonstrate that the incidence of binge drinking and alcohol consumption in general, is high in New Hampshire and the GNPHR. In NH as shown below the 19.4% of High School students are reporting binge drinking the number for Nashua is higher. The Healthy People 2020 goal is to lower the percentage of adolescent binge drinking of alcohol to 8.6%. The percentage for NH and Nashua are more than double the objective as stated in the table below.

Table 8.4 High School Students and Alcohol Use, 2013

	Nashua	GNPHR	NH
Student had at least one drink of alcohol on one or more days during their life	63.1%	61.3%	61.2%
Students had their first drink of alcohol other than a few sips before the age of 13	13.6%	11.8%	12.5%
Students had at least one drink of alcohol on one or more days during the past 30 days	37.3%	34.9%	34.0%
Students had five or more drinks of alcohol in a row, that is, within a couple of hours, on one or more of the past 30 days	21.6%	19.6%	19.4%
Source: NH DHHS; YRBS			

Figure 8.5 Reported Binge Drinking in High School Students, 2013



Source: YRBS 2013

When asked about their attitudes towards alcohol use, 62.9% of students across the Greater Nashua Public Health Region approve or strongly approve of someone their age having one or two drinks of alcohol (beer, wine, or liquor) nearly every day and 36% of students think people are at great risk of harming themselves (physically or in other ways), if they have five or more drinks of alcohol once or twice a week. Furthermore, 40.9% of students think it would be easy for them to get some beer, wine, or liquor if they wanted to.[8]

Public Safety

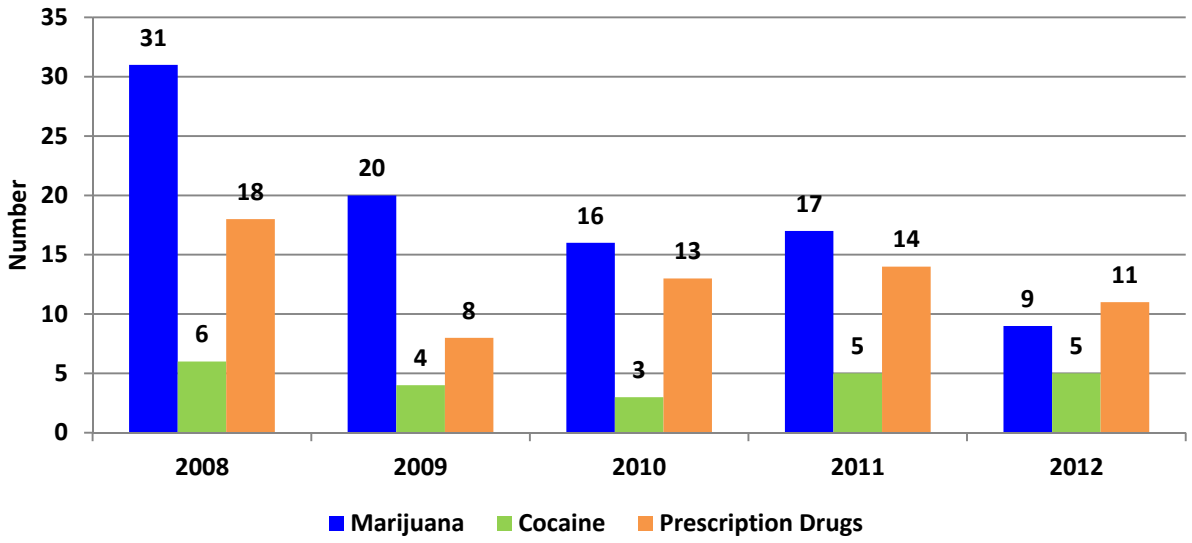
According to the New Hampshire Medical Examiner's Office the numbers of drug-related deaths in New Hampshire have surpassed traffic-related deaths consistently since 2009. In New Hampshire, Hillsborough County is the county with the highest number of heroin-related overdoses. In Hillsborough County alone, there were 86 heroin-related deaths between 2008 and 2013.[7] The National Survey on Drug and Health in 2012, reports 11.2% of persons 12 years of age or older drove under the influence of alcohol at least once in the past year. For people 18-25 the rate of driving under the influence of alcohol has dropped from 26.6% in 2002 to 18.4% in 2012.[3] The Nashua Police Department states that drug arrests increased 36% in 2013 from the average of 347 arrests to 473 arrests. The upward trend in drug arrests can be seen over several years (Table 8.5). In addition, driving under the influence has also increased over the past five years in the City of Nashua.[11]

Table 8.5 Reported Drug and DUI Arrests, 2009-2013

	Total Arrests	Drug Arrests	DUI Arrests
2009	4,157	340	248
2010	4,334	328	313
2011	4,731	413	279
2012	4,616	471	291
2013	4,511	473	266
Totals	22,349	2,025	1397
Source: Nashua Police Department 2013 Annual Report			

In New Hampshire, emergency department visits related to heroin abuse have increased. In 2012 there were 106 reported ED visits related to heroin while in 2013 there were 224 visits, an increase of 111%.[7] Narcan (Naloxone) is an opiate antagonist that reverses the effects of opiates in the human body. Narcan is used to counteract the effects of an opiate overdose. According to the NH Bureau of EMS in 2011, Narcan was administered in 596 cases and increasing to 743 cases in 2012. In 2013, that number grew to 832 cases.[7] Figure (8.6) demonstrates that drug use has been involved in many of the fatal car crashes in New Hampshire.

Figure 8.6 Fatal NH Car Crashes Involving Drug Use in NH, 2008-2012



Source: NH Department of Safety

Treatment for Alcohol and Illicit Drug Abuse

In the 2012 National Survey on Drug Use and Health report, 1.5% of people living in the United States received treatment for a drug related problem (4 million), of which:

- 1.2 million received treatment for both alcohol and illicit drugs,
- 1 million received treatment for the use of illicit drugs but not for alcohol,
- 1.4 million received treatment for alcohol but not illicit drugs[3]

The 2012 NSDUH report defines "specialty treatment" as treatment received at any of the following facilities: inpatient hospital care, inpatient/ outpatient rehabilitation centers or mental health center. A primary requirement of these respondents who needed or accessed specialty treatment, was their need to meet a Diagnostic Statistical Manual of Mental Disorders diagnosis of having dependence to alcohol/ illicit drugs or abuse of one of these substances. The survey showed that:

- 23.1 million people 12 years of age or older needed treatment for a drug related problem,
- 2.5 million people 12 years of age or older received treatment at a specialty facility,
- 20.6 million people 12 years of age or older needed treatment but were unable to receive it.[3]

Of the 20.6 people 12 years old and older that needed treatment but did not receive it:

- 94.6% felt they did not need treatment
- 3.7% felt they needed treatment but did not make an effort to seek treatment
- 1.7% felt they needed treatment and made an effort but did not receive treatment.[3]

Of the 1.7% who needed treatment, but did not receive it and made an effort, they reported the reason for not receiving services as:

- 38.2% had no health insurance coverage and could not afford the cost
- 26.3% believed not ready to stop using
- 10.1% had health insurance coverage but did not cover treatment or did not cover cost

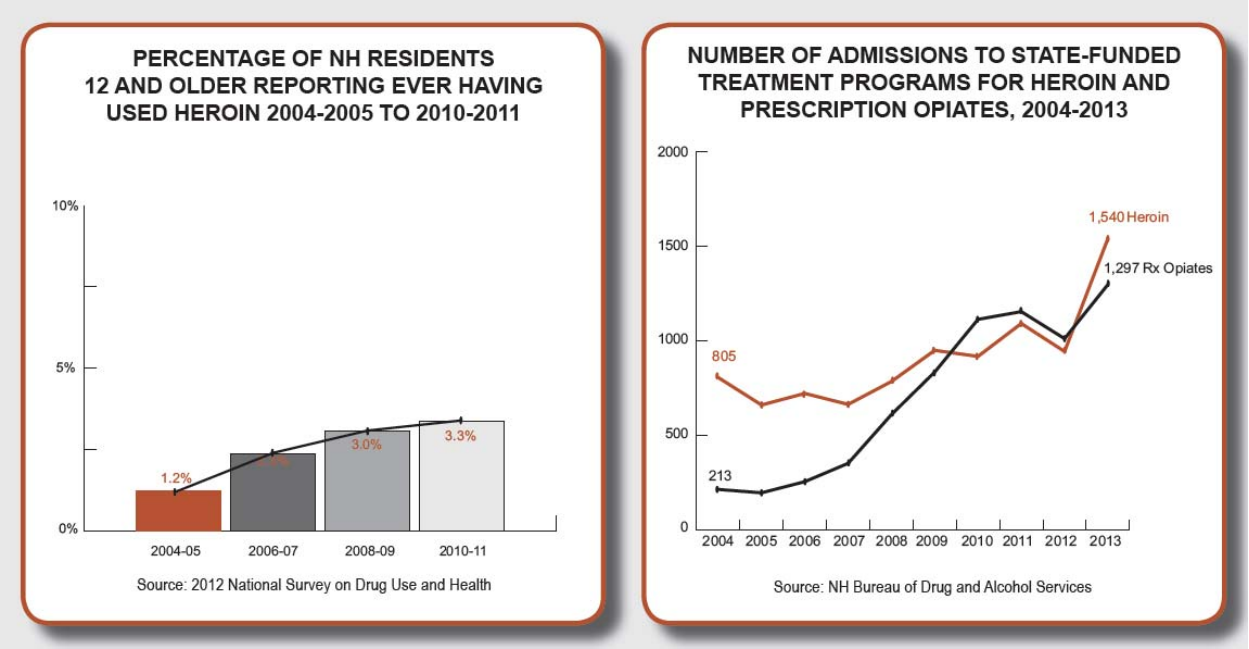
Community Spotlight: Pelham Community Coalition

Like the tagline for their newly formed prevention coalition proclaims, the Pelham community is "Planting foundations for good decisions." Beginning in May 2013, Pelham residents began organizing to raise awareness in the community about substance misuse and have been working together as the Pelham Community Coalition (PCC). Their early successes have included initiating a high school survey using a subset of questions from the Youth Risk Behavior Survey (YRBS). The YRBS was designed to focus attention on behaviors among youth related to the leading causes of mortality and morbidity in youth and adults and to assess how these risk behaviors change over time. In October 2013, PCC conducted a full day of events in all three of its schools to raise awareness about substance abuse and the need for good decision making. During the Spring of 2014, the coalition worked with the national Substance Abuse and Mental Health Services Administration (SAMHSA) organization to sponsor a Town Hall Meeting in Pelham.

- 9.5% believed treatment might have negative effect on job
- 8.9% did not know where to go for treatment
- 8.2% had no transportation/Inconvenient
- 7.9% believed might cause neighbors/community to have negative opinion
- 7.1% did not have time for treatment.[3]

In New Hampshire, opiate addiction comes in different forms. Heroin is an opiate and so are medications that can be abused. Over the last few years, addictions to prescription medications and heroin have been fluctuating in the state. Figure 8.7 depicts the number of admissions to state funded treatment facilities. While treatment facilities had higher rates of prescription opiate clients between 2010-2012, heroin surpassed prescription opiates in 2013 as the reason to seek treatment at state funded facilities. Heroin use has increased as reported in the NSDUH from 1.2% in 2004-2005 to 3.3% of people 12 and older in 2010-2011.[3]

Figure 8.7 Heroin Use and Admissions to State Funded Treatment Programs



Tobacco

Tobacco is the leading preventable cause of death in the United States killing more than 400,000 each year, and affecting millions of people living with diseases associated to smoking. Since 1964, there have been over 20 million preventable deaths associated with smoking and secondhand smoke. Due to the current rate of smoking among youth under 17 years of age, future projections estimate 5.6 million of today's youth will die prematurely due to illness related to smoking. From 2009-2012, the estimated annual cost of smoking for the United States ranged from $332.5 to $489 billion for 2009-2012. This figure includes a range of $132.5-175.9 billion for medical care, $151 billion for productivity lost due to deaths associated with smoking and $5.6 billion for productivity lost due to secondhand smoke.

According to research published in the Tobacco Control Journal, the "cost per smoker" averages $517 per year for productivity lost due to absenteeism, $3077 per year for productivity lost due to smoke breaks, and $2056 per year in additional health care cost.[12]

Tobacco affects the human body in many ways. With more than 7,000 toxic chemicals found in a cigarette, tobacco use will damage the body, compromise the immune system and cause premature death. Ninety percent of all lung cancer deaths are caused by smoking. Lung cancer, heart disease, chronic obstructive pulmonary disease, and stroke are the leading causes of death that can be attributed to cigarette smoking in the United States.[13]

Adults and Tobacco

In 2012, according to the National Survey on Drug Use and Health (NSDUH), 26.7% or over 69 million of Americans 12 years and older reported being current smokers.[3] According to the 2012 BRFSS, 18.4% (CI 13.0-23.8%) of Nashua residents reported current smoking compared to 15.9% (CI 12.8-19.1%) of the GNPHR residents and 16.9% (CI 15.5-18.2%) of New Hampshire residents.[10] The Healthy People 2020 objective is to reduce adults reporting current smoking to 12% and the NH State Health Improvement Plan (SHIP) goal is to reduce smoking to 12% by 2020.[9,16] Even though New Hampshire and Nashua percentages of reported current smoking are lower than the national average, neither meets the Healthy People 2020 goal or the SHIP goal. Additionally in NH, the annual average number of cancer deaths is 758. The average number of smoking attributable deaths for lung, trachea and bronchus deaths is 614 (Table 8.6).

Table 8.6 Smoking Attributable Mortality for Lung, Trachea, Bronchus Cancer Deaths in NH, 35 years and older, 2011-2012

	Annual Average Number of Cancer Deaths	Annual Average Number of Smoking Attributable Deaths for Lung, Trachea and Bronchus Cancer	Annual Average Percent of Smoking Attributable Deaths for Lung, Trachea and Bronchus Cancer
2011-2012	758	614	81%
Source: NH DHHS; WISDOM			

Youth and Tobacco

Even though the percent of youth tobacco use has decreased from 36% in 1995 to 19.8% in 2011 there is still work to be done regarding tobacco prevention.[14] Young people are subject to marketing with pro-tobacco messages via movies, magazines, peers etc. There is also the introduction of new tobacco products that young people may not associate with the same harmful effects of smoking tobacco, such as electronic cigarettes.[14] Table 8.7 shows rates of tobacco use and tobacco perception of harm in the youth of the GNPHR. About 12% of Nashua high school students have smoked cigarettes on one or more of the past 30 days and 43% think it would be easy for them to get cigarettes if they wanted too. The Healthy People 2020 objective is to reduce youth smoking to 16%.[9] New Hampshire and the GNPHR have already surpassed this national goal but tobacco prevention needs to continue in New Hampshire

to inform youth of the harmful effects of tobacco smoke and new tobacco products, and to reduce the number of youth who have even smoked or are current smokers.

Table 8.7 High School Students and Tobacco Use, 2013

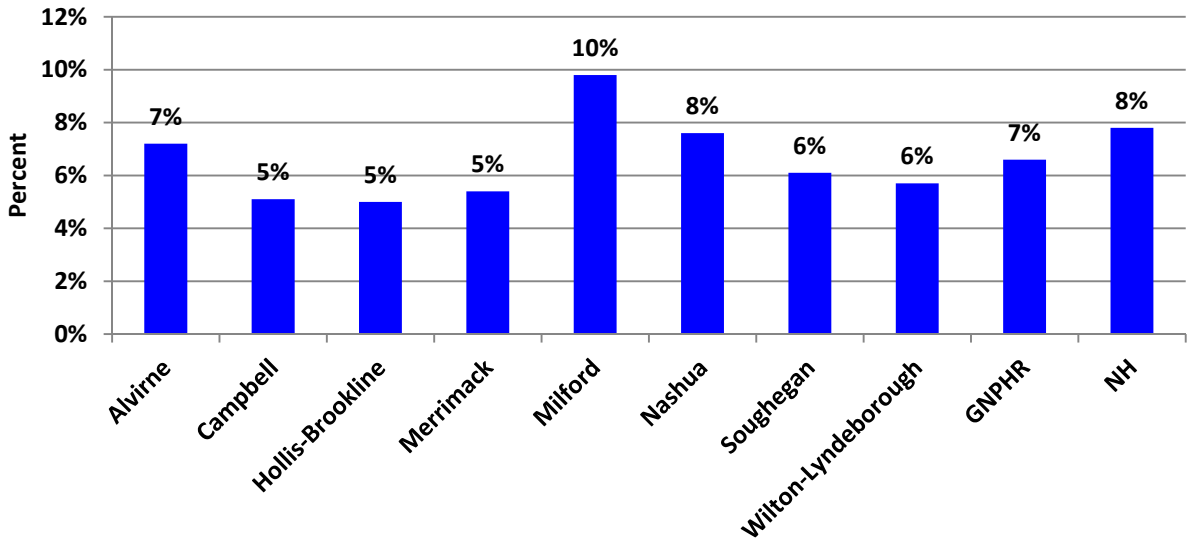
	Nashua	GNPHR	NH
Smoked cigarettes on one or more of the past 30 days	12.8%	13.1%	14.4%
Used chewing tobacco, snuff, or dip on one or more of the past 30 days	5.1%	5.1%	6.8%
Think people are at great risk of harming themselves (physically or in other ways), if they smoke one or more packs of cigarettes per day	66.5%	68.9%	66.8%
Think it would be very easy for them to get some cigarettes if they wanted to	43.4%	41.1%	42.0%
Source: NH DHHS; YRBS			

In the GNPHR, 69% of high school students perceive harm if they smoke one or more packs of cigarettes per day, which is similar to the state at 67%, although there are some variations by school and grade. (Table 8.8). About 5-10 % of GNPHR high school students had their first cigarette before they turned 13 years of age (Figure 8.8).[8]

Table 8.8 Perception of Harm – Smoking one or more packs of cigarettes per day

Perception of Harm – Smoking one or more cigarettes per day					
	9th Grade	10th Grade	11th Grade	12th Grade	Overall
Alvirne HS	70.5%	69.3%	65.7%	71.9%	69.2%
Campbell HS	65.3%	63.5%	66.3%	64.4%	65.0%
Hollis-Brookline HS	74.1%	75.4%	75.8%	80.7%	76.6%
Merrimack HS	64.0%	71.2%	68.4%	68.0%	67.7%
Milford HS	67.2%	65.6%	68.9%	73.5%	68.4%
Nashua North	59.9%	64.7%	68.0%	67.2%	64.8%
Nashua South	63.1%	71.2%	68.6%	70.4%	68.0%
Souhegan HS	52.2%	60%	66.3%	63.3%	61.8%
Wilton-Lyndeborough	66.7%	70.0%	72.5%	71.4%	70.2%
GNPHR (ALL)	*	*	*	*	68.9%
State of NH	64.7%	66.4%	68.2%	68.7%	66.8%
*Source: NH DHHS; YRBS; *Data not available*					

Figure 8.8 Students that Smoked a Whole Cigarette for the First Time before Age 13, 2013



Source: NH DHHS; YRBS

Substance abuse and tobacco use cause lifelong health effects that are completely preventable. Substance abuse in the Greater Nashua Public Health Region is on the rise. There is much work to be done in prevention, treatment and recovery services in the region to lower the incidence of substance abuse. Through the work of local and regional substance misuse prevention coalitions and tobacco prevention efforts, we hope to meet the Healthy People 2020 and SHIP goals of reducing substance abuse and tobacco use in the GNPHR. Prevention involves everyone in the community to be effective. The community includes parents, businesses, schools, safety officials, government and healthcare. No one group has sole responsibility for this problem. It is a community problem and as such needs the entire community's participation in implementing effective interventions to decrease substance abuse. Treatment for addictions can lead to a sustained recovery.[4] Long term recovery is possible. People can recovery from addiction and live productive lives.

For more information on quitting tobacco, visit www.TryToStopNH.org or call 1-800-QUIT-NOW!

New Hampshire Tobacco Helpline
Try to Stop. We Can Help.

[1]Executive Office of the President of the United States. (2014, March). *National Drug Control Budget FY2015: Funding Highlights.* Retrieved May 8, 2014, from Office of National Drug Control Policy: http://www.whitehouse.gov/sites/default/files/ondcp/about-content/fy_2015_budget_highlights_-_final.pdf

[2]National Institute on Drug Abuse. (2012, December). *Trends and Statistics*. Retrieved May 08, 2014, from National Institute on Drug Abuse: http://www.drugabuse.gov/related-topics/trends-statistics

[3]U.S. Department of Health and Human Services. (2013). *Results from the 2012 National Survey on Drug Use and Health: Summary of National Findings*. Retrieved May 9, 2014, from SAMHSA.gov: http://samhsa.gov/data

[4]National Institute on Drug Abuse. (2012, November). *NIDA Info Facts: Understanding drug abuse and addiction*. Retrieved May 21, 2014, from www.drugabuse.gov: http://www.drugabuse.gov/publications/drugfacts/understanding-drug-abuse-addiction

[5]Office of National Drug Control Policy, Drug Policy Clearinghouse. (2010). *State of New Hampshire Profile Drug Indicators*. Retrieved May 8, 2014, from www.whitehousedrugpolicy.gov: http://www.whitehousedrugpolicy.gov/statelocal/nh/nh.pdf

[6]Health in Aging. (2012, March). *Drug and Substance Abuse*. Retrieved June 05, 2014, from Health in Aging: http://www.healthinaging.org/aging-and-health-a-to-z/topic:drug-and-substance-abuse/

[7]NH Information and Analysis Center (NHIAC). (2014, May). *Drug Intelligence Assessment: New Hampshire Drug Overdoses & Heroin Analysis.* Concord.

[8]NH Department of Education. (2013). *Youth Risk Behavior Survey Results.* Concord.

[9]Healthy People 2020. (2014). *Substance Abuse: 2020 Topic and Objectives.* Retrieved July 28, 2014, from Healthy People 2020: http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=40

[10]Bureau of Public Health Statistics and Informatics. (2013). *New Hampshire Behavioral Risk Factor Surveillance Survey Data.* Concord: New Hampshire Department of Health & Human Services.

[11]Nashua Police Analysis Unit. (2014). *Nashua Police Department 2013 Crime Report.* Nashua: Nashua Police Department.

[12]U.S. Department of Health and Human Services. (2014). *The Health Consequences of Smoking-50 Years of Progress. A Report of the Surgeon General.* Atlanta: U.S. Department of Health and Human Services, Center for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

[13]U.S. Centers for Disease Control and Prevention. (2014). *Health Effects of Cigarette Smoking.* Retrieved May 8, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/index.htm

[14]NH Division of Public Health Services. (2012). *Data Brief: Tobacco Use Among Youth in New Hampshire.* Concord: NH Division of Public Health Services.

[15]Klein, M. P. (2013, August 19). *Combating Misuse and Abuse of Prescription Drugs: Q&A with Michael Klein, Ph.D.* Retrieved October 07, 2014, from U.S. Food and Drug Administration: http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm220112.htm

[16]NH Division of Public Health Services. (2013-2020). *New Hampshire State Health Improvement Plan.* Concord: Department of Health and Human Services.

41% of fatal NH crashes were caused by impairment. NH Driving Towards Zero is trying to eliminate driving fatalities, visit http://www.nhdtz.com for more information!

"Nonviolence doesn't always work - but violence never does".

- *Madge Micheels-Cyrus*

Violence, Injury & Poisonings

Contents

Violence and injury affect everyone. Combined, these accounted for 51.3% of all deaths among persons ages 1-44 in the United States. Violence and injury do not discriminate and people are affected regardless of age, race or economic status. Violence and injury are responsible for more deaths in people ages 0-44 years than heart disease, HIV, cancer and influenza. Violence and injury refers to vehicle accidents, homicides, suicides and falls, among others[1]. It is important to talk about violence and injury because:

- Injury is the cause of over 187,000 deaths each year,
- 2.8 million people need to be hospitalized due to injury each year,
- 32.4 million people go to the emergency department for treatment each year due to injury,
- Violence and Injury cost over $406 million a year in healthcare costs and productivity loss,
- Violence leads to serious injuries, and at many times, death. It also leads to other significant mental and physical health consequences such as depression and anxiety, pregnancy complications, and even chronic diseases such as diabetes and heart disease,
- Violence undermines the sense of safety and security that is important to the well-being of families and communities,
- Both violence and injury are preventable.[1]

Violence

Violence is widespread throughout the Greater Nashua Public Health Region (GNPHR), New Hampshire and the Nation. Violence impacts more than an individual, it impacts families and communities in many ways: physically, psychologically, and economically. Violence occurs throughout the lifespan and can affect anyone from a newborn to an elderly person. Child maltreatment, youth violence, intimate partner violence, sexual violence, suicide, homicide and elder abuse are ways in which violence affects our society. Each of these forms of violence affects an individual but does not stop there, the effects ripple throughout our communities and society as a whole.[2]

Child Maltreatment

Child maltreatment encompasses any form of abuse or neglect of a child (under the age of 18) by parent, guardian or person in a custodial role.[3] Child protective services received 3.4 million reports of child abuse and neglect in 2012. Of those reports, 686,000 children were deemed as being maltreated and 1,640 children had a fatal outcome due to abuse and neglect.[4] Between the years of 1990 and 2010, Child Protective Services reports the rates of sexual abuse against children declined 62%, physical abuse declined 56% and neglect declined 10%.[5] It is important to note that these are declines in reported cases and non-Child Protective Services studies estimate that 1 in 4 U.S. children may be victims of maltreatment.[4]

The U.S. 2012 Child Maltreatment report states that in New Hampshire, 901 children were victims of maltreatment and 114 of those were children under 1 year of age. Most of the cases in 2012 were deemed neglect (760 cases), 122 were deemed sexual abuse and many of the children (45.6%) had a reported disability. The rate of maltreatment per 1,000 children for New Hampshire is 3.3.[5] The Healthy

People 2020 objective is 8.5 per 1,000 children. New Hampshire has surpassed the Healthy People 2020 objective[6] but prevention work needs to continue in New Hampshire so that the rate continues to decrease. The rate for maltreatment related deaths per 100,000 children for New Hampshire was 0.036 in 2012, this translates to 1 child in the State.[5] The Healthy People 2020 objective is 2.1 per 100,000 children.[6] New Hampshire has surpassed this 2020 objective.

Adverse childhood experiences (ACEs) can be described as verbal, physical, sexual abuse along with many other family dysfunctions that occur during a person's childhood. ACEs have been linked to negative health outcomes in adulthood. These negative outcomes include the abuse of substances, depression, cardiovascular disease, diabetes, cancer and premature mortality. There are many consequences to adverse childhood experiences not just diagnosable ones, children who experience maltreatment are more likely to be arrested as teenagers, to not finished high school and to be teen parents. Adverse childhood experiences also have a financial consequence. Childhood healthcare costs, adult healthcare costs, child welfare costs, criminal justice costs among others. In 2008 in the United States, the estimated cost of child maltreatment was $124 billion.[22]

Youth Violence

Any harmful behaviors that may start early and continue into young adulthood are considered youth violence. Young people can be victims, offenders, or witness violence. Many behaviors are considered youth violence; such as bullying, slapping, hitting, robbery and assault (with or without weapons). Youth violence can have emotional consequences such as depression and anxiety or they can result in physical consequences, such as injury and even death.[7] In the United States 4,828 people ages 10-24 were victims of homicide in 2010. Among those victims 82.8% were killed with firearms. The cost of homicides and injuries from assault results in medical costs and lost productivity estimated at $16 billion. In 2011, emergency departments in the U.S. treated 707,212 young people ages 10-24 for physical assault related injuries. In 2010, juveniles made up 13.7% of all violent arrests and 22.5% were for property crimes arrests. The 13.7% consisted of 784 youth arrested for murder, 2,198 for forcible rape and 35,001 for aggravated assault.[23]

Bullying is also considered youth violence. In 2011, 20.1% of the nation's youth surveyed reported being bullied at school, while 16.2% reported being bullied electronically (via text, social media). The prevalence for bullying is higher among females than males. During the 2009-2010 school years, 17 homicides occurred at schools throughout the U.S.[8]

In the GNPHR, the 2013 Youth Risk Behavior System (YRBS) was completed by 7,927 students. In the survey, students were asked about youth violence and highlights of this data include:

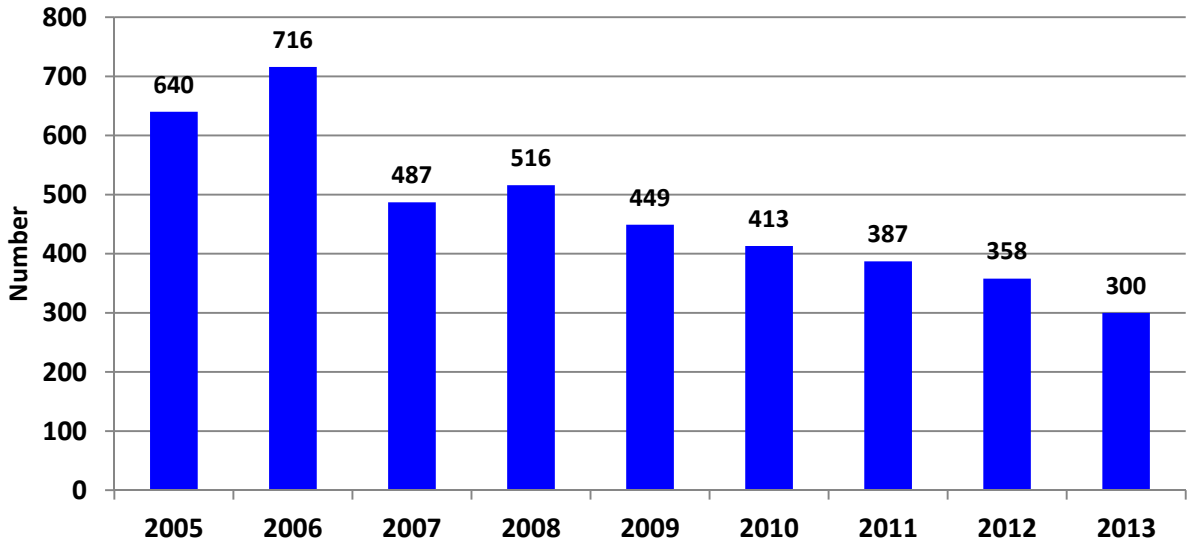
- 5.4% were injured in a physical fight and had to be treated by a doctor or nurse one or more times during the past 12 months,
- 7.2% were in a physical fight on school property on one or more times during the past 12 months,
- 23.7% were bullied on school property in the past 12 months,

- 18.7% were electronically bullied in the past 12 months,
- 5.6% felt unsafe at school or on their way to or from school on one or more of the past 30 days.[9]

The Healthy People 2020 objective is to reduce bullying on school property in the past 12 months to 17.9%.[6] The GNPHR YRBS states 23.7% of students were bullied on school property in the past 12 months showing that the region has not achieved the Healthy People 2020 objective.

The Nashua Police Department's 2013 Annual Report states that Juvenile arrests in Nashua have declined in the last 5 years. In 2013, the Nashua Police Department reported a 40% decrease in juvenile arrests from an average of 496 to 300 (Figure 9.1). The top three reasons for juvenile arrests in Nashua were simple assault (16%), larceny (19%) and disorderly conduct (11%). The decline in reported juvenile arrests varies by age with arrests of 13 year olds down 43%, 14 year olds down 41%, and 16 year olds up 21%.[10]

Figure 9.1 Juvenile Arrests Under 17 Years of Age, Nashua Police Department



Source: Nashua Police Department, 2013 Annual Report

Intimate Partner Violence

Intimate partner violence refers to physical, sexual, or psychological harm by a person in a close relationship (current spouse, former spouse or dating partner). Intimate partner violence can be a one-time occurrence or it can be ongoing. Of all homicides in the U.S. in 2007, 14% were attributed to intimate partner violence, accounting for 2,340 deaths that year. The majority of deaths (70%) were women and 30% were men. The cost of intimate partner violence across the nation including medical costs and lost productivity was estimated in 2003 to be $8.3 billion. These numbers are underestimated. Many victims do not report intimate partner violence due to fear and stigma.[11]

In the GNPHR, intimate partner violence is visible in the 2013 YRBS data of high school students. Highlights from the survey include:

- 10% of those who dated or went out with someone during the past 12 months were hurt physically on purpose by the person dated,
- 12.2% of those who dated or went out with someone during the past 12 months, were forced to do sexual things unwillingly.[9]

Bridges Domestic and Sexual Violence Support has a 24 Hour Support Line that can be accessed by calling 603-883-3044.
For more information visit http://bridgesnh.org.

Sexual Violence

Sexual violence is described as any sexual activity where consent was not obtained or given freely. Sexual violence can be experienced by anyone. Demographically, most of the victims are women while most of the perpetrators are men. The perpetrator is usually someone the victim knows (a friend, family member, neighbor) and sexual violence can include non-physical acts of violence (sexual harassment, threats,). According to the Centers for Disease Control and Prevention, 8% of nationally surveyed high school students reported being forced into sexual acts. It is estimated that 20-25% of female college students experienced an attempted or completed forced sexual act during their college enrollment. Close to 1 in 5 females and 1 in 71 males in the U.S. have been forced into a sexual act in their lives. These numbers are underestimated. Many victims do not report sexual violence due to fear and stigma.[12]

The Nashua Police Department reports that in 2013 there were 74 reported forcible sex offenses and 18 non-forcible sex offenses (See Table 9.4).[10] In the 2013 YRBS for the GNPHR, high students were asked about sexual offenses:

- 6.1% have been physically forced to have sexual intercourse when they did not want to,
- 7.9% experienced sexual advances because of other students drinking.[9]

Table 9.1 Nashua Sexual Offenses, 2013

	2012	Average 2005-2012	2013	% Change Between Average and 2013
Sex Offenses, Forcible	103	87	74	-15%
Sex Offenses, Non-Forcible	16	32	18	-44%
Source: Nashua Police Department				

Sexual violence has a range of health consequences from emotional to behavioral and physical. People who have experienced sexual violence may experience chronic pain and sexually transmitted diseases. In some cases, victims may develop depression or other mental health disorders. Behavior can also be negatively impacted in victims of sexual abuse, such as engaging in risky behavior like smoking or abusing alcohol or drugs.[12]

Assaults, Homicides & Suicides

Assaults, homicide and suicide are all forms of violence. The Bureau of Justice Statistics National Crime Victimization Survey reports that violent and property crime rates were on the rise in 2012. Highlights from that report indicate:

- The victimization rate for violent crimes rose from 22.6 per 1,000 people age 12 and over to 26.1 in 2012,
- Victimization for violent crimes that were not reported to police went up to 14.0 in 2012 from 10.8 in 2011,
- The rate in property crimes also increased in 2012 to 155.5 from 138.7 in 2011,
- Violent crime in 2012 remained stable for Caucasians and Hispanics and increased slightly for African Americans,
- Urban areas continued to experience higher rates of violence than rural areas in 2012.[13]

Homicide and suicide are two of the 15 leading causes of death in the United States. Suicide was the 10th leading cause of death in 2011 but in some age groups (15-24, 25-34) it is the second leading cause of death followed by homicide.[3] In 2010, more than 16,250 people were victims of homicide and more than 38,360 died as a result of suicide.[1] For more information on suicide, reference chapter 2 of this Community Health Assessment.

According to the Nashua Police Department 2013 Annual Report, most person crimes are assaults (85%). There was a decrease in assaults in 2013. Aggravated assaults decreased by 18%, simple assaults decreased by 7% and intimidation decreased by 49%. Homicides in 2013 increased 150% from the average of 2, there was 1 reported homicide event in 2012 and 5 homicide events in 2013 resulting in 6 deaths (Table 9.2) Robberies are also violent crimes and in 2013 they increased 41% from the average. Of all robberies, 32% involved a knife and 27% involved a firearm.[10]

Homicide and suicide are two of the 15 leading causes of death in the United States.

Suicide was the 10th leading cause of death in 2011 but in some age groups (15-24, 25-34) it is the second leading cause of death followed by homicide.

Table 9.2 Nashua Person Crimes

Crime Category	Year 2012	Average 2005-2012	Year 2013	% Change between average and 2013
Assault Offenses*	1,141	1,082	919	-15%
Aggravated Assault	94	94	77	-18%
Simple Assault	907	806	749	-7%
Intimidation*	139	182	93	-49%
Homicide Offenses*	1	2	5	+150%
Kidnapping*	16	18	8	-59%
Abduction/ Attempt	0	2	0	-100%
Domestic/Custody/Restraint*	16	17	8	-53%
Robbery*	48	44	62	+41%
*Source: Nashua Police Department; *=indicates statistical significance*				

In Nashua, property crimes decreased in 2013 by 2% while burglaries decreased by 14%. The majority of the burglaries were residential (80%), while 18% were industrial. Destruction of property decreased 17% from the average. The majority of the damaged properties were cars. The theft of motor vehicles decreased 29% from the average. The majority of the motor vehicle thefts occurred during the summer months. Stolen property offenses have increased 97% from the average[10] (Table 9.3).

Table 9.3 Nashua Property Crimes

Crime Category	Year 2012	Average 2005-2012	Year 2013	% Change between average and 2013
Arson	31	27	9	-67%
Burglary	373	376	322	-14%
Destruction	770	864	717	-17%
Extortion	1	1	1	0%
Larceny/Theft	1,912	1,828	1,899	+4%
MV Theft	90	112	80	-29%
Stolen Property*	57	33	65	+97%
*Source: Nashua Police Department; *=indicates statistical significance*				

Regional Crime Statistics

In towns outside of Nashua in the GNPHR, simple assault, intimidation and vandalism of property are the most common crimes committed. In 2013, Amherst and Hudson had the most arrests for shoplifting and Hudson and Milford had the most arrests for simple arrest. For the towns listed in table 9.4, there were 27 kidnappings/abductions in 2012 to 2013 and 40 arrests for statutory rape. Pelham had the most arrests (222 arrests) for drug/narcotic violations in 2012 and 2013.[21] According to the Trauma and EMS Information System, there were 33 EMS calls for firearms/stabbings based on assault or self-inflicted.

Table 9.4 Crime Statistics from Towns in the GNPHR

Offense	Amherst		Hudson		Litchfield		Merrimack		Milford		Mont Vernon		Pelham		Wilton	
	'12	'13	'12	'13	'12	'13	'12	'13	'12	'13	'12	'13	'12	'13	'12	'13
Kidnapping/ Abduction	2	2	3	8	1	0	2	0	3	0	0	0	2	2	0	2
Forcible Rape	3	1	6	8	1	1	0	1	4	4	1	1	1	5	4	0
Statutory Rape	4	3	4	5	1	0	2	0	6	5	1	1	4	1	2	1
Aggravated Assault	1	5	19	23	5	5	5	2	21	12	1	1	9	14	6	2
Simple Assault	45	49	163	192	24	21	60	71	153	136	9	5	59	76	25	14
Intimidation	16	19	74	104	13	9	9	12	112	73	6	1	59	71	15	16
Arson	2	1	4	4	2	1	0	0	2	6	1	0	1	0	3	0
Burglary/Breaking & Entering	18	26	68	67	25	24	34	28	43	26	5	7	42	27	20	10
Counterfeiting/ Forgery	6	10	31	30	1	1	20	5	12	17	0	1	4	5	2	1
Destruction/ Damage/ Vandalism of Property	83	71	227	165	36	45	129	129	239	148	14	9	197	131	40	38
Credit Card/Automatic Teller Fraud	13	23	23	27	9	6	17	22	28	17	1	4	21	20	5	5
Impersonation	15	9	14	14	6	4	9	19	9	6	2	3	14	8	7	3
Shoplifting	77	172	60	84	1	1	19	41	12	21	0	0	3	2	2	1
Motor Vehicle Theft	1	1	21	9	2	3	9	8	15	9	3	1	9	7	3	5
Stolen Property Offenses	10	11	31	23	3	3	7	2	16	17	0	2	10	6	4	2
Drug/Narcotic Violations	78	85	73	96	14	16	33	42	68	74	4	5	103	119	23	8

*Some towns not included because data was not available or the town did not have the offenses listed. Not all offenses are listed in this table.

Source: FBI, National Incident-Based Reporting System (NIBRS), http://www.fbi.gov/stats-services/crimestats.

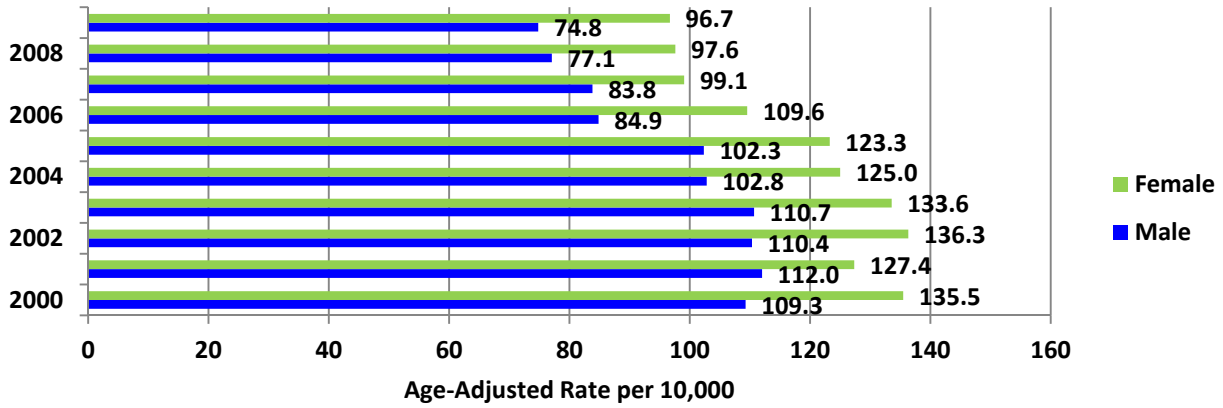
Unintentional Injury

Unintentional injuries can happen to anyone and can occur at home, in a motor vehicle or in many other environments. Injuries can range from dog bites to falls to unintended poisonings. Injuries may be preventable if safety precautions are taken. Motor vehicle crashes are one of the leading causes of death for Americans of all ages, killing more than 30,000 each year and costing approximately $99 billion in medical and productivity lost each year.[14] In 2005 in New Hampshire, the cost of motor vehicle accidents was $143 million. Of that amount $2 million can be attributed to medical costs, while the other $143 million is attributed to lost productivity.[15]

In the United States from 2000 to 2009, deaths related to motor vehicle crashes have decline from 14.9 per 100,000 to 11.0. Injury rates in children, as a result of a motor vehicle crashes, have also decreased from 1,130 to 722. These successes are due in part to safer cars, safer roads and improved driving behaviors. These successes may also be related to laws requiring seat belts for children in all 50 states and seat belt laws for adults in 49 states. New Hampshire is the only state which does not have an adult seatbelt law.[16] According to the Trauma and EMS Information System, in 2013, there were 306 individual transports by EMS for motor vehicle accidents in Nashua and an additional 424 in the rest of the region. The rate of hospital visits due to motor vehicle crashes is higher in females than males, and has decreased slightly from 2000 to 2009 in the GNPHR (Figure 9.2).[24]

Seatbelts reduce the chance of serious injury or death by 50%. Men are 10% less likely to wear a seatbelt than women. Younger adults (under 35 years) are less like to wear a seatbelt compared to older adults (over 35 years). Child safety seats reduce the risk of death in infants (less than a year old) by 71%, and in toddlers 1 to 4 years of age by 54%. Booster seats reduce the risk for children 4-8 years old by 45%. From 2009-2010, of children who died in motor vehicle crashes, more African American (45%) and Hispanics (46%) were not using seatbelts compared to Caucasian (26%) children. Children using seatbelts depend on adults using seatbelts. Forty percent of children who do not use seatbelts have parents that do not use seatbelts.[17]

Figure 9.2 Motor Vehicle Crash Hospital Visits by Gender, GNPHR, 2000-2009



Source: NH DHHS; WISDOM

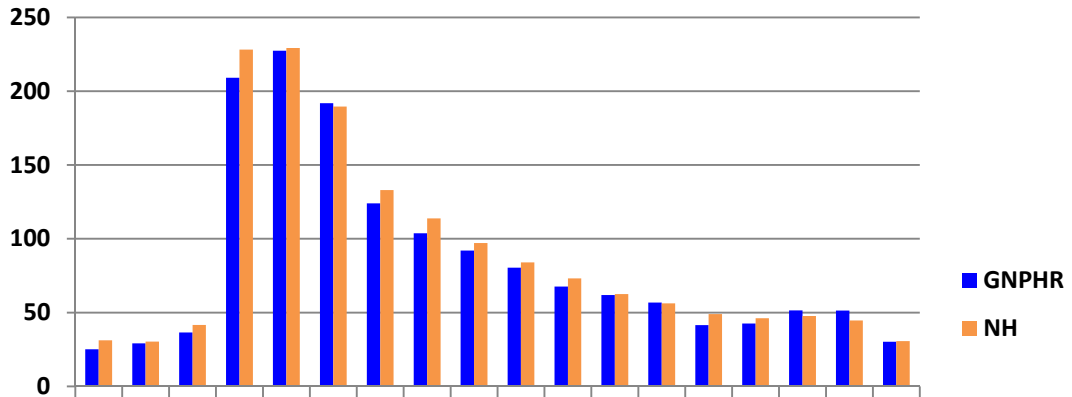
Young drivers account for 14% of all drivers, yet they make up 30% of the total cost of motor vehicle crashes for males and 28% of the total costs for females. Among drivers 16-19 years old, males are twice as likely to have a motor vehicle crashes than females. Younger drivers are more likely to speed than older drivers and younger drivers are less likely to wear a seatbelt than older drivers. In 2011, high school students reported only 54% seatbelt use when riding with someone else. Of the fatal motor vehicle crashes that occurred in 2010 in the U.S. among 15-20 years-olds, 39% had been speeding and 25% had been drinking prior to the crash.[18]

In the GNPHR, the 2013 YRBS asked students about motor vehicle safety. The highlights are listed below:

- 8.1% never wore a seatbelt while driving,
- 9.5% rarely wore a seat belt when riding in the car driven by someone else,
- 19.6% rode one or more times in the past 30 days in a car or other vehicle driven by someone who had been drinking,
- 9.7% drove after drinking alcohol,
- 48.3% texted or e-mailed while driving.[9]

Driving distracted has become a significant problem in the U.S., resulting in over 400,000 injuries in 2010 as well as 3,267 deaths. Driving distracted can mean taking your eyes off the road, your hands off the wheel or your mind off of driving.[19] In the GNHPR 48.3% of high school students surveyed reported texting or emailing while driving.[9] Younger adults have a higher rate of motor vehicle crashes nationally, and also in the region as seen in the figure 9.3.

Figure 9.3 Motor Vehicle Crash Hospital Visits by Age, 2005-2009



	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 and older
GNPHR	25	29	37	209	228	192	124	104	92	80	68	62	57	42	43	51	51	30
NH	31	30	42	228	229	190	133	114	97	84	73	63	56	49	46	48	45	31

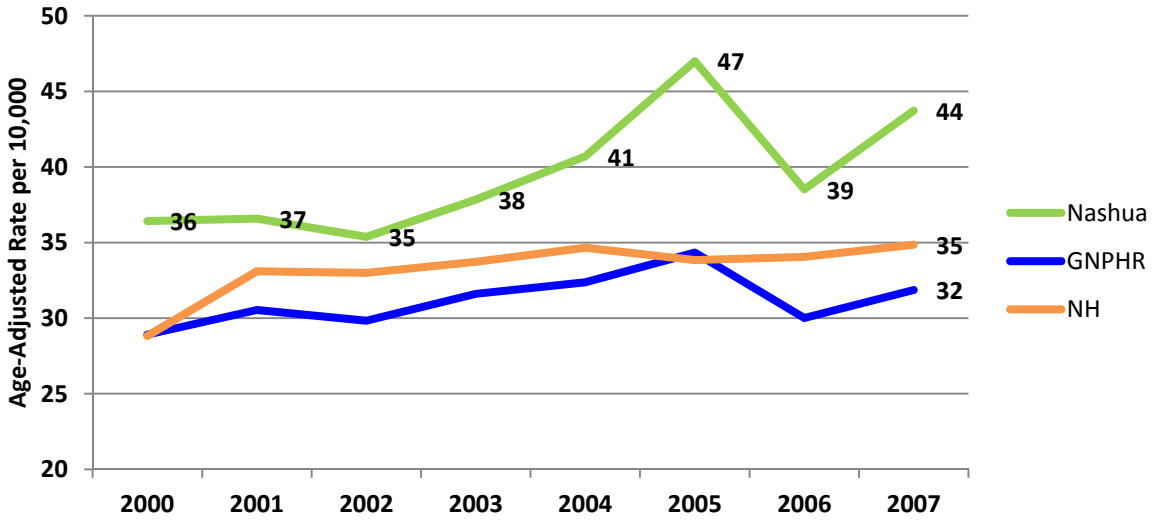
Source: NH DHHS; WISDOM

Poisonings

Poisonings can happen from a variety of substances. The 2012 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS) reports that in 2012, 3,373,025 encounters were recorded while 2,275,141 human exposures and 66,440 animal exposures where recorded. In 2012, 1,025,547 information calls were received by Poison Control Centers. The data collected by the NPDS shows a 6.9% decline in poisonings in 2011 and human exposures with less serious outcomes have decreased 3.7% per year since 2008, while those with more serious outcomes (moderate, major, or death) have increased by 4.6% per year since 2000.[20]

In 2007 in the GNPHR, the age-adjusted rate for poisoning related emergency department visits for all ages was 32 per 10,000 compared to 44 per 10,000 in Nashua (Figure 9.4). The age-adjusted rate for poisonings has increased from 2000 to 2007 in Nashua from 36 to 44.[20] From 2005 to 2009, there were more poisoning related emergency department visits for people ages 15-30 than for children under the age of 4 (Figure 9.5).

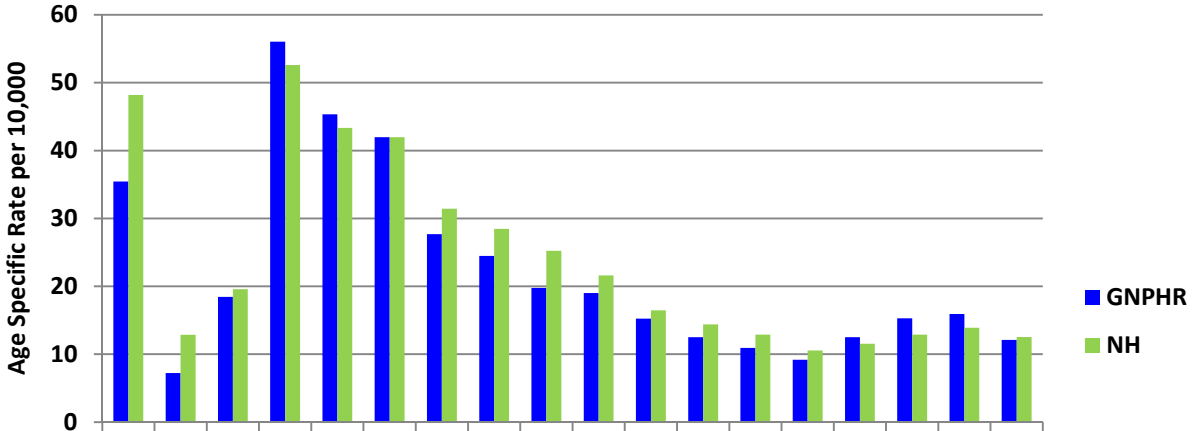
Figure 9.4 Poisoning Related Emergency Department Visits, All Ages, 2000-2007



Source: NH DHHS; WISDOM

1,025,547 informational calls were received by Poison Control Centers in the United States in 2012.

Figure 9.5 Poisoning Related Emergency Department Visits by Age, 2005-2009



	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 and older
GNPHR	35	7.2	18	56	45	42	28	24	20	19	15	13	11	9.2	13	15	16	12
NH	48	13	20	53	43	42	31	28	25	22	16	14	13	11	12	13	14	13

Source: NH DHHS; WISDOM

Unintentional Poisonings are preventable. Some prevention tips include:

- Lock up your medications and toxic products,
- Read the label and follow the directions. Make sure to read all warnings to children,
- Don't keep it if you don't need it. Safely dispose of unused or unneeded medications. To dispose of medicines, mix them with coffee grounds or kitty litter and throw them away. You can also turn them in at a local take-back program or during National Drug Take-Back Events. There are also permanent drug take back boxes at some local police departments. In the Greater Nashua Public Health Region Amherst PD, Merrimack PD, Nashua PD and Pelham PD have permanent medication drop boxes.

Leading Causes of Death by Age Group Depicting Injury, Suicide and Homicide

10 Leading Causes of Death by Age Group, United States – 2011

	Age Groups										
Rank	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	Total
1	Congenital Anomalies 5,013	Unintentional Injury 1,337	Unintentional Injury 761	Unintentional Injury 874	Unintentional Injury 12,330	Unintentional Injury 15,518	Unintentional Injury 15,230	Malignant Neoplasms 48,897	Malignant Neoplasms 112,572	Heart Disease 475,097	Heart Disease 596,577
2	Short Gestation 4,106	Congenital Anomalies 493	Malignant Neoplasms 441	Malignant Neoplasms 419	Suicide 4,822	Suicide 6,100	Malignant Neoplasms 11,717	Heart Disease 36,100	Heart Disease 69,742	Malignant Neoplasms 397,106	Malignant Neoplasms 576,691
3	SIDS 1,910	Homicide 412	Congenital Anomalies 182	Suicide 282	Homicide 4,554	Homicide 4,185	Heart Disease 10,635	Unintentional Injury 20,749	Unintentional Injury 15,158	Chronic Low. Respiratory Disease 121,869	Chronic Low. Respiratory Disease 142,943
4	Maternal Pregnancy Comp. 1,591	Malignant Neoplasms 353	Homicide 129	Congenital Anomalies 176	Malignant Neoplasms 1,611	Malignant Neoplasms 3,499	Suicide 6,599	Liver Disease 8,864	Chronic Low. Respiratory Disease 15,044	Cerebro-vascular 109,323	Cerebro-vascular 128,932
5	Unintentional Injury 1,163	Heart Disease 165	Heart Disease 92	Homicide 154	Heart Disease 998	Heart Disease 3,301	Homicide 2,519	Suicide 8,858	Diabetes Mellitus 12,688	Alzheimer's Disease 84,032	Unintentional Injury 126,438
6	Placenta Cord. Membranes 1,004	Influenza & Pneumonia 112	Chronic Low. Respiratory Disease 64	Heart Disease 111	Congenital Anomalies 432	Diabetes Mellitus 686	Liver Disease 2,449	Diabetes Mellitus 6,012	Cerebro-vascular 11,205	Diabetes Mellitus 52,402	Alzheimer's Disease 84,974
7	Bacterial Sepsis 526	Septicemia 61	Influenza & Pneumonia 63	Chronic Low Respiratory Disease 72	Influenza & Pneumonia 220	HIV 666	Diabetes Mellitus 1,842	Cerebro-vascular 5,705	Liver Disease 10,749	Influenza & Pneumonia 45,386	Diabetes Mellitus 73,831
8	Respiratory Distress 513	Chronic Low Respiratory Disease 53	Benign Neoplasms 40	Influenza & Pneumonia 55	Cerebro-vascular 186	Cerebro-vascular 530	Cerebro-vascular 1,718	Chronic Low. Respiratory Disease 4,634	Suicide 6,521	Unintentional Injury 43,258	Influenza & Pneumonia 53,826
9	Circulatory System Disease 500	Benign Neoplasms 45	Cerebro-vascular 40	Cerebro-vascular 47	Complicated Pregnancy 172	Influenza & Pneumonia 515	HIV 1,619	HIV 2,781	Septicemia 4,953	Nephritis 37,796	Nephritis 45,591
10	Neonatal Hemorrhage 456	Cerebro-vascular 42	Septicemia 38	Septicemia 31	Chronic Low. Respiratory Disease 170	Liver Disease 505	Influenza & Pneumonia 859	Septicemia 2,461	Nephritis 4,754	Septicemia 26,746	Suicide 39,518

Data Source: National Vital Statistics System, National Center for Health Statistics, CDC.
Produced by: Office of Statistics and Programming, National Center for Injury Prevention and Control, CDC using WISQARS™.

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control

[1]Centers for Disease Control and Prevention, N. C. (2014, August 7). *Injury Prevention & Control*. Retrieved August 11, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/injury/overview/leading_cod.html

[2]Centers for Disease Control and Prevention, N. C. (2014, August 7). *Violence Prevention*. Retrieved August 11, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/

[3]Centers for Disease Control and Prevention, N. C. (2014, August 7). *Child Maltreatment Prevention*. Retrieved August 12, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/childmaltreatment/index.html

[4]Control, N. C. (2014, August 18). *Child Maltreatment - Facts at a Glance.* Retrieved August 18, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/pdf/childmaltreatment-facts-at-a-glance.pdf

[5]U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2013). Child maltreatment 2012. Available from http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment

[6]Healthy People 2020. (2014). Substance Abuse. *2020 Topics and Objectives*. Retrieved July 28th 2014 from http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=40

[7]Centers for Disease Control and Prevention, N. C. (2014, April 9). *Centers for Disease Control and Prevention.* Retrieved August 13, 2014, from Injury Prevention and Control - Youth Violence: http://www.cdc.gov/violenceprevention/youthviolence/index.html

[8]Prevention, C. f. (2014, January 9). *Youth Violence - Facts at a Glance.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/pdf/yv_datasheet_2012-a.pdf

[9]NH Department of Education (2013). *Youth Risk Behavior Survey Results*. Concord, NH.

[10]Unit, N. P. (2014). *Nashua Police Department 2013 Annual Crime Report.* Nashua Police Department, Crime Analysis Unit. Nashua: Nashua Police Department.

[11]Prevention, C. f. (2014, January 9). *Undestanding Intimate Partner Violence.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/pdf/ipv_factsheet-a.pdf

[12]Prevention, C. f. (2014, January 13). *Understanding Sexual Violence.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/pdf/svfactsheet2012-a.pdf

[13]Truman, J. L. (2013). *Crimial Victimization, 2012.* U.S. Department of Justice, Office of Justice Programs.

Bureau of Justice Statistics.

[14]Prevention, C. f. (2012, October 3). *Motor Vehicle Safety.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: www.cdc.gov/motorvehiclesafety/

[15]Prevention, C. f. (2011, May 10). *New Hampshire.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: www.cdc.gov/Motorvehiclesafety/statecosts/nh.html

[16]Prevention, C. f. (2011, May 20). *Ten Significant Public Health Achievements - United States 2001-2010: Motor Vehicle Safety.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: www.cdc.gov/Motorvehiclesafety/mmwr_achievements.html

[17]Prevention, C. f. (2014, August 8). *Child Passenger Safety: Fact Sheet.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: www.cdc.gov/MotorVehicleSafety/Child_Passenger_Safety/CPS-Factsheet.html

[18]Prevention, C. f. (2014, August 8). *Teen Drivers: Fact Sheet.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: www.cdc.gov/MotorVehiclesafety/teen_drivers/teendrivers_factsheet.html

[19]Prevention, C. f. (2014, August 08). *Distrated Driving.* Retrieved August 15, 2014, from Centers for Disease Control and Prevention: www.cdc.gov/Motorvehiclesafety/Distracted_Driving/index/html

[20]Mowry, J. B. (2013). 2012 Annual Report of the American Association of Poison Control Centers' National Poison Data System (NPDS): 30th Annual Report. *Clinical Toxicology* (51), 949-1229.

[21]Federal Bureau of Investigation. (2012-2013). National Incident-Based Reporting System (NIBRS). Retrieved from http://www.fbi.gov/stats-services/crimestats.

[22]Centers for Disease Control and Prevention. (2014, January 14). *Child Maltreatment: Consequences.* Retrieved October 1, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/childmaltreatment/consequences.html

[23]Centers for Disease Control and Prevention. (2014, August 18). *Youth Violence: Facts at a Glance.* Retrieved September 29, 2014, from Centers for Disease Control and Prevention: http://www.cdc.gov/violenceprevention/pub/yv_datasheet.html

[24]**Bureau of Data Management. (2009). *Emergency Department Discharges and Hospitalization Discharges.* Concord, NH: NH DHHS.**

Emergency preparedness is not only for Californians, Midwesterners and Gulf Coast residents. Most communities may be impacted by several types of hazards during a lifetime.

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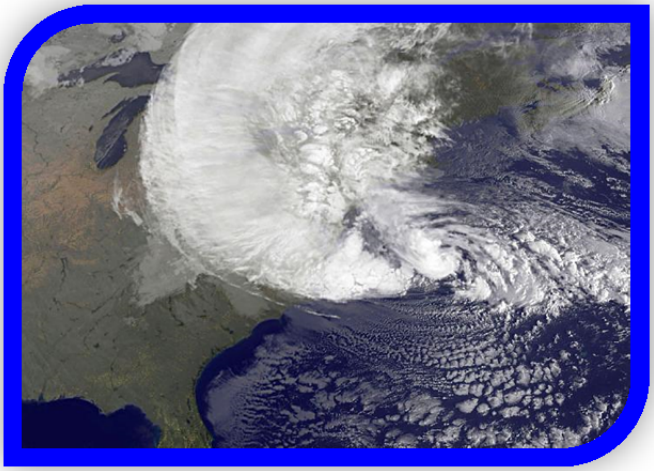
Emergency Preparedness



Contents

A disaster is any natural or manmade incident, including terrorism, that results in extraordinary levels of mass casualties, damage, or disruption severely affecting the population, infrastructure, environment, economy, national morale, and/or government functions.[1] Disasters can have devastating economic, health, and social consequences for affected communities and their residents. Almost all emergencies impact the public's health in some way. Flooding may lead to the development of mold which, in turn, may cause an asthma attack. A falling tree could take down power lines to the home of a person who is energy dependent because they need to use oxygen for a health condition. A child is exposed to influenza at school and within a couple of weeks the whole family has come down with respiratory illness. These and other types of emergencies – weather events, chemical exposures and communicable disease outbreaks – occur in our community on a regular basis, and our region has sufficient services in place to respond to them. Now imagine that the emergency concurrently impacted one out of every four people in Greater Nashua. How would our community meet the needs of 50,000 people at one time?

In 2002, the CDC launched the Public Health Emergency Preparedness (PHEP) Cooperative Agreement, which has been administering funds to state and local public health programs to improve their ability to effectively respond to a range of public health threats (including infectious diseases, natural disasters, and biological, chemical, nuclear, and radiological events) in order to build more resilient communities.[2] Public Health Emergency Preparedness relies on collaboration with healthcare, emergency medical services, and public safety partners at the local, state and federal levels to develop plans for how to most effectively and efficiently respond to and recover from the health and medical impacts of large-scale public health emergencies.

In 2011, the CDC developed the *Public Health Preparedness Capabilities: National Standards for State and Local Planning*, which created national standards to help state and local public health planners.[3] The standards provide planners with consistent strategies to determine priorities in their

Community Spotlight on Amherst: Souhegan Community Emergency Reponse Team (CERT)

The Town of Amherst NH has an active Community Emergency Response Team (CERT), an important asset for this small community and the nearby towns of Lyndeborough, Milford, and Mont Vernon who participate in the Souhegan CERT efforts. CERT teams are educated in disaster preparedness and trained in First Aid, CPR, and AED use so that they can respond quickly when the health of the community is threatened by natural or manmade disasters. During the 2011 October Nor'easter, Souhegan CERT distributed water and provided emergency information at the Amherst Fire Station. After Hurricane Sandy, the organization visited elderly residents, ensured portable generators were being positioned safely, and alerted community members about hazards.

preparedness planning and, ultimately, provide guidance and recommendations to build safer, more resilient, communities.

The City of Nashua, Division of Public Health and Community Services works with the Greater Nashua Public Health Region to prepare for, respond to and recover from disasters. Since 2011, New Hampshire has had 10 events that received federal declarations: 7 Major Disaster Declarations and 3 Emergency Declarations.[4] These events are listed in Table 10.1 below. Hurricane Sandy is included twice because it was originally classified as an Emergency Event but later developed into an incident declared a Major Disaster.

Table 10.1 Major Disaster Declarations and Emergency Declarations for NH, 2011-2013

Incident Description	Incident Start Date	Incident End Date	Declaration Type	Declaration Date
Severe Storms, Flooding, and Landslides	06/26/13	07/03/13	Major Disaster	8/2/2013
Severe Winter Storm and Snowstorm	02/08/13	02/10/13	Major Disaster	3/19/2013
Hurricane Sandy	10/26/12	11/08/12	Major Disaster	11/28/2012
Hurricane Sandy	10/26/12	10/31/12	Emergency	10/30/2012
Severe Storm And Flooding	05/29/12	05/31/12	Major Disaster	6/15/2012
Severe Storm And Snowstorm	10/29/11	10/30/11	Major Disaster	12/5/2011
Severe Storm	10/29/11	10/30/11	Emergency	11/1/2011
Tropical Storm Irene	08/26/11	09/06/11	Major Disaster	9/3/2011
Hurricane Irene	08/26/11	9/6/11	Emergency	8/27/2011
Severe Storms and Flooding	05/26/11	05/30/11	Major Disaster	7/22/2011
Source: FEMA				

Social Vulnerability and Emergency Preparedness

Vulnerability to hazards is influenced by many factors, including poverty, lack of access to transportation, age, income, the strength of social networks, and neighborhood characteristics, which may weaken a community's ability to prevent human suffering and financial loss in the event of disaster. These factors are collectively known as social vulnerability. The Association for Toxic Substances & Disease Registry (ATSDR) at the CDC has created a tool to help emergency response planners and public

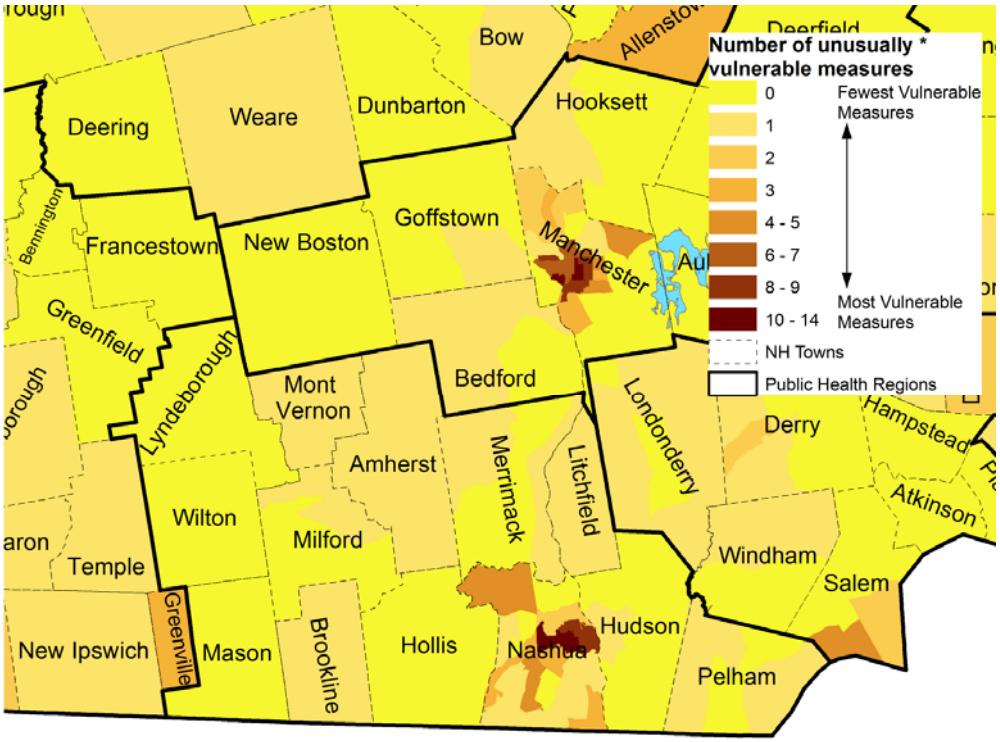
health officials identify and map the communities that will most likely need support before, during, and after a hazardous event. The Social Vulnerability Index (SVI) uses U.S. Census data to determine the social vulnerability of every Census tract in the United States. Census tracts are subdivisions of counties for which the Census collects statistical data.[5]

The SVI can help public health officials and local planners better prepare for and respond to emergencies by:

- Estimating the amount of needed supplies
- Estimating staffing resources/types
- Identifying areas in need of emergency shelters
- Planning evacuation routes and strategies
- Identifying types of functional needs populations and strategies to assist them
- Identifing communities/areas that may need continued support to recover following an emergency or natural disaster
- Developing communication strategies to inform or engage the community

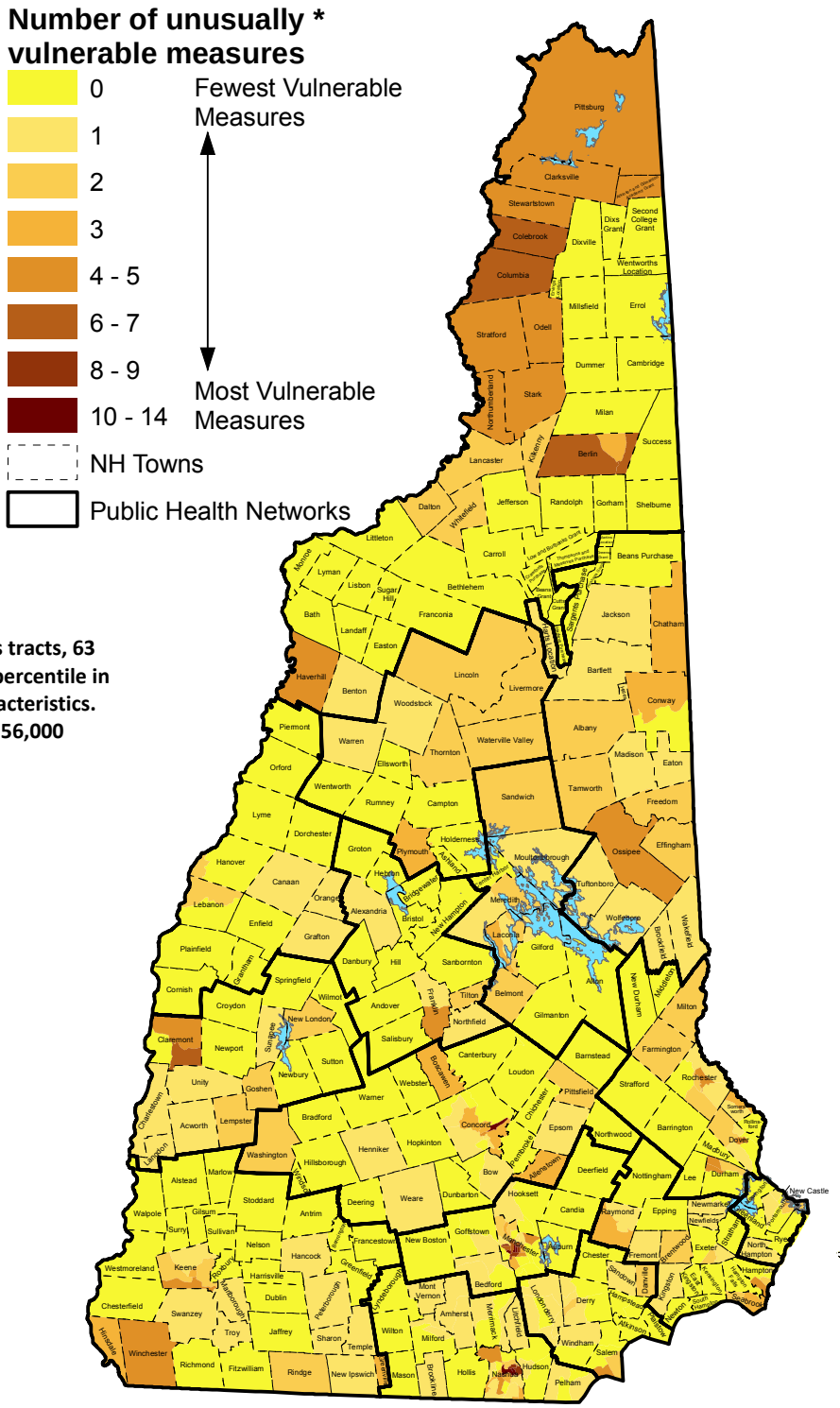
The New Hampshire Department of Health and Human Services has also developed a social vulnerability index (Figure 10.1; 10.2). Within the Greater Nashua Public Health Region, there are areas where higher vulnerability requires increased support during an emergency response. Figure 10.1 shows social vulnerability variation within the region.

Figure 10.1 Social Vulnerability Measures, GNPHR



Source: NH DHHS; American Community Survey 2008-2012 5 year estimates. Census tracts ranked for each measure.

Figure 10.2 Social Vulnerability Measures, NH



Of the 292 populated census tracts, 63 of these are above the 90th percentile in 3 or more vulnerability characteristics. These tracts contain about 256,000 people or 19.5% of the NH 2010 population.

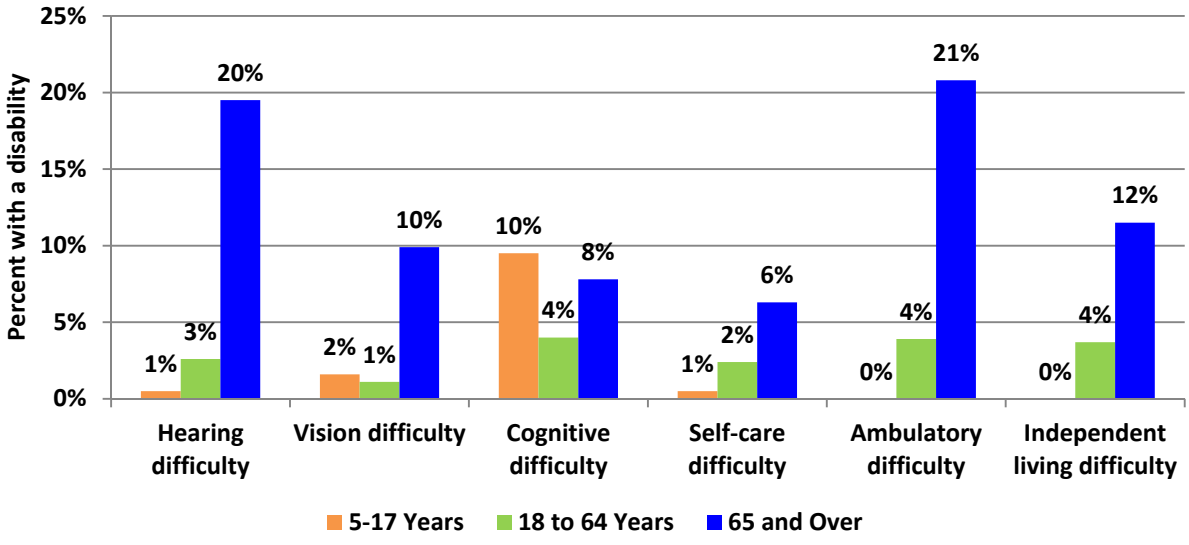
Source: NH DHHS; American Community Survey 2008-2012 5 year estimates. Census tracts ranked for each measure.

Functional Needs Populations

Effective planning includes accommodations for the needs of individuals whose physical or cognitive disabilities make it difficult for them to respond to an emergency and they may need help with evacuations and sheltering. Although terminology continues to evolve, the New Hampshire State Functional Needs Committee has proposed the collective term, "functional" to describe populations that under usual circumstances are able to function on their own or with support systems; individuals with needs that extend beyond those of the general population.[7] Functional needs populations include individuals with disabilities, those who have limited English language skills, and people who are at fixed facilities such as long term care facilities or hospitals. Planning for evacuation, emergency sheltering, communication, and transportation of the functional needs population requires understanding where the individuals are located and what resources will be required to ensure the services they need are available and accessible.

In Nashua, according to the 2010 Census, 11.8% of children age 5-15 years, 10.9% of individuals ages 6-64 years, and 41.5% of those 65 years and older have a disability. Figure 10.3 shows the types of disability documented among Nashua children between 5 and 15 years of age. In this group, 10% have a cognitive difficulty, 2% have a vision difficulty and 1% have a vision difficulty or self-care difficulty. For Nashua adults over the age of 65, 20% have hearing difficulty, 10% have vision difficulty, 8% have cognitive difficulty, 6% have self-care difficulty, 21% have ambulatory difficulty and 12% have difficulty living independently.[8]

Figure 10.3 Percent of Nashua Population by Age with a Disability by Type

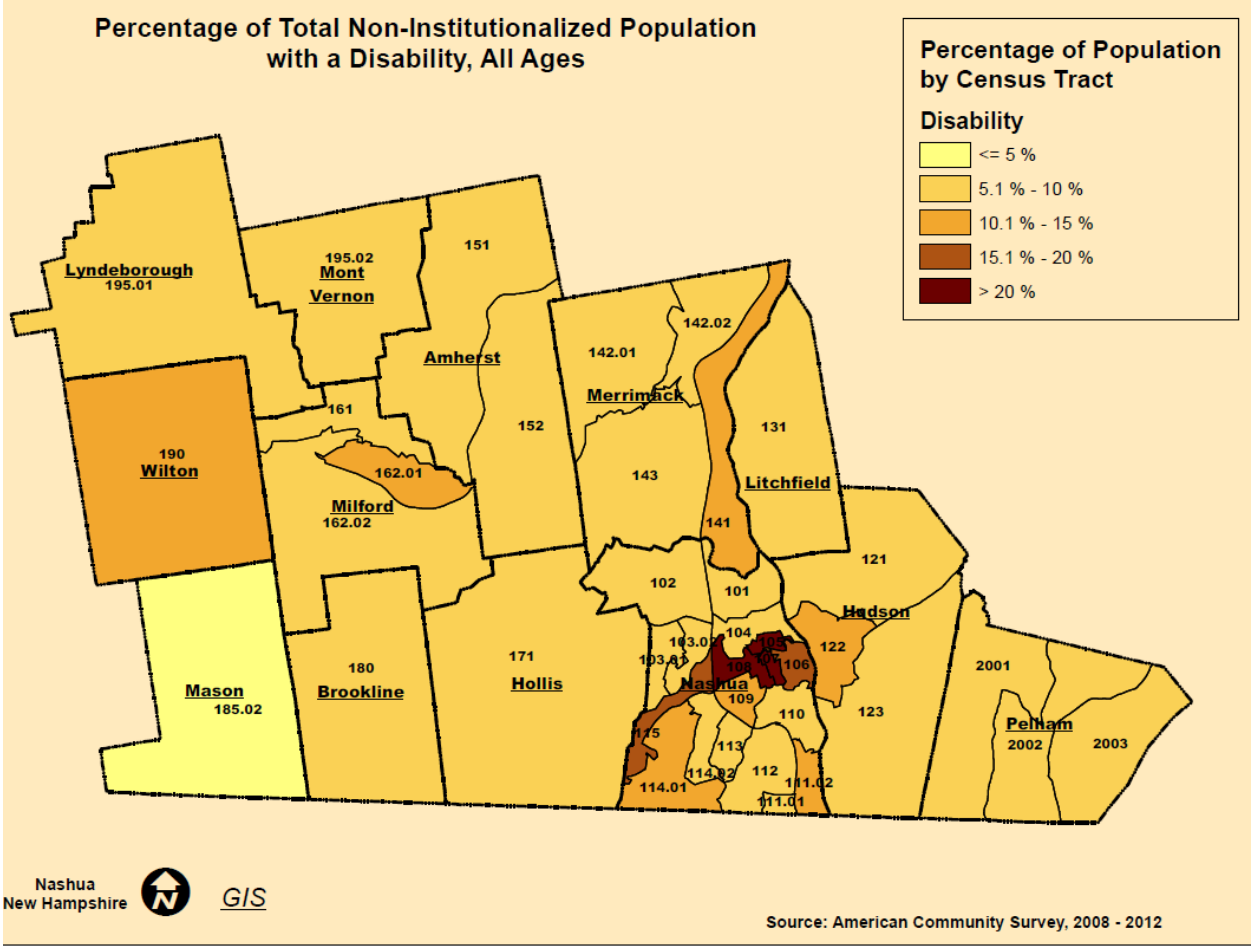


Source: American Community Survey, 2013 1-Year Estimates

In the Greater Nashua Public Health Region, among all ages, the 2010 census indicates there are census tracts where the percentage of the population with a disability is greater than 20% of the overall population.[8] Individuals with cognitive disability include people whose developmental or mental

condition impacts their ability to think. Mobility disability refers to people who have limited use of their arms and legs, typically to the extent that they need a wheelchair or other personal device in order to move their bodies. People whose eyesight is severely limited or who have limited hearing are described as having a sensory disability.[7]

Figure 10.4 Map by Disability, Greater Nashua Public Health Region

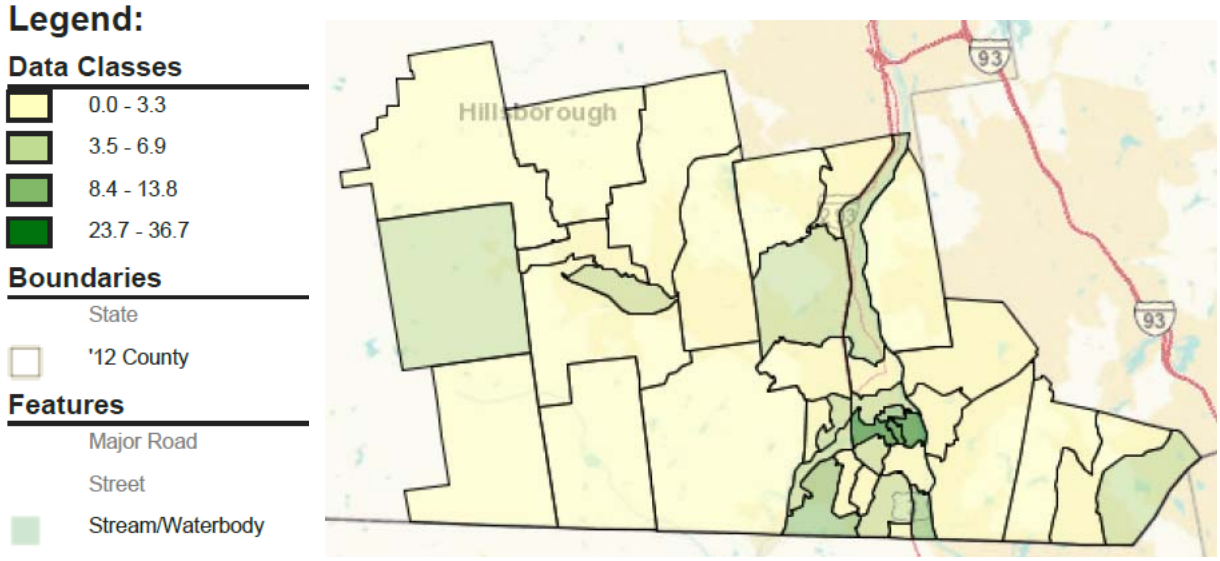


Source: City of Nashua GIS Department; 2008-2012 American Community Survey

In the Greater Nashua Public Health Region, the percentage of the population that speaks a language other than English at home and speaks English "less than very well" must be considered in emergency preparedness planning. In some surrounding towns with mostly English speaking residents, the percentages of those who speak other languages at home and have measurable limits to their English speaking skills are low, sometimes including less than 2% of the community. In some more diverse census tracts in the region, the data indicates that 15% or more of the population speak a language other than English at home and speak English "less than very well." To reference the map and additional information on language, go to *Chapter 1: Social Determinants of Health*.

Access to transportation can have an impact on community members who need to obtain health care services, move out of the way of danger or, in more extreme circumstances, evacuate their homes in an emergency. There is limited public transportation available in the Greater Nashua Public Health Region, and individuals without a personal vehicle do not always have access to transportation when they need it. Figure 10.5 shows the percentage of occupied housing units that do not own a vehicle in the GNPHR. Areas with the darkest shading, indicating places where between 23.7% and 36.7% of the occupied homes do not have a personal vehicle available, which are located in Nashua.[8]

Figure 10.5 Percent of Occupied Housing Units with No Vehicle Available by Census Tract



Source: American Community Survey, 2008-2012

Climate Change and Disasters

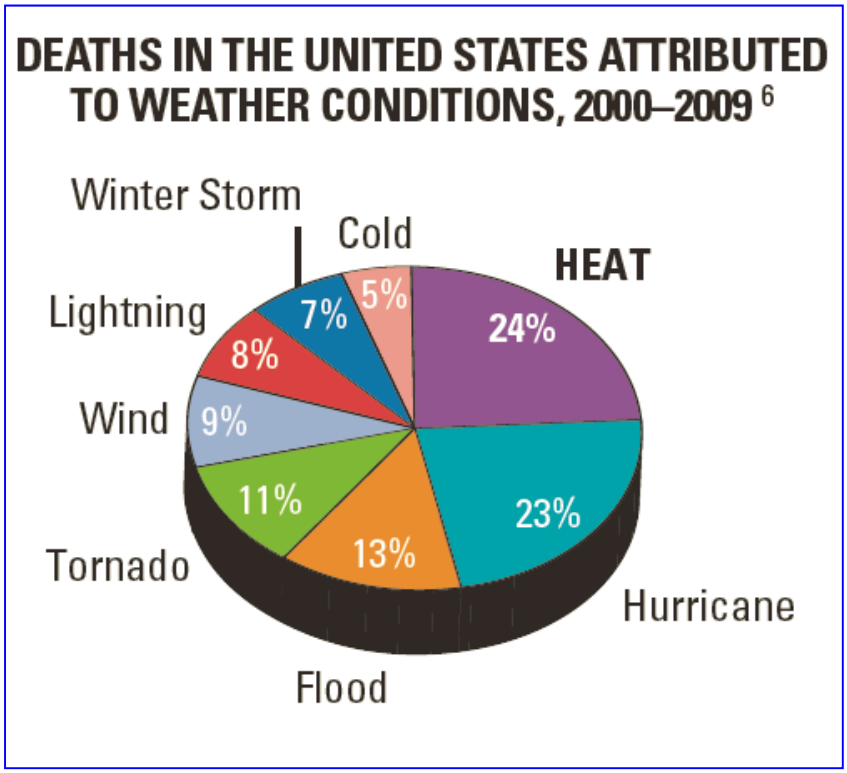
According to the Centers for Disease Control and Prevention, "Climate change refers to major decadal changes in the earth's temperature, rainfall, snow, and wind patterns." These changes have caused a gradual increase in the earth's temperature. In turn, higher temperatures have an impact on the amount of drinking water available and the increase of drought, changes in vectors, such as mosquitoes that carry infectious diseases like West Nile Virus and Eastern Equine Encephalitis (EEE) and increases in the number of large-scale natural disasters such as hurricanes and floods.[14]

Heat Exposures

The ability to respond to extreme environmental conditions, such as fires, flooding, extreme heat, or heavy snow storms is a core function of emergency responders. Dealing with related issues, such as disrupted food and water supplies, power outages, displacement of individuals from their homes, overburdened healthcare facilities and the establishment of temporary shelters, is also part of a coordinated emergency planning system. In New Hampshire, where heavy snow and ice storms can be part of a typical winter season, emergency systems and equipment to deal with snow, ice, and cold have

been in place for many years. Extreme heat conditions should also be planned for because both extreme heat and cold can have serious health impacts.

Figure 10.6 Climate Change and Extreme Heat
Source: CDC

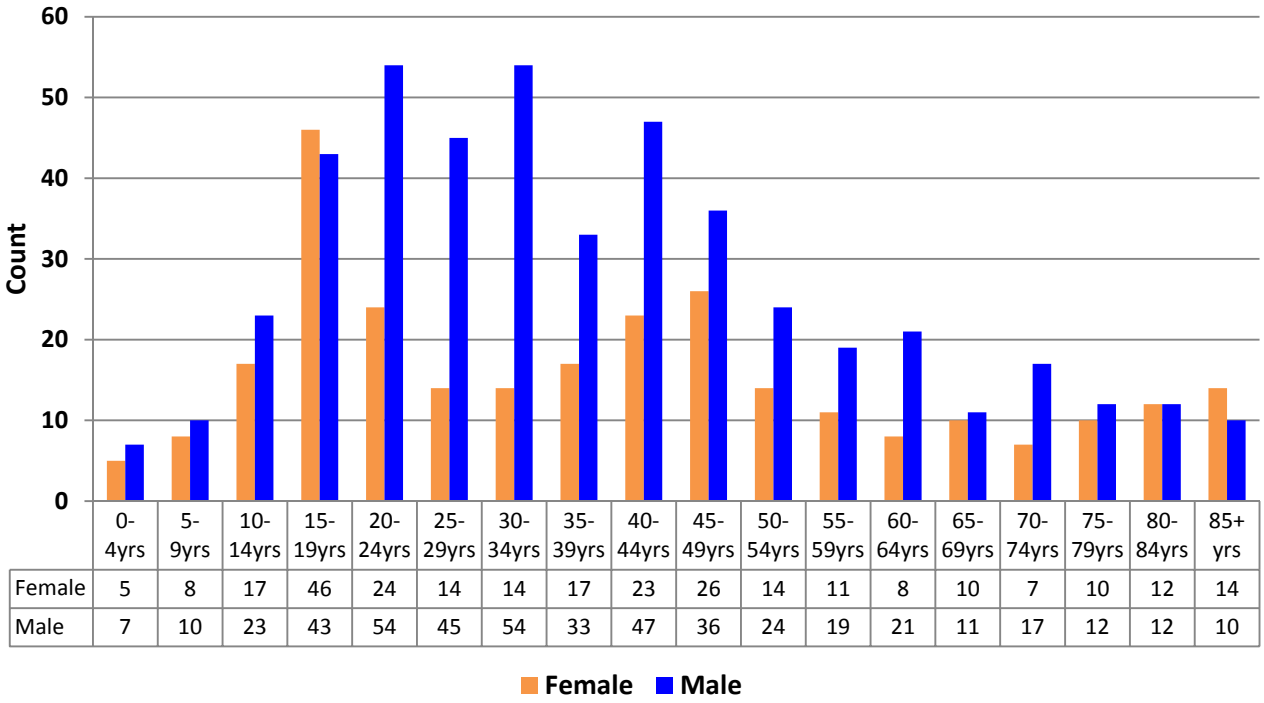


Nationally, the U.S. Weather Service tracks fatalities, injuries and damage caused by severe weather. Over the ten year period of 2004-2013, the highest number of severe weather related fatalities were due to extreme heat (Figure 10.6).[9] The CDC suggests that the dangers to health from heat related issues will increase in the years ahead due to climate change in the world. Extreme heat events will be more frequent, more severe, and will last longer when they do occur.[10]

Modeling conducted by the CDC shows that the likelihood of more hot weather and more record hot weather increases as average temperature increases. In New Hampshire, one data indicator where the influence of higher temperatures can be measured is in the number of high ozone days. Ozone is a colorless gas that can be found throughout the earth's atmosphere. In the upper atmosphere, ozone exists naturally where it shields the earth from the sun's ultraviolet rays. At ground-level, however, ozone is formed as a result of chemical reactions caused by the presence of nitrogen oxides (NOx) and volatile organic compounds (VOCs). These compounds react with oxygen in the air in the presence of heat and strong sunlight to produce ground-level ozone, the primary ingredient of summertime smog.[12] High ozone days are those days when ground-level ozone exceeds 0.075 parts per million. During 2010, there were 9 ozone exceedance days in the State of NH and 2 in Nashua.[13]

One group of people who are especially vulnerable to extreme heat is the elderly. They are less likely to sense and respond to changes in temperature, so have increased risk of problems such as heat cramps, heat exhaustion, and heat stroke.[6] Heat illnesses have been a cause of emergency department visits and hospitalizations for New Hampshire residents. Figure 10.7 shows the ages and gender of individuals who had heat related emergency room visits in the state between 2005 and 2009. The data indicates that there are more males than females who are discharged from the emergency room after a heat related visit and that the highest number of cases were among those between the ages of 15 and 49. There were 39 inpatient hospitalizations for heat related events from 2005 to 2009 in NH residents.[15]

Figure 10.7 Heat Related Emergency Department Visits, 2005-2009



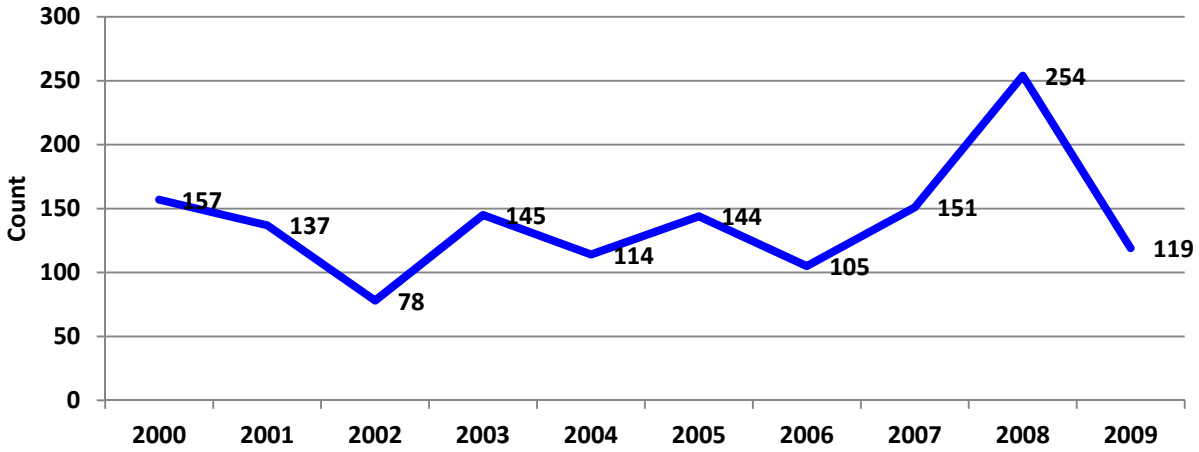
	0-4yrs	5-9yrs	10-14yrs	15-19yrs	20-24yrs	25-29yrs	30-34yrs	35-39yrs	40-44yrs	45-49yrs	50-54yrs	55-59yrs	60-64yrs	65-69yrs	70-74yrs	75-79yrs	80-84yrs	85+ yrs
Female	5	8	17	46	24	14	14	17	23	26	14	11	8	10	7	10	12	14
Male	7	10	23	43	54	45	54	33	47	36	24	19	21	11	17	12	12	10

Source: NH DHHS

Carbon Monoxide

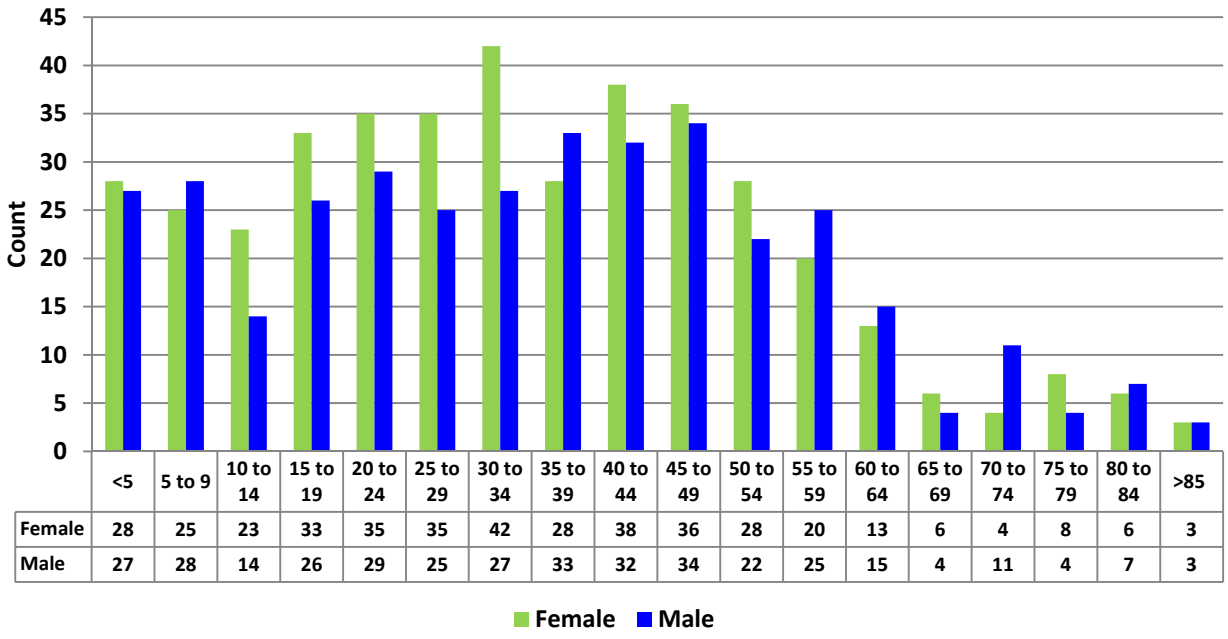
Another area of concern for emergency response is unintentional carbon monoxide poisoning. Carbon monoxide is a colorless, odorless, poisonous gas that is produced when a fuel, such as gas or kerosene, is burned. Carbon monoxide gas can build up in small spaces, such as inside a home or garage, and is especially dangerous because it is not seen, smelled, or heard by the people who are exposed to it. During power outages, when some people may use fuel-run generators or propane grills and heaters, it is especially important that they follow guidelines for safe operation. When people are exposed to a low level of carbon monoxide they may experience dizziness, nausea, disorientation, or headache. Higher levels of exposure can cause unconsciousness, long-term neurological disabilities and death. Most carbon monoxide poisonings are preventable. The CDC has several carbon monoxide prevention guides and toolkits to promote strategies and practices that reduce the risk of carbon monoxide poisoning. However, every year in the United States, carbon monoxide poisoning accounts for more than 400 deaths and more than 15,000 emergency room visits. In New Hampshire between 2000 and 2009, there were 773 emergency department visits for carbon monoxide poisoning (Figure 10.10). Figure 10.11 shows the number of cases during this time period by age and gender. Between 2000 and 2010 in New Hampshire, there were 28 deaths from unintentional carbon monoxide poisoning.[15]

Figure 10.8 Hospital Visits to Emergency Department for Carbon Monoxide Poisoning, 2000-2009



Source: NH DHHS

Figure 10.9 Carbon Monoxide Hospital Visits to Emergency Department by Age and Gender, 2005-2009



	<5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	>85
Female	28	25	23	33	35	35	42	28	38	36	28	20	13	6	4	8	6	3
Male	27	28	14	26	29	25	27	33	32	34	22	25	15	4	11	4	7	3

Source: NH DHHS

Community Spotlight on Brookline: Brookline Ambulance

For the past 23 years, residents in the town of Brookline New Hampshire have looked to Brookline ambulance director Wes Whittier to lead efforts for ambulance services and emergency management. Wes will be retiring at the end of 2014. Brookline residents have benefited from Wes's advocacy and leadership. By working with town leaders and obtaining other donations, the town's EMT volunteers have been able to participate, without individual expense, in the required trainings and have received assistance in obtaining uniforms and gear. Today, the Brookline ambulance is staffed by 22 trained volunteers and a paid paramedic. It operates out of a state of the art facility built in 2004 and expanded in 2013. The town also maintains a policy of providing free ambulance services for Brookline residents.

Image: GNPHR Medical Surge Exercise, May 2014

[1]US Department of Homeland Security. (2008, January). *National Response Framework*. Retrieved on April 26, 2011, from *http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf*.

[2]Centers for Disease Control and Prevention (CDC). (2014). *Funding and Guidance for State and Local Health Departments*. Retrieved on July 29, 2014 from http://www.cdc.gov/phpr/coopagreement.htm.

[3]CDC. (2014). Public Health Preparedness Capabilities: National Standards for State and Local Planning. Retrieved from http://www.cdc.gov/phpr/capabilities/.

[4]FEMA. (2014). Disaster Declarations. Retrieved on August 29, 2014 from http://www.fema.gov/disasters.

[5]Flanagan, Barry E.; Gregory, Edward W.; Hallisey, Elaine J.; Heitgerd, Janet L.; and Lewis, Brian. (2011). "A Social Vulnerability Index for Disaster Management," *Journal of Homeland Security and Emergency Management*: Vol. 8: Iss. 1, Article 3.

[6]Eisenman DP, Wold C, Fielding J, et al. *Differences in Individual-Level Terrorism Preparedness in Los Angeles County*. Am J Prev Med. 2006 Jan; 30(1):1-6.)

[7]NH DHHS. (2010) *Functional Needs Guidance: State Emergency Operations Plan Support Annex*. Retrieved on August 25, 2014 from http://www.nh.gov/safety/divisions/hsem/documents/nh_functional_needs_guidance.pdf

[8]U.S. Census Bureau. (2008-2013). *American Community Survey 5 Year Estimates*. Retrieved from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

[9]NOAA. (2014) *National Weather Service Office of Climate, Water and Weather Services*. Retrieved on August 25, 2014 from http://ww.weather.gov/om/hazstats.shtml.

[10]U.S. Centers for Disease Control and Prevention (2014). *Climate Change and Extreme Heat Prevention.* Retrieved August 2014 from http://www.cdc.gov/climateandhealth/pubs/ClimateChangeandExtremeHeatEvents.pdf

[11]U.S. Centers for Disease Control and Prevention (2014) *Extreme Heat and Your Health.* Retrieved August 2014 from http://www.cdc.gov/extremeheat/seniors.html

[12]New Hampshire Department of Environmental Services (NHDES). (2014). *What is Ozone?* Retrieved Sept 2014 from http://des.nh.gov/organization/divisions/air/do/asab/ozone/categories/overview.htm

[13]NHDES (2011). *Internal Environmental Database*. Concord, New Hampshire: NH DHES, 1994-2010.

[14]CDC. (2014). Climate Change: Overview. Retrieved from http://www.cdc.gov/healthcommunication/toolstemplates/entertainmented/tips/climatechange.html.

[15]Bureau of Health Statistics and Data Management. (2009). *Emergency Department Discharges and Hospitalizations Database*. Concord, NH: NH DHHS.

"Work is a social determinant of health. Where a person works and what that person does has an impact on individual health outcomes, including stress, chronic disease, and injury and illness. It is critical to monitor these outcomes from a community based surveillance system approach, with the goal of informing key public health stakeholders and policy-makers in developing prevention strategies."

-Karla Armenti, ScD, NH Occupational Health Surveillance Program

Occupational Health

Contents

Many work related injuries and illnesses are preventable, and control of occupational hazards is the most effective means of prevention. There are an estimated 740,000 civil, non-institutional workers in New Hampshire, many of which are considered to be employed in high mortality risk occupations and industries. In order to understand the magnitude and burden of work related injuries and illnesses, the Occupational Health Surveillance Program in the New Hampshire Department of Health and Human Services (DHHS) monitors these events through an occupational health surveillance system. Highlights of surveillance activities indicate occupational health data and emerging trends for the state:

- While manufacturing remains the largest sector of the New Hampshire economy, accounting for 25% of the jobs, this sector has declined steadily over the past 5 years,
- From 2005 to 2011, there were 73 work related fatalities in NH,
- There were 236,937 emergency department discharges from 2000-2009 where workers' compensation was used, and 5,691 inpatient hospitalizations,
- The annual number of residents with elevated blood lead levels (≥10mcg/dL) is greater than 200,
- There were 40,768 NH workers employed in high mortality risk occupations in 2011,
- There were 71,819 NH workers employed in high mortality risk industries in 2011.[1]

From 2005 to 2011 there were 73 deaths from work-related injuries in New Hampshire, averaging 10 per year. The NH fatality rate has increased, especially in 2012 when there were 14 fatalities, of which four involved tree-cutting activities. From 2001 to 2009 there were 488 visits to a hospital for an amputated appendage such as a finger, toe, foot or arm. Of the amputated appendages, over 84% were fingers and over 15% were thumbs. The American Medical Association (AMA) recommends that there be one physician with training in occupational medicine per 1,000

Community Spotlight on Wilton: Souhegan Valley Transit

Since 2008, Souhegan Valley Rides/SVR has been dedicated to providing affordable, non-emergency transportation to those most in need in the greater Nashua Region: the elderly, those living with disabilities, and residents who are unable to drive. SVR, or "The Blue Bus" as it has been affectionately nicknamed, is a handicapped accessible, dial-a-ride bus service that transports passengers to their healthcare and social services appointments, as well as town facilities such as local libraries, senior centers, and shopping plazas. Passengers pay $2.00 for a one way ride on the 14 passenger bus. Service is contracted from the Nashua Transit System and available from 8 AM - 6 PM, Monday through Fridays. SVR is available to residents of Amherst, Brookline, Hollis, Milford, Mont Vernon and Nashua. As of March 1, 2014, with sponsorship in part from the Wilton Lions Club and Milford Rotary Club, SVR is now also available to the town of Wilton.

employees and in New Hampshire there are 11 physicians in the American Board of Preventative Medicine and 16 physicians in the American College of Occupational and Environmental Medicine. There are also 5 nurses in the American Board of Occupational Health Nurses and 68 in the American Association of Occupational Health Nurses.[2] Considering the size of the NH workforce is 740,000 individuals, NH would need over 700 more physicians with training in occupational medicine to meet the standards recommended by the AMA.

Work Force Characteristics

There are 50,349 individuals 16 years and older in the work force in Nashua and 745,330 in New Hampshire. In NH, 65.2% of females over the age of 16 are in the workforce and in Nashua it is 66.4%. In Nashua, for families with children under the age of 6, about 65% have both parents in the workforce and for families with children between 6 and 17, 79% have both parents in the workforce. In Nashua, 66.4% of the total workforce is female. Among all Nashua workers, 80.9% drive to work alone and 2.1% took public transportation (Table 11.1).[3]

Table11.1 Workforce Structure and Commuting to Work, 2008-2012

	Nashua	NH	US
Total Work Force, Age 16 and Older	50,349	745,330	157,664,311
Females over 16 years of age in labor force	66.4%	65.2%	59.5%
Have children under 6 years with both parents in the family in labor force	65.1%	69.5%	64.7%
Have children under 6 to 17 years with both parents in the family in labor force	79.0%	76.3%	71.3%
Commuting to Work			
Drove Alone – Car, Truck, Van	80.9%	81.4%	76.1%
Carpooled	10.1%	8%	10%
Public Transportation	2.1%	0.8%	5%
Walked	2.2%	3.1%	2.8%
Other	0.7%	1.2%	1.8%
Worked from Home	4.0%	5.5%	4.3%
Mean Travel to Work Time	25 minutes	26 minutes	25 minutes
Source: American Community Survey, 2008-2012			

In Nashua, the occupations with the highest percentage of the labor force are management and business and sales/office occupations and the top industries for employment are educational services, healthcare and manufacturing (Table 11.2).[3]

Table 11.2 Percent by Industry and Occupation for Nashua, 2008-2012

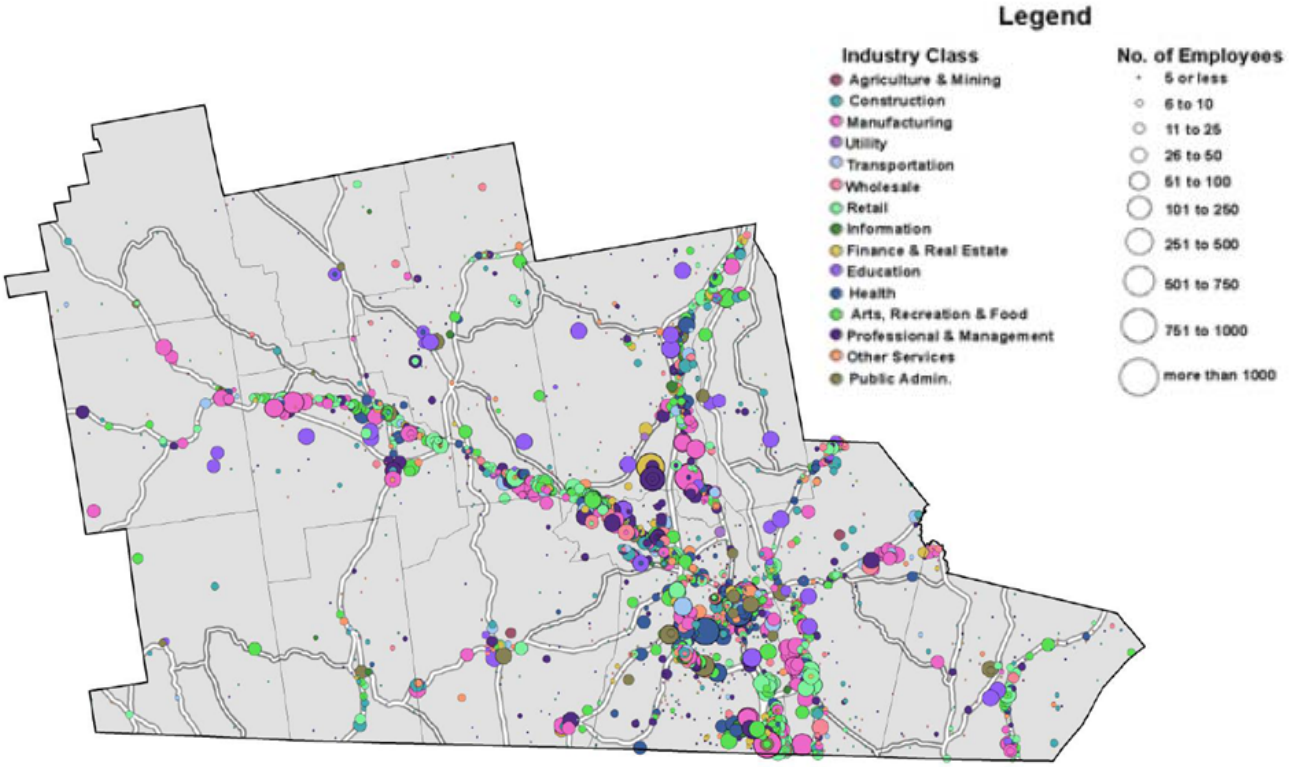
Occupation (n=46,327)	
Management, Business, Science, Arts Occupations	**41.1%**
Service Occupations	14.8%
Sales and Office Occupations	25.1%
Natural resources, Construction, Maintenance Occupations	7.3%
Production, Transportation, Material Moving Occupations	11.7%
Industry (n=46,237)	
Agriculture, Forestry, Fishing, Mining	0.3%
Construction	5.1%
Manufacturing	17.9%
Wholesale Trade	2.1%
Retail Trade	14%
Transportation and Utilities	3.5%
Information	2.6%
Finance and Insurance, Real Estate	6.4%
Professional, Scientific, Waste Management	13.7%
Educational Services, Health Care, Social Assistance	**19.6%**
Arts, Entertainment, Recreation, Food Services	7.9%
Public Administration	4.1%
Other	2.8%
Source: American Community Survey, 2008-2012	

In a map developed by the Nashua Regional Planning Commission, the industry and number of employees in each industry were mapped by location for the Greater Nashua Public Health Region (GNPHR). Many of the industries with the largest number of employers are located along the major roads in the region and in the City of Nashua (Figure 11.1).[4]

"We in the occupational safety and health community have the responsibility and privilege of helping to make sure that working people, throughout their careers, enjoy lives free from pain, impairment, and potentially the risk of death associated with job-related injury and illness."

- John Howard, MD, NIOSH Director

Figure 11.1 Geographic and Industrial Distribution of Workforce



Adapted from an original map prepared by Nashua Regional Planning Commission (NRPC). Data Source: New Hampshire Department of Homeland Security, 2010.

Health Insurance Status of the Work Force

In the United States, 82% of the employed population has health insurance and in Nashua, 86% have health insurance. Of those that are unemployed in the United States, 53% have insurance and in Nashua 64% have health insurance (Table 11.3).[3] Looking ahead, the implementation of the Affordable Care Act will expand access to health insurance for all U.S. citizens.

Table 11.3 Health Insurance Status of Work Force, 2008-2012

	Nashua	NH	US
Employed	43,661	650,205	134,295,018
With health insurance coverage	86.5%	87.1%	82.6%
No health insurance coverage	13.5%	12.9%	17.4%
Unemployed	3,662	44,210	13,445,373
With health insurance coverage	64%	61.4%	53.6%
No health insurance coverage	36%	38.6%	46.4%
Not in labor force	9,169	149,813	43,049,639
With health insurance coverage	84.5%	85.6%	78.3%
No health insurance coverage	15.5%	14.4%	21.7%
Source: American Community Survey, 2008-2012			

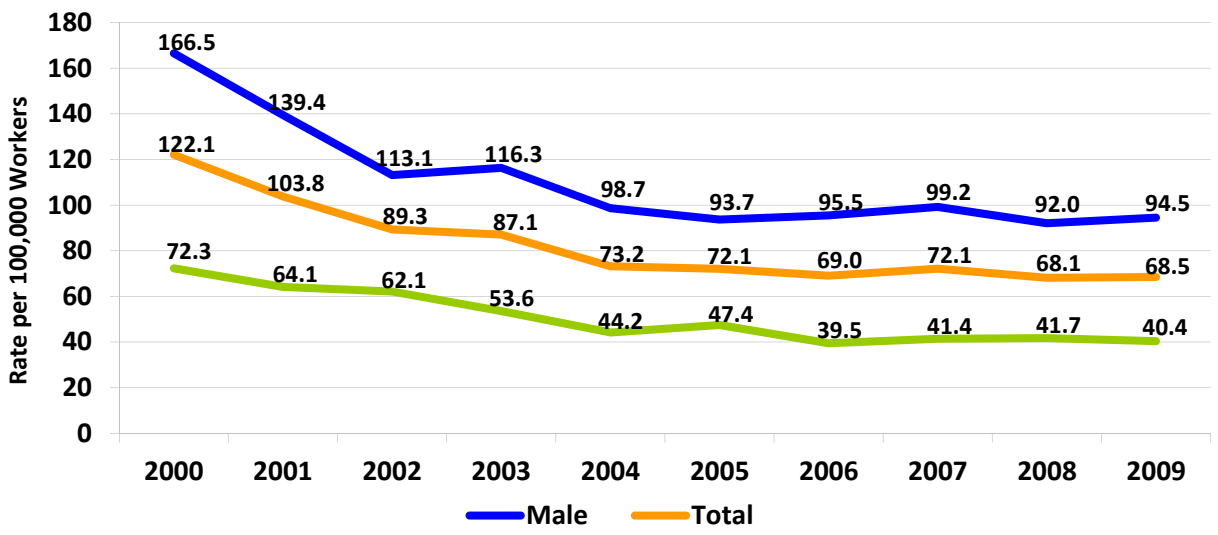
Hospitalizations and Emergency Department Visits

Workers visit the hospital for multiple reasons including back injuries, burns, and accidental poisonings. Statewide there has been a decrease in hospitalizations for individuals 16 years and older with a rate of 122.1 per 100,000 workers in 2000 and a rate of 72.1 per 100,000 workers in 2009. Males have a higher rate than females for worker compensated hospitalizations.[1] From 2005 to 2009, there were about 50 work related hospitalizations per year for individuals 16 years and older in the GNPHR and about 495 per year in New Hampshire. During this same time, the rate of work related hospitalizations for individuals 16 years and older was 70.9 per 100,000 workers in NH and 43.8 per 100,000 workers in the GNPHR which is significantly lower than NH. Likewise, the GNPHR has a significantly lower rate of emergency department visits at 2,013 per 100,000 workers for individuals 16 years and older than NH at 2,957 per 100,000. Nashua sees an average of 1,166 emergency department visits each year for work related incidents in individuals 16 and older.[5]

Table 11.4 Occupational Health Indicators for Nashua and GNPHR, 2005-2009

2005-2009	Nashua	GNPHR	NH
Average number per year of work-related hospitalizations ages 16 and up	22	50	495
Crude rate of work-related hospitalizations ages 16 and up (per 100,000 workers)	45.4 (28.3-69)	43.8 (32.5-57.8)	70.9 (64.7-77.1)
Average number per year of work-related emergency department visits ages 16 and up	1,166	2,289	20,662
Crude rate of emergency department visits ages 16 and up (per 100,000 workers)	2,452 (2311.7-2593.3)	2,013 (1931-2096)	2,957 (2916.8-2997.4)
Source: NH DHHS			

Figure 11.2 Annual Rate of Inpatient Hospitalizations for Persons Age 16 years and Older, Expected Payer Workers' Compensation, 2000-2009



Source: NH DHHS

[1] Bureau of Labor Statistics. (2014). *Bureau of Labor Statistics Current Population Survey (CPS).* Retrieved from http://www.bls.gov/cps/.

[2]New Hampshire Department of Health and Human Services. (2011). *Occupational Injury and Illness in New Hampshire: 2011 Data Report to Inform Programs and Policies.* Retrieved from http://www.dhhs.nh.gov/dphs/hsdm/ohs/documents/ohs2011.pdf.

[3]US Census Bureau. (2008-2012). *2008-2012 American Community Survey 5-Year Estimates.* Retrieved on August 10, 2014 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

[4]Nashua Regional Planning Commission. (2014). *Draft Community and Economic Vitality Chapter*. Retrieved on September 10, 2014 from http://www.granitestatefuture.org/files/2314/0812/7924/CEV_FULL_DRAFT_8152014.pdf.

[5]Office of Health Statistics and Data Management. *Emergency Department and Inpatient Hospitalizations Database.* Concord, New Hampshire: New Hampshire Department of Health & Human Services, 2000-2009.

Two roads diverged in a wood and I - I took the one less traveled by, and that has made all the difference.

- Robert Frost

Appendix 1. Acronyms

CONTENTS

Acronyms

AIDS	Acquired Immune Deficiency Syndrome
APNCU	Adequacy of Prenatal Care Utilization Index
BRFSS	Behavioral Risk Factor Surveillance System
BMI	Body Mass Index
CDC	Centers for Disease Control and Prevention
CHA	Community Health Assessment
CHIP	Community Health Improvement Plan (Introduction)
CHIP	Children's Health Insurance Program (Chapter 2)
CI	Confidence Interval
DES	Department of Environmental Services
DHHS	Department of Health and Human Services
DPHCS	Division of Public Health and Community Services
DPHS	Division of Public Health Services
DUI	Driving Under the Influence
DWI	Driving While Intoxicated
FEMA	Federal Emergency Management Agency
GNPHR	Greater Nashua Public Health Region
HCC	Harbor Care Clinic, a program of Harbor Homes, Inc
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HP2020	Healthy People 2020
MSM	Men who have sex with men
NAMI	National Alliance on Mental Illness
NCHS	National Center for Health Statistics

NIDA	National Institute on Drugs and Alcohol
NH	New Hampshire
PCP	Primary Care Provider
PNC	Pre-natal Care
SAMHSA	Substance Abuse and Mental Health Services Administration
SDH	Social Determinants of Health
SHIP	State Health Improvement Plan
STD	Sexually Transmitted Disease
TB	Tuberculosis
TEMSIS	Trauma and Emergency Medical Services Information System
USDA	United States Department of Agriculture
WIC	Women, Infant and Children
YRBS	Youth Risk Behavioral System

Coming together is a beginning; keeping together is progress; working together is success. –Henry Ford

Appendix 2: Health Resource Directory

Contents

18 Mulberry Street
Nashua, NH 03060
603.589.4560
www.NashuaNH.gov

City of Nashua
Division of Public Health and Community Services

Mission

To promote, protect and preserve the health and well-being of the Greater Nashua Region through leadership and community collaboration.

Description

The Division of Public Health and Community Services (DPHCS) is the Public Health entity for the City of Nashua. It is one of only two full-service local health departments in the State of New Hampshire. The Division focuses on providing public health services based upon the 10 Essential Services of Public Health. Over thirty Division staff members are employed under the following departments and programs: Community Health Department, Environmental Health Department, City Welfare Department, Emergency Preparedness Program, Child Care Services Program, and Health Education and Prevention Services Program.. All of the Departments within the Division offer services that directly impact the health, social, and economic well-being of the residents of the City of Nashua and the surrounding communities. The Division is centrally located in downtown Nashua and is easily accessed by pedestrian, vehicle, and public transportation.

Mobile Van Outreach: To provide barrier free, off-site access to community residents seeking: adult and childhood immunizations; blood pressure screening; TB, syphilis and hepatitis information and screening; referrals for shelter, food or medical care; and drug and alcohol information/referral to facilitate entry into chemical treatment programs.

Nashua Health Clinic: Adult immunizations are made available to individuals with no insurance or with insurance that does not cover immunizations. Child immunizations are available for all children 18 years and under. In our STD/HIV Clinic tests are available for HIV, Hepatitis C, herpes, gonorrhea, chlamydia and syphilis.

Immunization Clinics:	Blood Pressure Clinics:	STD/HIV Clinic:
Tuesdays 4:00 PM – 7:00 PM	Tuesdays: 1:30 – 3:30PM	Thursdays 3:00 PM - 6:00PM
Fridays 8:30 AM – 10:30 AM	Fridays: 8:30-10:30AM	

Service

Servicing primarily the City of Nashua and the Greater Nashua Region.

LAMPREY HEALTH CARE
Where Excellence and Caring go Hand in Hand

10 Prospect Street, Suite 102
Nashua, NH 03060 603.883.1626
www.lampreyhealth.org

Mission

The mission of Lamprey Health Care is to provide high quality primary medical care and health related services, with an emphasis on prevention and lifestyle management, to all individuals regardless of ability to pay.

Description

Founded in 1971, Lamprey Health Care is New Hampshire's oldest and largest nonprofit community health center. For over 40 years our goal is to remove barriers that prevent access to care – in addition to a sliding fee scale discount, we can also assist with transportation or language barriers. Our family physicians are Board Certified and have studied in several areas of medicine including pediatrics, internal medicine, obstetrics and gynecology. At Lamprey Health Care we offer many other services in response to community need such as:

- Nutrition education and counseling
- Social services and care coordination
- Diabetes education and disease management
- Asthma education and disease management
- Health education and outreach
- Early childhood development program
- Breast and Cervical Cancer Program (BCCP)
- Interpretation and translation services
- Medication Assistance Program (MAP)
- Community Education Programs

In 2013 all of Lamprey Health Care's centers received level III NCQA recognition as a Patient Centered Medical Home, the highest level possible. In order to receive recognition as a Patient Centered Medical Home, organizations must demonstrate that care is organized around the patient, provided by a team of health care professionals and is coordinated and tracked over time.

Service Area

Nashua, Amherst, Brookline, Greenville, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mount Vernon, New Ipswich, and Pelham.

Lamprey Health Care's Medication Assistance Program assists qualifying patients to securing prescription medications for long term and chronic disease conditions directly from pharmaceutical companies. In 2013 we were able to assist patients secure medications valued at $1,761,896.drugs.

Southern New Hampshire Health System
www.snhhs.org
Southern New Hampshire Medical Center & Foundation Medical Partners

8 Prospect Street, PO Box 2014
Nashua, NH 03061
603.577.2000
www.snhmc.org

Mission

Southern New Hampshire Health System is committed to improving, maintaining, and preserving the overall health and well-being of individuals living in the greater Nashua area by providing information, education, and access to exceptional health and medical care services.

Description

Southern New Hampshire Health System consists of Southern New Hampshire Medical Center founded in 1891 and its multi-specialty group practice, Foundation Medical Partners founded in 1993.

Southern New Hampshire Medical Center is a 188-bed acute care facility that retains the personal touch of a traditional community hospital while offering patients the resources of a sophisticated regional medical center. Approximately 635 primary and specialty care providers from Foundation Medical Partners, Dartmouth-Hitchcock Nashua and local independent practices comprise the medical staff of The Medical Center. The organization provides a full complement of services such as labor and delivery, a neo-natal intensive care unit, a sleep center, cardiology and rehabilitation services, minimally invasive surgery using robotic technology, the latest in laboratory services and diagnostic imaging including 3D mammography, as well as 24/7 emergency services. A Magnet hospital since 2007, The Medical Center continues to be recognized for its nursing excellence. The breast health program and deNicola Breast Health Center is an American College of Radiology designated center of excellence and the only nationally accredited program for breast centers in Greater Nashua. The Medical Center is also a DNV Healthcare designated Primary Stroke Center.

Foundation Medical Partners is the second largest multi-specialty practice group in New Hampshire. The Foundation employs over 270 primary care and specialty providers in more than 70 practices, serving the greater Nashua community. Medical practices, many with laboratory, radiology and rehabilitation services, are located throughout the greater Nashua community. For over five years, Immediate Care of Southern New Hampshire has been treating walk-in patients for minor illnesses and injuries at five locations across Greater Nashua.

Through the clinical affiliation with the Massachusetts General Hospital, patients of Southern New Hampshire Health System have access to collaborative programs in pediatric specialties, cancer care, vascular, breast health, thoracic, trauma and critical care, and the management of stroke patients. In addition, program relationships with Dartmouth-Hitchcock OB/GYN and Lahey Cardiology, allow Southern New Hampshire Health System to provide its patients with seamless access to a full complement of adult and maternal child health care.

Service Area

Southern New Hampshire Health System's service area includes the following towns: Nashua, Amherst, Bedford, Brookline, Derry, Francestown, Greenfield, Greenville, Hudson, Hollis, Litchfield, Londonderry, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, New Boston, New Ipswich, Pelham, Salem, Temple, Wilton, Windham, and northern Massachusetts.

ST. JOSEPH HEALTHCARE

172 Kinsley Street
Nashua, NH 03061-2013
603.882.3000
www.stjosephhospital.com

Mission

To provide high quality, compassionate care that contributes to the physical, emotional and spiritual well-being of our community of patients, families and neighbors.

Description

St. Joseph Healthcare is a regional, full-service healthcare system serving the Greater Nashua area, western New Hampshire and northern Massachusetts. We have built on over a century of service to meet the growing needs of our community through innovation, leading-edge technology, and the highest-quality medical care, our tradition since 1908. Our medical staff, employees, and volunteers are recognized among the very best by all the standard quality measures and by those who count the most - our patients.

On the main campus, St. Joseph Hospital, a designated magnet hospital for nursing excellence, is leading the way in the prevention, diagnosis, and treatment of disease. Our 208-bed facility combines the latest technologies with personalized medicine. Here's just some of the leading edge services we provide:

- Round-the-clock emergency services
- Comprehensive, specialized treatment and preventive services at The Cardiovascular and Diabetes Center, Breast Care Center and Oncology Center
- The state's only CARF-accredited stroke program at the Acute Rehabilitation Center
- Labor and delivery services voted among the best in the nation by our patients at The Childbirth Center

An extensive physician network with specialists from the New England Heart Institute and primary care providers from SJ Family Medical Centers, SJ Internal Medicine, the Nashua Medical Group, Dartmouth-Hitchcock Nashua, and many more.

Service Area

St. Joseph's Hospital primary service area includes the following towns: Nashua, Amherst, Brookline, Greenville, Hudson, Hollis, Litchfield, Londonderry, Lyndeborough, Merrimack, Milford, Mont Vernon, Pelham, Wilton, Windham, and northern Massachusetts.

Greater Nashua Mental Health Center
at Community Council
Strengthening Individuals, Families and Our Community Since 1920!

7 & 15 Prospect Street
100 West Pearl Street
440 Amherst Street
Nashua, NH 03060
603.889.6147
www.ccofnashua.org

Mission

Greater Nashua Mental Health Center works with the community in meeting the mental health needs of its residents by offering prompt, professional evaluation and treatment, resource development, community education and research.

Description

Programs for Adults:

- Assessment & Brief Treatment
- Individual, Couples & Group Therapy
- Community Support Services including case management, therapy, psychiatric treatment, and supported employment
- Assertive Community Treatment
- Psychopharmacological Consultation & Management
- Substance Abuse Services, including a Suboxone Program, Intensive Outpatient Program, and Evaluations
- Anger Management Program
- Older Adult Services, including illness management & recovery and REAP (Referral, Education, Assistance and Prevention)

Programs for Children & Adolescents:

- Assertive Community Treatment
- Individual & Family Therapy
- Psychiatric Treatment
- Young Adult Program
- Group Therapy, including Adolescent Dialectical Behavior Therapy (DBT)
- School Based Mental Health Services
- Trauma Focused Treatment
- Supervised Visitation Center
- Child Impact Seminars for Divorcing Parents

Specialized Programs include:
24-Hour Emergency Services, Deaf Services Team, Community Connections Mental Health Court Project and Hillsborough South Drug Court, Homeless Outreach Services and a "Place to Live" Housing Program, *Simply Signs*- a Work Opportunity Program.

Service Area

Greater Nashua Mental Health Center serves the following towns: Amherst, Brookline, Hollis, Hudson, Litchfield, Mason, Merrimack, Milford, Mont Vernon, and the City of Nashua.

Dartmouth-Hitchcock NASHUA

2300 Southwood Drive
Nashua, NH 03063
603.577.4000
dartmouth-hitchcock.org

Mission

Dartmouth-Hitchcock advances health through research, education, clinical practice and community partnerships, providing each person the best care, in the right place, at the right time, every time.

Description

Dartmouth-Hitchcock Nashua has more than 120 providers who provide basic and specialty care for the whole family at our four Nashua area locations: Nashua, Hudson, Merrimack, and Milford. Our services include Allergy, Breast Health & Imaging, Norris Cotton Cancer Center Services, Cardiology, Dermatology, Endoscopy, Family Medicine, Gastroenterology, General Surgery, Vascular Surgery, Infectious Disease, Internal Medicine, Laboratory, Maternal Fetal Medicine, Neurology, Obstetrics & Gynecology, Occupational Medicine, Orthopaedics, Podiatry, CHaD Pediatrics and Specialties, Reproductive Medicine & Infertility, Rheumatology, Urgent Appointments, Urology, Wound Care, and more. Patients and providers benefit from convenient in-house lab and X-ray services at multiple locations; an Urgent Appointment center for walk-ins, same day, evening, and weekend care; and expanded radiology services include Bone Density testing (DEXA), MRI and CT services. As a multispecialty group practice, an array of primary and specialty services are available, and many under one roof. Outpatient tertiary care is also onsite, including reproductive endocrinology/infertility services provided by specialists who travel from Lebanon.

Dartmouth-Hitchcock Nashua is a multi-specialty group practice facility located at 2300 Southwood Drive off of exit-8 in Nashua. The building is designed to be "green" and more space-efficient also provides services via a new "Medical Home" practice model. This type of practice addresses patients' acute, chronic, and preventive health care needs with teams of professionals who collaborate to find the best possible outcome for each patient.

Dartmouth-Hitchcock is an academic health system, serving patients across New England. A national leader in patient-centered health care, D-H is on a path to create a sustainable health system for the region and to become a model for the nation. Founded in 1893, the system includes New Hampshire's only Level 1 trauma center and its only air ambulance service, as well as the Norris Cotton Cancer Center, one of only 41 National Cancer Institute-designated Comprehensive Cancer Centers in the nation, and the Children's Hospital at Dartmouth-Hitchcock, the state's only Children's Hospital Association-approved, comprehensive, full-service children's hospital. Dartmouth-Hitchcock provides access to nearly 1,500 primary care doctors and specialists in almost every area of medicine, as well as world-class research with the Audrey and Theodor Geisel School of Medicine at Dartmouth.

Service Area

Nashua, Litchfield, Milford, Amherst, Merrimack, Hudson, Hollis, and Brookline.

31 Cross Street
Nashua, NH 03064
603.879.9314
www.nashuadentalconnection.org

Mission

The mission of the Greater Nashua Dental Connection is to improve access to affordable oral health care for those in need.

Description

The Greater Nashua Dental Connection is a non-profit dental clinic dedicated to providing residents of New Hampshire reduced fees to help make quality care more accessible to those who may not be able to afford dental care on a regular basis. Those who are eligible for our services include individuals and families enrolled in Medicaid, or are without private dental insurance. The Greater Nashua Dental Connections low-costs make it possible to for patients to receive extremely valuable procedures such as exams, cleanings, charting, x-rays, restorative and extractions on a daily basis.

In order to best carry out our mission, we offer care to those who are eligible for benefits, as well as low-cost services to those without insurance or benefits. We are dedicated to offering significantly reduced fees to help make quality care more accessible to those who may not be able to afford dental care on a regular basis. Last year alone, the Greater Nashua Dental Connection proudly:

- Held over 3,000 appointments;
- Treated over 1,700 patients;
- Performed over 650 unduplicated emergencies; and
- Transported and treated (on average)15-25 students/per week.

Current economic conditions continue to challenge access to affordable health care for many families and individuals. Additionally, many patients travel to our dental clinic due to a lack of similar agencies throughout the state. We are committed to improving the dental health and lives of New Hampshire residents and aim to increase funding, partnerships and program reach. Most recently, we have expanded our clinic hours to help to meet community need.

Service Area

All New Hampshire Residents.

45 High Street
Nashua, NH 03060
603.882.3616
www.harborhomes.org

Mission

To provide housing, healthcare, and supportive services to those challenged with homelessness and/or mental illness.

Description Harbor Homes is a non-profit community-benefit, statewide agency that provides low income, homeless, and disabled New Hampshire community members with affordable housing, primary and behavioral health care, employment and job training, and supportive services.

Located in the Harbor Homes office building at 45 High Street in Nashua, NH, the newly expanded Harbor Care Health and Wellness Center offers a full-service, medical and mental/behavioral health care clinic offering primary, preventive and enabling services to homeless, at risk, and low income community members, for the insured and uninsured.

Harbor Homes provides over 400 units of various housing options including emergency (26 bed shelter for men, women, and families), time-limited, transitional for veterans and their families and/or people living with mental illness, long-term, affordable permanent apartments and shared homes for individuals and families who are at risk of homelessness or living with significant disabilities, and low income/mainstream for individuals and families who are provided access to a variety of affordable apartments throughout New Hampshire.

Harbor Homes provides over 40 supportive programs and services in New Hampshire. Employment assistance is available to their clients, allowing them the ability to earn income while learning new skills and gaining the confidence needed to obtain and sustain employment in the community. Such examples are the Veterans FIRST Homeless Veteran Reintegration Program designed to help homeless veterans acquire and maintain employment, which helps all individuals with resume writing and job search/development by working with a professional employment specialist. Their Veterans FIRST statewide program, is designed to prevent and end veteran homelessness through housing, case management and financial assistance for men, women and family members through, for example, Supportive Services for Veteran Families Program (SSVF) and the Bridge Program. Harbor Homes offers the Greater Nashua Services in Supportive Housing Program, the Homeless Prevention and Rapid Re-Housing Programs and the Social Club and Activities Program (SCOAP) to name a few.

Harbor Homes is a proud member of the Partnership for Successful Living, an efficient and innovative collaboration of six non-profit entities which provides a holistic approach in helping individuals and families achieve sustainable independence through access to housing, health care, education, employment, and supportive services.

Service Area

Harbor Homes serves clients in the Greater Nashua Area, but will assist clients from the entire State of New Hampshire, and other states when possible.

MILFORD REGIONAL
COUNSELING SERVICES, INC
"Affordable counseling services since 1984"

15 Union Street
Milford, NH 03055
603-673-2712
www.mrcs.org

Mission

Milford Regional Counseling Services provides professional behavioral health care services to the residents of the greater Souhegan Valley area, regardless of their ability to pay for services.

Description

Milford Regional Counseling Services (MRCS) provides professional behavioral health care services to the residents of the greater Souhegan Valley area, regardless of their ability to pay for services. It is the only non-profit organization in the region to offer affordable mental health counseling services, through its Milford Area Affordable Counseling Program (MAACP). The goal of the MAACP is to ensure equal access to mental health care, regardless of geographic or financial barriers. More than 150 individuals and families access the agency's services each year. Fees charged for counseling are provided on a sliding fee scale based on household income to individuals, children, and families in the Souhegan Valley area who otherwise would be unable to access such services due to financial and/or geographic limitations.

In particular, MRCS provides individualized, one-on-one counseling and psychotherapy, family counseling, marital counseling, divorce and separation support, treatment for depression and anxiety, HIV/AIDS counseling, grief counseling, and various support groups that are created and managed on an as-needed basis. The agency also specializes in providing counseling services to veterans; and to the homeless and dually-diagnosed individuals (those with both mental illness and substance use disorder issues). In addition to providing time-honored "talk" therapy, MRCS offers alternate, innovative treatments such as expressive, play, and relational therapy to best meet the needs of all clients.

Service Area

In general, Milford Regional Counseling Services provides affordable mental health care to clients who live in the Souhegan Valley region, including the following towns: Milford, Amherst, Allenstown, Lyndeborough, Litchfield, Greenville, Greenfield, Goffstown, Bedford, Francestown, Hollis, Hudson, Mason, Mont Vernon, New Boston, Deerfield, Deering, New Ipswich, Brookline, Wilton, Peterborough, Temple, and the larger cities of Nashua and Manchester.

615 Amherst Street
Nashua, NH 03063
603-598-3644
www.keystonehall.org

Mission

The Greater Nashua Council on Alcoholism, Inc., more commonly referred to as Keystone Hall, is a non-profit organization whose mission is to provide comprehensive substance use treatment and recovery services to individuals and families in a supportive environment while providing a strategic framework for substance use prevention in New Hampshire.

Description

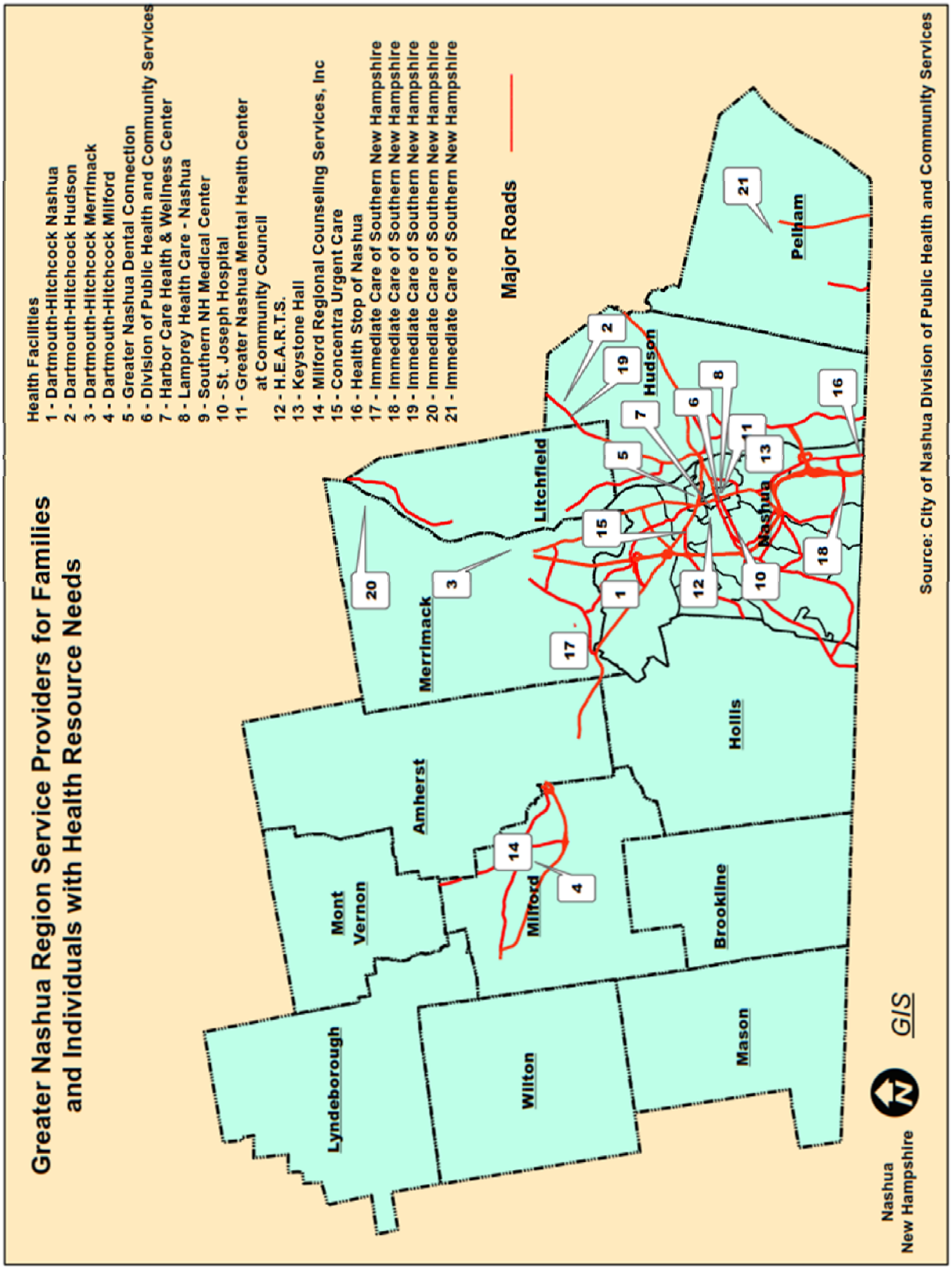
Keystone Hall is uniquely geared to address the needs of some of the most vulnerable members of the community: the homeless, uninsured, and underinsured populations. As the region's only non-medical substance use disorder detoxification, assessment, and treatment center, Keystone Hall has been the catalyst of change in the lives of more than 12,000 individuals throughout the past two decades. The agency does assess sliding fees for some of its services, but no client is refused treatment due to the inability to pay.

Our expanded facility boasts 54 beds, 36 of which are allotted to the mothers and young children of the Cynthia Day Family Center, the only treatment program in New Hampshire that serves pregnant and parenting women with substance use disorders, and allows their young children to live with them as they undergo treatment. Grounded in evidence-based practices and cultural competency, Keystone Hall offers outpatient; intensive outpatient; short, medium and long term residential treatment; and assessments, prevention programs, recovery support services and aftercare for adults, youth, and families striving to overcome addiction. Varying intensity levels are offered, with the specific treatment modality and length of stay tailored to meet each individual client's needs. Keystone Hall is the only agency in the State to offer Intensive Outpatient Treatment entirely in Spanish. In addition, the agency offers 28- and 90-day intensive non-medical detoxification, with future plans to open NH's only medical detoxification center.

Service Area

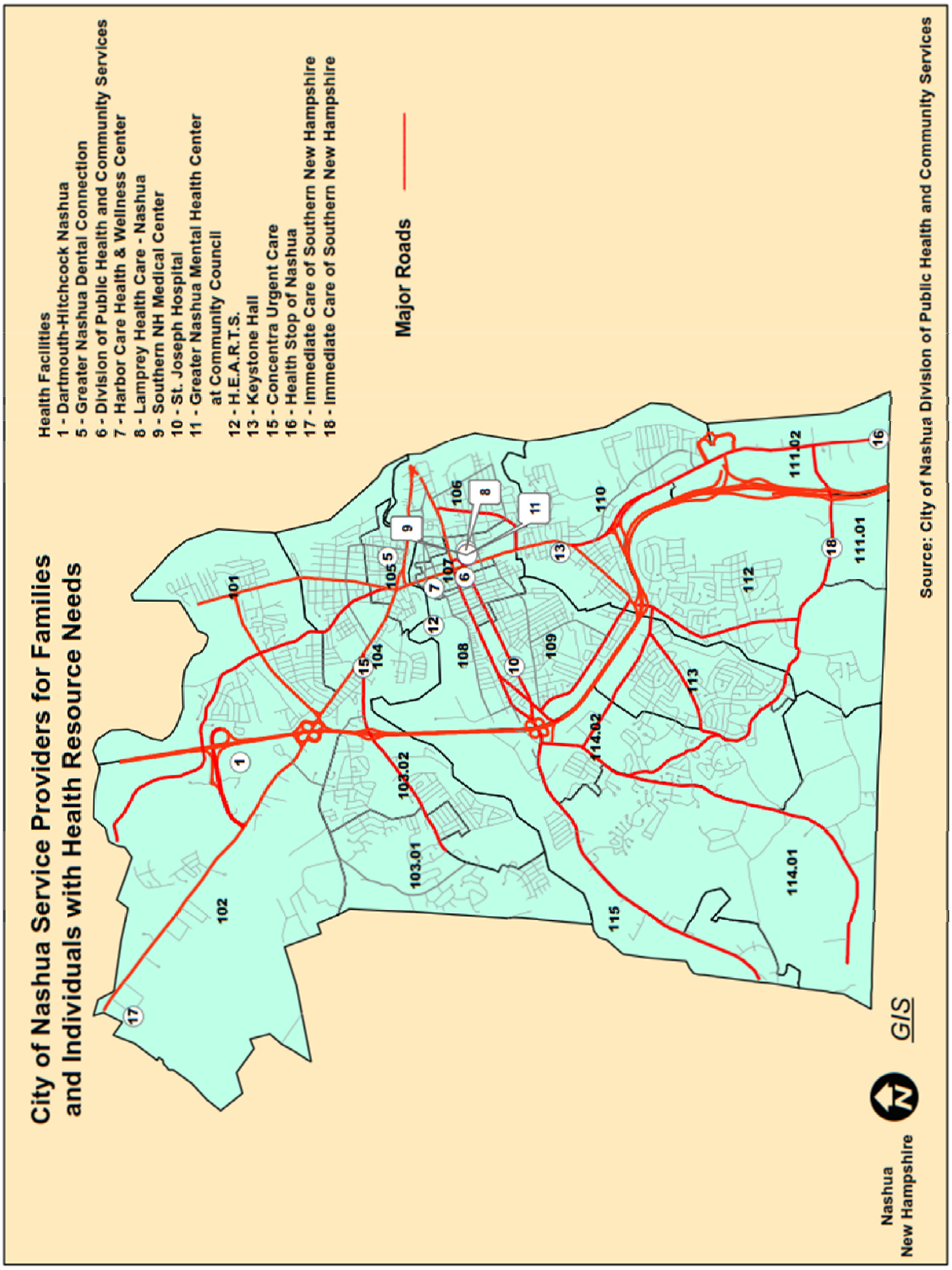
While the many towns surrounding and included within the Greater Nashua Region are Keystone Hall's primary focus area, the agency serves the entire State of New Hampshire.

Map A2.1 Providers for Families and Individuals with Health Resource Needs in the Greater Nashua Public Health Region



Greater Nashua's Service Providers for Families and Individuals with Health Resource Needs			
#	**Organization**	**Address**	**Phone**
1	Dartmouth Hitchcock – Nashua	2300 Southwood Drive, Nashua, NH	603-577-4000
2	Dartmouth Hitchcock – Hudson	208 Robinson Road, Hudson, NH	603-577-3410
3	Dartmouth Hitchcock – Merrimack	294 Daniel Webster Highway, Merrimack, NH	603-440-7722
4	Dartmouth Hitchcock - Milford	14 Armory Road, Milford, NH	603-673-2515
5	Greater Nashua Dental Connection	31 Cross St, Nashua, NH	603-879-9314
6	Division of Public Health & Community Services	18 Mulberry St, Nashua, NH	603-589-4560
7	Harbor Care Health & Wellness Center	45 High St, Nashua, NH	603-821-7788
8	Lamprey Health Care – Nashua Center	10 Prospect St, Nashua, NH	603-883-1626
9	Southern NH Medical Center	8 Prospect St, Nashua, NH	603-577-2000
10	St. Joseph Hospital	172 Kinsley St, Nashua, NH	603-882-3000
11	Greater Nashua Mental Health Center	7 Prospect St, Nashua, NH	603-889-6147
12	H.E.A.R.T.S.	5 Pine Street Extension, Unit Suite 1G, Nashua, NH	603-882-8400
13	Greater Nashua Council on Alcoholism, Inc. Keystone Hall	615 Amherst Street, Nashua, NH	603-881-4848
14	Milford Regional Counseling Services, Inc	15 Union Street, Milford, NH	603-673-2508
15	Concentra Urgent Care	14A Broad St, Nashua, NH	603-889-2354
16	Health Stop	228 DW Highway, Nashua, NH	603-888-9200
17	Immediate Care of Southern New Hampshire	29 Northwest Boulevard, Nashua, NH	603-577-2273
18	Immediate Care of Southern New Hampshire	112 Spit Brook Road, Nashua, NH	603-577-2273
19	Immediate Care of Southern New Hampshire	300 Derry Road, Hudson, NH	603-577-2273
20	Immediate Care of Southern New Hampshire	696 Daniel Webster Highway, Merrimack, NH	603-577-2273
21	Immediate Care of Southern New Hampshire	33 Windham Road, Pelham, NH	603-577-2273

Map A2.1 Providers for Families and Individuals with Health Resource Needs in Nashua



Health Resources Directory

Hospitals		
Facility Name	**Phone**	**Facility Type**
Southern NH Medical Center	603-577-2000	Hospital
St. Joseph Hospital	603-882-3000	Hospital
Pharmacies		
Facility Name	**Phone**	**Facility Type**
Amherst		
Walmart Pharmacy 85 Route 101A	603-672-2021	Pharmacy
Hollis		
Hollis Pharmacy 6 Ash Street	603-465-7100	Pharmacy
Hudson		
Rite Aid Pharmacy 71 Lowell Road	603-882-6335	Pharmacy
Sam's Club Pharmacy 7 Walmart Blvd	603-598-6533	Pharmacy
Walgreens 90 Derry Street	603-880-0248	Pharmacy
CVS Pharmacy 77 Derry Rd	603-882-2301	Pharmacy
Walmart Pharmacy 254 Lowell Road	603-589-4226	Pharmacy
Rite Aid Pharmacy 212 Lowell Road	603-880-1717	Pharmacy
Merrimack		
Osco Pharmacy 570 Daniel Webster Highway	603-424-4519	Pharmacy
Osco Pharmacy 7 Continental Blvd	603-429-0759	Pharmacy
Rite Aid Pharmacy 416 Daniel Webster Highway	603-424-4833	Pharmacy
Walgreens 615 Daniel Webster Highway	603-423-9330	Pharmacy
CVS Pharmacy 356 Daniel Webster Highway	603-424-1130	Pharmacy
Milford		
Rite Aid Pharmacy 15 Mont Vernon St	603-672-7602	Pharmacy
Rite Aid Pharmacy 86 Elm Street	603-249-9901	Pharmacy
Walgreens 571 Nashua Street	603-673-4341	Pharmacy

Rite Aid Pharmacy 586 Nashua Street, Unites 8-9	603-672-7602	Pharmacy
Nashua		
Osco Pharmacy 300 Main Street	603-579-5445	Pharmacy
Target Pharmacy 600 Amherst Drive	603-324-0040	Pharmacy
Costco Pharmacy 311 Daniel HWY	603-888-0514	Pharmacy
CVS Pharmacy 240-242 Main St	603-886-1786	Pharmacy
CVS Pharmacy 633 Amherst St	603-880-6861	Pharmacy
CVS Pharmacy 214 Daniel Webster HWY	603-888-4354	Pharmacy
Hannaford Supermarket & Pharmacy 175 Coliseum Ave	603-889-6663	Pharmacy
Medicine World 262 Main Dunstable Rd	603-881-9500	Pharmacy
Rite Aid 331 Main St	603-886-9210	Pharmacy
Rite Aid 145 Amherst St	603-598-9450	Pharmacy
Target Pharmacy 310 Daniel Webster HWY	603-891-4858	Pharmacy
Walgreen Pharmacy 217 Daniel Webster HWY	603-891-2907	Pharmacy
Walgreen Pharmacy 550 Amherst St	603-595-3373	Pharmacy
Walgreen Pharmacy 283 Main St	603-889-6124	Pharmacy
Wingate Pharmacy 129 Main St	603-882-9733	Pharmacy
Pelham		
Rite Aid 48 Atwood Road	603-635-7996	Pharmacy
Walgreens 151 Bridge Street	603-635-9153	Pharmacy

Basic Needs/Food Pantries

Facility	Phone	Facility Type
Milford		
Share 34 Amherst St Milford, NH 03055	603-673-9898	Food Pantry
Nashua		
Corpus Christi Food Pantry 43 Franklin St Nashua, NH 03064	603-598-1641	Food Pantry
Salvation Army Food Pantry 1 Montgomery Ave Nashua, NH 03060	603-883-7841	Food Pantry
Tolles Street Mission 52 Whitney St Nashua, NH 03060	603-880-4984	Food Pantry
Nashua Soup Kitchen & Shelter 42 Chestnut St Nashua, NH 03060	603-889-7770	Soup Kitchen and Homeless Shelter
Nashua Pastoral Care Center 7 Concord St Nashua, NH 03060	603-886-2866	Basic Needs/ Food Pantry

End of Life Care

Facility	Phone	Facility Type
Merrimack		
Community Hospice House 210 Naticook Rd Merrimack, NH 03054	603-595-5688 603-437-3525	Hospice
Home Health & Hospice Care 80 Continental Blvd Merrimack, NH 03054	603-424-3822 603-882-2941	Hospice
Milford		
Souhegan Home & Hospice Care 24 North River Rd Milford, NH 03055	603-673-3460	Hospice
Nashua		
Beacon Hospice 157 Main Dunstable Rd Nashua, NH 03060	603-579-0665	Hospice
Life Coping, Inc 266-A Main St Nashua, NH 03060	603-888-3588	Hospice

Home Health & Hospice Care 22 Prospect St Nashua, NH 03060	603-424-3822 603-882-2941	Hospice

Funeral Homes

Funeral Home Name	Phone	Facility Type
Hudson		
Dumont-Sullivan Funeral Homes 50 Ferry St Hudson, NH 03051	603-882-9431	Funeral Home
Merrimack		
George R. Rivet Funeral Home Inc 425 Daniel Webster HWY Merrimack, NH 03054	603-424-5530	Funeral Home
Milford		
Smith and Heald Funeral Home 63 Elm St Milford, NH 03055	603-673-1422	Funeral Home
Nashua		
Anctil-Rochette and Son Funeral Home 21 Kinsley St Nashua, NH 03060	603-883-3041	Funeral Home
Davis Funeral Home 1 Lock St Nashua, NH 03064	603-883-3401	Funeral Home
Farwell Funeral Service Inc 18 Lock St Nashua, NH 03064	603-882-0591	Funeral Home
St. Laurent Funeral Home 116 Elm St Nashua, NH 03060	603-882-1771	Funeral Home
Zis-Sweeney Funeral Home 26 Kinsley St Nashua, NH 03060	603-882-3501	Funeral Home
Pelham		
Pelham Funeral Home 11 Nashua Rd Pelham, NH 03076	603-635-3333	Funeral Home

Home Care and Support

Facility	Phone	Facility Type
Meals on Wheels & Congregate Dining/St. Joseph's Community Services P.O. Box 910 Merrimack, NH 03054	603-424-9967	Support
Home Health & Hospice Care 80 Continental Blvd Merrimack, NH 03054	603-424-3822 603-882-2941	Home Care and Hospice
Care Givers Inc 491 Amherst St Nashua, NH 03063	603-595-4502	Drivers
Gateway of Greater Nashua 144 Canal St Nashua, NH 03060	603-882-6333	Support
VNA of Manchester and Southern NH 33 S. Commercial St Suite 401 Manchester, NH 03101	603-622-3781 800-624-6084 603-622-3782	Home Care
La Leche League 7 Poliquin Dr Nashua, NH 03062	603-891-3530	Infant care

Long Term Care

Facility	Phone	Facility Type
Hudson		
Fairview Nursing Home 203 Lowell Rd Hudson, NH 03051	603-882-5261	Elderly/Nursing Home
Laurel Place 203 Lowell Rd Hudson, NH 03051	603- 883-2419	Elderly/Nursing Home
Merrimack		
Rose Haven Home 8 Jennifer Dr Merrimack, NH 03054	603-424-5919	Elderly/Nursing Home
Milford		
Pillsbury Home 95 High St Milford, NH 03055	603-672-1232	Elderly/Nursing Home

Mont Vernon		
Mont Vernon Inn 26 Main St Mont Vernon, NH 03057	603-673-4585	Elderly/Nursing Home
Nashua		
Greater Nashua Subacute & Rehabilitation Center 55 Harris Rd Nashua, NH 03062	603-888-4829	Elderly/Nursing Home
Greenbriar Terrace Healthcare 55 Harris Rd Nashua, NH 03062	603-888-1573	Elderly/Nursing Home
Hunt Community 10 Allds St Nashua, NH 03060	603-882-6511	Elderly/Nursing Home
Nashua Crossings Assisted Living 674 W. Hollis St Nashua, NH 03060	603-882-2898	Elderly/Nursing Home
The Aynsley 80 Lake St Nashua, NH 03060	603-881-4190	Elderly/Nursing Home
The Courville at Nashua 22 Hunt St Nashua, NH 03060	603-889-5450	Elderly/Nursing Home
Senior Centers		
Facility	**Phone**	**Facility Type**
Nashua		
Nashua Senior Activity Center 70 Temple St Nashua, NH 03060	603-889-6155 603-816-2640	Senior Activity Center
Area Agency of Greater Nashua 144 Canal St Nashua, NH 03060	603-882-6333	Adult Day Care
Pelham		
Pelham Senior Center 8 Nashua Rd Pelham, NH 03076	603-635-3800	Senior Activity Center

Health Resource Flyer - English

The Health Resources flyer was developed by the Community Health Improvement Plan Access to Health Care Work Group and the Division of Public Health and Community Services. It provides information on where to access health resources for free or at a reduced cost. This flyer can also be downloaded from the City of Nashua DPHCS website at: http://bit.ly/VsJFoR.

Health Resources
In the Greater Nashua Area

Amherst, Brookline, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Nashua, Pelham, Wilton

Prescription Assistance Programs

Costco Member Prescription Program
800-806-0129
www.costco.com

CVS/pharmacy Health Savings Pass
888-616-CARE (2273)
www.cvs.com/healthsavingspass

Hannaford healthy saver plus
866-315-6421
www.hannaford.com

Humana Walmart-Preferred Rx Plan
800-899-0679
www.walmart.com/rxplan

NH Medication Bridge Program
603-415-4297
http://www.healthynh.com

Rite Aid Rx Savings Program
800-700-3957
www.riteaid.com

RX Hope
1-877-267-0517
www.rxhope.com

RX Assist
www.rxassist.org

RxRelief Pharmacy Discount Card
855-251-3690
www.rxreliefcard.com

Shaw's Osco Pharmacy
877-728-6655
http://www.shawsoscopharmacies.com

Southern New Hampshire Health System & St. Joseph Hospital
603-577-2348
http://www.snhhs.org/Prescription-Assistance **OR** http://www.stjosephhospital.com/Community-Health-Programs/Prescription-Assistance-Program

Target Pharmacy
877-798-2743
www.target.com/pharmacy/generics

The Salvation Army
603-889-5151
www.use.salvationarmy.org

Walgreens Prescription Savings Club
866-922-7312
www.walgreens.com/rxsavingsclub

Urgent Care Centers

For medical emergencies, call 911 or go to the emergency room.

Concentra Urgent Care
603-889-2354
www.concentra.com

Health Stop
603-888-9200

Immediate Care of Southern New Hampshire
603-577-2273
http://www.immediatecareofsnh.org

Oral Health

Greater Nashua Dental Connection
603-879-9314
www.nashuadentalconnection.org

Vision and Hearing

Lions Sight and Hearing Foundation of NH
603-566-0691
www.nhlions.org/LS&H.htm

Southern New Hampshire Health System
603-577-2000
www.snhhs.org
- Hearing Screening

Elderly Support

ServiceLink NH
866-634-9412
www.nh.gov/servicelink

Mental Health/Substance Abuse

Greater Nashua Mental Health Center
603-889-6147
www.ccofnashua.org

H.E.A.R.T.S.
603-882-8400
www.heartspsa.org

Keystone Hall
603-881-4848
www.keystonehall.org

Milford Regional Counseling Services
603-673-2508
www.mrcs.org

Version 1
August 2013

Please call or check the website for pricing and services.

Preventative Health Care Services

City of Nashua, Division of Public Health and Community Services
603-589-4560
www.nashuanh.gov
- HIV/STD/Hepatitis C Testing
- Immunizations

CVS Pharmacy
800-746-7287
www.cvs.com
- Immunizations

Hannaford Pharmacy
866-315-6421
www.hannaford.com
- Blood Pressure Screening
- Immunizations

Harbor Care Health & Wellness Center
603-821-7788
www.harborhomes.org
- Blood Pressure Screening
- Body Composition Testing
- Blood Glucose Testing
- Cancer Screenings
- Cholesterol Check
- Immunizations

Health Stop*
- Immunizations

Lamprey Health Care - Nashua
603-883-1626
www.lampreyhealth.org
- Cancer Screenings
- Immunizations

NH Colorectal Cancer Screening Program
603-653-3702
www.cancer.dartmouth.edu
- Colonoscopy

NH Breast Cancer Coalition
http://www.nhbcc.org/resources
800-852-3345 x 4931
- Cancer Screenings

Rite Aid Pharmacy*
- Immunizations

Shaw's Osco Pharmacy*
- Blood Pressure Screening
- Blood Glucose Testing
- Cholesterol Check
- Immunizations

Southern New Hampshire Health System
603-577-2000
http://www.snhhs.org
- Blood Pressure Screening
- Cancer Screenings

*** Contact Information - Other Side**

Preventative Health Care Services Cont.

St. Joseph Hospital
603-882-3000
http://www.stjosephhospital.com/
- Blood Pressure Screening
- Cancer Screenings

Walgreens
800-925-4733
www.walgreens.com
- Blood Pressure Screening
- Body Composition Testing
- Blood Glucose Testing
- Cholesterol Check
- Cancer Screenings
- Immunizations

Medical Equipment

Charron Medical Services
800-660-7221
www.charronmed.com

Keene Medical Supply
603-449-4770
www.keenemedicalproducts.net

Techmed
603-596-8717
www.techmedhomecare.com

The Fall Safety Store
603-881-8351
www.colonialmedical.com

Wingate's Pharmacy
603-882-9733
www.wingatespharmacy.com

Transportation

Care Ride Wheelchair Transportation:
603-759-3994/ 603-897-0556
Nashua Transit System: 603-880-0100
Souhegan Valley Transportation: 603-880-0100
The CareGivers, Inc.: 603-595-4502

Dial 2-1-1 and contact NH 2-1-1 24 hours a day, 7 days a week to find local and statewide resources!

New Hampshire 2-1-1
Get Connected. Get Answers.
United Ways of New Hampshire-Lead State Partner

Published by:
City of Nashua
Division of Public Health and Community Services
18 Mulberry St. Nashua, NH 03060
603-589-4500
www.nashuanh.gov

Public Health
Prevent. Promote. Protect.

Version 1
August 2013

Please call or check the website for pricing and services.

Health Resource Flyer - Spanish

The Health Resources flyer was developed by the Community Health Improvement Plan Access to Health Care Work Group and the Division of Public Health and Community Services. It provides information on where to access health resources for free or at a reduced cost. This flyer can also be downloaded from the City of Nashua DPHCS website at: http://bit.ly/VsJFoR.

Recursos de Salud
en Greater Nashua Area

Amherst, Brookline, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Nashua, Pelham, Wilton

Programa de Asistencia para Prescripciones

Programa para prescripciones miembros de Costco
800-806-0129
www.costco.com

CVS/farmacia pase de ahorro de salud
888-616-CARE (2273)
www.cvs.com/healthsavingspass

Hannaford healthy saver plus
866-315-6421
www.hannaford.com

Humana Walmart-Preferred Rx Plan
800-899-0679
www.walmart.com/rxplan

NH Medication Bridge Program
603-415-4297
http://www.healthynh.com

Rite Aid Rx Savings Program
800-700-3957
www.riteaid.com

RX Hope
1-877-267-0517
www.rxhope.com

RX Assist
www.rxassist.org

RxRelief Farmacia Tarjeta de descuento
855-251-3690
www.rxreliefcard.com

Farmacia Shaw's Osco
877-728-6655
http://www.shawsoscopharmacies.com

Sistema de Salud de Southern New Hampshire & St. Joseph Hospital
603-577-2348
www.snhhs.org/Prescription-Assistance **OR**
www.stjosephhospital.com/Community-Health-Programs/Prescription-Assistance-Program

Farmacia de Target
877-798-2743
www.target.com/pharmacy/generics

The Salvation Army
603-889-5151
www.use.salvationarmy.org

Walgreens Prescripciones club de ahorro
866-922-7312
www.walgreens.com/rxsavingsclub

Centros de Emergencias

para emergencias médicas, llame al 911 o ve a la sala de emergencia

Concentra Urgent Care
603-889-2354
www.concentra.com

Health Stop
603-888-9200

Immediate Care of Southern New Hampshire
603-577-2273
http://www.immediatecareofsnh.org

Salud Oral

Greater Nashua Dental Connection
603-879-9314
www.nashuadentalconnection.org

Visión y Audición

Lions Sight and Hearing Foundation of NH
603-566-0691
www.nhlions.org/LS&H.htm

Southern New Hampshire Health System
603-577-2000
www.snhhs.org
- exámenes de audición

Centro de apoyo para ancianos

ServiceLink NH
866-634-9412
www.nh.gov/servicelink

Salud Mental/Abuso de Sustancias

Greater Nashua Mental Health Center
603-889-6147
www.ccofnashua.org

H.E.A.R.T.S.
603-882-8400
www.heartspsa.org

Keystone Hall
603-881-4848
www.keystonehall.org

Milford Regional Counseling Services
603-673-2508
www.mrcs.org

Version 1
August 2013

Por favor llame o visite el sitio web para precios y servicios.

Servicios de Salud y Cuidados Preventivos

División de Salud Pública y Servicios Comunitarios de Nashua
603-589-4560
www.nashuanh.gov
- Pruebas de VIH / enfermedades venéreas/ Hepatitis C
- Inmunizaciones

Farmacia CVS
800-746-7287
www.cvs.com
- Inmunizaciones

Farmacia Hannaford
866-315-6421
www.hannaford.com
- Presión arterial
- Inmunizaciones

Harbor Care Health & Wellness Center
603-821-7788
www.harborhomes.org
- Presión arterial
- Pruebas de composición corporal
- Pruebas de glucosa en la sangre
- Detección de cáncer
- Pruebas de colesterol
- Inmunizaciones

Health Stop*
- Inmunizaciones

Lamprey Health Care - Nashua
603-883-1626
www.lampreyhealth.org
- Detección de cáncer
- Inmunizaciones

NH Colorectal Cancer Screening Program
603-653-3702
www.cancer.dartmouth.edu
- Colonoscopia

NH Breast Cancer Coalition
www.nhbcc.org/resources
800-852-3345 x 4931
- Detección de cáncer

Farmacia Rite Aid*
- Inmunizaciones

Shaw's Osco Pharmacy*
- Presión arterial
- Pruebas de glucosa en la sangre
- Pruebas de colesterol
- Inmunizaciones

Southern New Hampshire Health System
603-577-2000
www.snhhs.org
- Presión arterial
- Cancer Screenings

*** Información para contactar**

Servicios de Salud y Cuidados Preventivos

St. Joseph Hospital
603-882-3000
http://www.stjosephhospital.com/
- Presión arterial
- Detección de cáncer

Walgreens
800-925-4733
www.walgreens.com
- Presión arterial
- Pruebas de composición corporal
- Pruebas de glucosa en la sangre
- Pruebas de colesterol
- Detección de cáncer
- Inmunizaciones

Equipo Medico

Charron Medical Services
800-660-7221
www.charronmed.com

Keene Medical Supply
603-449-4770
www.keenemedicalproducts.net

Techmed
603-596-8717
www.techmedhomecare.com

The Fall Safety Store
603-881-8351
www.colonialmedical.com

Farmacia Wingate's
603-882-9733
www.wingatespharmacy.com

Transportacion

Care Ride Transportacion de Personas en sillas de ruedas
603-759-3994/ 603-897-0556
Nashua Transit System: 603-880-0100
Souhegan Valley Transportation: 603-880-0100
The CareGivers, Inc.: 603-595-4502

Marca 2-1-1 y contacta NH 2-1-1 24 horas al dia, 7 dias a la semana para encontrar recursos locales y estatales!

New Hampshire 2-1-1
Get Connected. Get Answers.
United Ways of New Hampshire-Lead State Partner

Publicado por :
División de Salud Pública
y Servicios Comunitarios
de Nashua
18 Mulberry St. Nashua, NH 03060
603-589-4560
www.nashuanh.gov

Public Health
Prevent. Promote. Protect.

Por favor llame o visite el sitio web para precios y servicios.

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Recursos de saúde
Na Área de Nashua e Arredores

Amherst, Brookline, Hollis, Hudson, Litchfield, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, Nashua, Pelham, Wilton

Programa de Assistência a prescrição médica

Programa de prescrição médica para membros da Costco
800-806-0129
www.costco.com

CVS/Farmácia Passe de Economia para a Saúde
888-616-CARE (2273)
www.cvs.com/healthsavingspass

Hannaford Saudável saver plus
866-315-6421
www.hannaford.com

Humana Walmart- Plano preferencial Rx
800-899-0679
www.walmart.com/rxplan

NH - Programa de Medicamentos da Bridge
603-415-4297
http://www.healthynh.com

Rite Aid Rx- Programa Economico
800-700-3957
www.riteaid.com

RX Hope
1-877-267-0517
www.rxhope.com

RX Assist
www.rxassist.org

RxRelief Farmácia - Cartão de desconto
855-251-3690
www.rxreliefcard.com

Farmácia Shaw's Osco
877-728-6655
http://www.shawsoscopharmacies.com

Sistema de Saúde do Southern New Hampshire & Hospital St. Joseph
603-577-2348
http://www.snhhs.org/Prescription-Assistance **OR** http://www.stjosephhospital.com/Community-Health-Programs/Prescription-Assistance-Program

Farmácia Target
877-798-2743
www.target.com/pharmacy/generics

The Salvation Army
603-889-5151
www.use.salvationarmy.org

Walgreens - Clube de Prescrição Economica
866-922-7312

Centros de Tratamento Urgentes

Para atendimento médico de emergência, ligar para 911 ou vá para a sala de emergência

Concentra Urgent Care
603-889-2354
www.concentra.com

Health Stop
603-888-9200

Immediate Care of Southern New Hampshire
603-577-2273
http://www.immediatecareofsnh.org

Saúde Oral

Greater Nashua Dental Connection
603-879-9314
www.nashuadentalconnection.org

Visão e audição

Lions Sight and Hearing Foundation of NH
603-566-0691
www.nhlions.org/LS&H.htm

Southern New Hampshire Health System
603-577-2000
www.snhhs.org
- Hearing Screening

Apoio ao Idoso

ServiceLink NH
866-634-9412
www.nh.gov/servicelink

Saúde Mental e abuso de substâncias

Greater Nashua Mental Health Center
603-889-6147
www.ccofnashua.org

H.E.A.R.T.S.
603-882-8400
www.heartspsa.org

Keystone Hall
603-881-4848
www.keystonehall.org

Milford Regional Counseling Services
603-673-2508
www.mrcs.org

Por Favor, ligue ou visite o site para obter informações sobre preços e serviços.

Serviços de cuidados preventivos de saúde

Divisão de Saúde Pública e Serviços Comunitarios da Cidade de Nashua
603-589-4560
www.nashuanh.gov
- Teste de HIV/DST/Hepatite C
- Imunizações

Farmácia CVS
800-746-7287
www.cvs.com

Farmácia Hannaford
866-315-6421
www.hannaford.com
- Mensuração da Pressão Arterial
- Imunizações

Harbor Care Health & Wellness Center
603-821-7788
www.harborhomes.org
- Mensuração da Pressão Arterial
- Testes de composição corporal
- Teste de glicemia
- Detecção de cancer
- Verificação de colesterol
- Imunizações

Health Stop*
- Imunizações

Lamprey Health Care - Nashua
603-883-1626
www.lampreyhealth.org
- Detecção de cancer
- Imunizações

NH Programa de Detecção do Câncer Colorretal
603-653-3702
www.cancer.dartmouth.edu
- Colonoscopia

NH Coligação contra o Câncer de Mama
http://www.nhbcc.org/resources
800-852-3345 x 4931
- Detecção de cancer

Farmácia Rite*
- Imunizações

Farmácia Shaw's Osco*
- Mensuração da Pressão Arterial
- Teste de glicemia
- Verificação de colesterol
- Imunizações

Sistema de Saúde Southern New Hampshire
603-577-2000
http://www.snhhs.org
- Mensuração da Pressão Arterial
- Detecção de cancer

***Informações de Contato - Outro Lado**

Serviços de cuidados preventivos de saúde—Cont.

Hospital St. Joseph
603-882-3000
http://www.stjosephhospital.com/
- Mensuração da Pressão Arterial
- Detecção de cancer

Walgreens
800-925-4733
www.walgreens.com
- Mensuração da Pressão Arterial
- Testes de composição corporal
- Teste de glicemia
- Verificação de colesterol
- Detecção de cancer
- Imunizações

Equipamento Médico

Charron Medical Services
800-660-7221
www.charronmed.com

Keene Medical Supply
603-449-4770
www.keenemedicalproducts.net

Techmed
603-596-8717
www.techmedhomecare.com

The Fall Safety Store
603-881-8351
www.colonialmedical.com

Farmácia Wingate's
603-882-9733
www.wingatespharmacy.com

Transporte

Care Ride—Transporte para cadeirante
603-759-3994/ 603-897-0556
Sistema de trânsito de Nashua: 603-880-0100
Souhegan Valley Transporte: 603-880-0100
The CareGivers, Inc.: 603-595-4502

Disque 2-1-1 , e entre em contato com o NH 2-1-1, 24 horas por dia, 7 dias na semana, para encontrar recursos locais e estaduais!

Publicado pela:

Divisão de Saúde Pública
e Serviços Comunitarios
da Cidade de Nashua
18 Mulberry St. Nashua, NH 03060
603-589-4500
www.nashuanh.gov

Por Favor, ligue ou visite o site para obter informações sobre preços e serviços.

Youth Mental Health Resources Flyer

The Health Resources flyer was developed by the Community Health Improvement Plan Mental Health Work Group and the City of Nashua Division of Public Health and Community Services. It provides information on where to access mental health resources for youth. This flyer can also be downloaded from the City of Nashua DPHCS website at: http://bit.ly/1oBmm9w.

Youth Mental Health Resources – Greater Nashua

Organization	Contact Information	Advocacy	Alcohol & Substance Use	Bereavement	Counseling	Crisis Services	Developmental Disabilities	Domestic & Sexual Violence	Eating Disorders	Family /Relationships	Gender Identity	Immigrant & Refugee Svcs	Information & Referral	Learning Disabilities	Parent Education & Support	Training & Education	Self-Injurious Behavior	Suicide Prevention	Support for Military Families	Support Groups	Transition to Adulthood	Trauma
Bridges: Domestic & Sexual Violence Support	Nashua Office: (603) 889-0858 Milford Office: (603) 672-9833 24-Hour Crisis Line: (603) 883-3044 **www.bridgesnh.org**	X				X		X					X			X				X		X
Child Advocacy Center	Nashua: (603) 889-0321 **www.cac-nh.org/centers/hillsborough-county**							X														X
Child and Family Services of NH	Nashua: (603) 889-7189 **www.cfsnh.org**	X				X		X		X			X		X		X		X	X	X	X
Family Resource Center of Greater Nashua	Boys & Girls Club of Greater Nashua Nashua: (603) 883-0523 x 215 **https://sites.google.com/site/familyresourcectrnashua/**									X					X	X						
Gateways Community Services	Nashua: (603) 882-6333 **www.gatewayscs.org**						X															
Greater Nashua Mental Health Center Child & Adolescent Services	Nashua: (603) 889-6147 / 24 Emergency: 800-762-8191 **www.gnmhc.org**			X	X					X	X					X	X	X			X	X
Greater Nashua Supervised Visitation Center - GNMHC	Nashua: (603) 598-7123 x 3497 **www.gnmhc.org**							X					X									
H.E.A.R.T.S. Peer Support Center of Greater Nashua	(603) 882-8400 **www.heartspsa.org**	X				X							X	X			X	X		X		X
Harbor Homes, Inc.	Nashua: (603) 882-3616 **www.harborhomes.org**		X	X	X	X				X					X	X		X	X		X	X
Lamprey Health Care	Nashua: (603) 883-1626 **http://lampreyhealth.org**	X										X	X		X					X		
Marguerite's Place	Nashua: (603) 598-1582 **www.margueritesplace.org**	X											X		X				X			
Milford Regional Counseling Services	Milford: (603) 673-2508 **www.mrcs.org**			X	X	X		X		X					X			X			X	
National Alliance on Mental Illness - NH	Concord: (603) 225-5359 / 800-242-6264 **www.naminh.org**	X											X		X	X						

2-1-1 New Hampshire – Information & Referral Services for NH – Dial 211 – 24 hours/day, 7 days/week – www.211nh.org

Youth Mental Health Resources – Greater Nashua

Organization	Contact Information	Advocacy	Alcohol & Substance Use	Bereavement	Counseling	Crisis Services	Developmental Disabilities	Domestic & Sexual Violence	Eating Disorders	Family Dynamics	Gender Identity	Immigrant & Refugee Svcs	Information & Referral	Learning Disabilities	Parent Education & Support	Training & Education	Self-Injurious Behavior	Suicide Prevention	Support for Military Families	Support Groups	Transition to Adulthood	Trauma
Nashua Soup Kitchen & Shelter	Nashua: (603) 889-7770 **www.nsks.org**	X				X						X	X									
Parent Information Center	Concord:(603) 224-7005 / V/TDD (800) 947-7005 (NH only) **www.picnh.org**														X							
The PLUS Company	Nashua: (603) 889-0652 **www.pluscompany.org**	X						X							X						X	
The Youth Council	Nashua: (603) 889-1090 **www.theyouthcouncil.org**		X		X						X		X		X			X				X

Additional Resources

- **Balanced Mind Foundation**
  HELPLINE: (800) 273-TALK
  www.thebalancedmind.org
- **Council for Children with Behavioral Disorders**
  www.ccbd.net
- **Depression and Bipolar Support Alliance**
  National: (800) 826-3632
  www.DBSAlliance.org / www.dbsanashua.org
- **Granite State Federation for Families for Children's Mental Health**
  (603) 296-0692
  www.gsffcmh.org
- **Intervention Central, Tools & Resources for School Staff and Parents**
  www.interventioncentral.org
- **National Child Traumatic Stress Network**
  www.nctsnet.org
- **National Eating Disorders Association**
  (800) 931-2237
  www.nationaleatingdisorders.org
- **National Institute of Mental Health**
  www.nimh.nih.gov
- **National Mental Health Consumer Self-Help Clearinghouse**
  (800) 553-4539
  www.mhselfhelp.org
- **NH Al-Anon/Alateen**
  (603) 645-9518
  www.nhal-anon.org
- **New Hampshire Catholic Charities**
  (800) 562-5249
  www.nh-cc.org
- **New Hampshire Center for Effective Behavioral Intervention & Supports**
  (603) 206-6800
  http://nhcebis.seresc.net
- **New Hampshire Psychological Association**
  (603) 792-6472
  www.nhpaonline.org
- **Parents & Friends of Lesbians and Gays (PFLAG-NH)**
  (603) 536-3823
  www.pflagnh.org
- **The Strength of Us (**an on-line social network for teens living with mental health conditions
  CRISIS LINE: (800) 273-8255
  http://strengthofus.org
- **Runaway Safe Line**
  800-786-2929
  www.1800runaway.org
- **SAMHSA (Substance Abuse and Mental Health Services Administration**
  (877) 726-4727 **www.samhsa.gov**
- **Suicide Prevention Hotline**
  (800) 273-8255
  Spanish: (888) 628-94

This resource listing was developed by the Greater Nashua Community Health Improvement Plan, Mental Health Workgroup.
It is intended for use by school staff to connect students and their families to available mental health support resources.
Please contact the City of Nashua Division of Public Health and Community Services at (603) 589-4560 for more information.

2-1-1 New Hampshire – Information & Referral Services for NH – Dial 211 – 24 hours/day, 7 days/week – www.211nh.org

The secret is to gang up on the problem, rather than each other.

- Thomas Stalkamp

Appendix 3. Demographic Snapshot

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Table A3.1 GNPHR Demographics by Town, 2008-2012

	Amherst	Brook-line	Hollis	Hudson	Litch-field	Lynde-borough	Mason	Merri-mack	Milford	Mont Vernon	Pelham	Wilton
Total Population	11,201	4,979	7,679	24,484	8,263	1,484	1,377	25,540	15,079	2,401	12,850	3,685
Total Households	4,031	1,643	2,746	8,736	2,667	605	506	9,763	6,015	818	4,288	1,439
Race & Ethnicity												
% Minority	6.3	3.3	4.3	5.7	3.3	3	6	4.7	3.2	1.2	3.5	1.2
% Hispanic Latino (of any race)	5.9	2.4	4.9	4.3	2.9	0.5	0.5	2.4	1.6	2.2	1.6	0.8
Educational Attainment (25 years and older)												
% Less than 9th Grade, No Diploma	1.9	1.2	0.8	2.6	2.2	2.6	1	0.9	2.2	1.3	2.9	1.9
% High School Grad	12.5	25.1	17.1	29.5	21.7	32.3	24.2	25.3	27.8	21.6	33	28.3
% Some College, No Degree	12.1	18.4	11.3	20.9	24.7	16.5	17.2	16.5	19.7	17.2	20.9	20.7
% Assoc. Degree	9.8	9.6	8.4	10.6	11.2	12.3	9.9	11.1	11.1	8	9.6	13.9
% Bachelor's Degree	36.6	28	32.5	21.2	24.2	23.1	27.6	27.8	24.5	27.3	21.4	18.9
% Graduate or Professional Degree	24.2	15.6	28.3	10	11.6	8.1	15.4	14.3	11.6	23	8.2	11.9
Language Spoken at Home (5 years and over)												
% English Only	94.2	95.6	94.4	87.7	93.3	96.9	95.4	91.8	93.4	96.9	92	93.1
% Language Other Than English	5.8	4.4	5.6	12.3	6.7	3.1	4.6	8.2	6.6	3.1	8	6.9
% Speaking English Less Than Very Well	1.1	0.1	1.7	4	1.6	0.1	2.2	2.1	1.3	0.6	1.7	0.8
Employment Status (16 Years and Over)												
% Employed	67.9	73.4	62.9	68.5	69.9	69.5	67.5	73.1	71.4	72.1	72.6	63.1
% Unemployed (2012)	4.8	4.8	4.7	6.0	5.2	4.2	4.7	4.9	4.7	4.5	7.2	4.8
Income & Poverty												
Median Household Income	$113,260	$102,785	$102,159	$85,500	$108,466	$85,457	$88,750	$90,014	$68,451	$93,828	$96,852	$68,693
% of All Below Poverty Level	3.6	2.9	1.2	3.9	4.8	4.9	10.9	2.8	5.9	4.2	3.6	7.1
% Female Householder, Below Poverty Level	9.3	24.7	0	14.1	7.9	16.1	69.2	19	16.2	0	8.4	15.8

Source: US Census Bureau, 2008-2012 American Community Survey; New Hampshire Employment Security – Economic and Labor Market Information Bureau

Table A3.2 Nashua's Demographics by Census Tract, 2008-2012 American Community Survey

	CT 101	CT 102	CT 103.1	CT 103.2	CT 104	CT 105	CT 106	CT 107	CT 108
Total Population	5462	6881	4847	4086	5429	3795	5227	1323	7283
Total Households	1984	2987	1994	1666	2074	1739	2379	736	3025
Race & Ethnicity									
% Minority	9.2	15.8	10.8	8.8	8.6	20.6	19.8	14.7	19.5
% Hispanic Latino (of any race)	4.7	5.8	6.5	6	8.6	28.8	20.3	22.1	23.4
Educational Attainment (25 years and older)									
% Less than 9th Grade, No Diploma	1.4	2.2	1.7	0.9	2.8	14.4	7.3	10.5	15.1
% High School Grad	19.1	19.7	18.2	23.9	26	29.9	37.9	38.6	29.2
% Some College, No Degree	21.5	11.9	12.6	21.4	16.1	21.4	25.6	15.2	21.2
% Assoc. Degree	7.3	6.9	9.6	13.5	7.9	10.8	10.2	4.9	5.6
% Bachelor's Degree	29.6	32	37.1	23.5	24.6	7.8	10.2	14.8	10.9
% Graduate or Professional Degree	17.5	20.2	16.3	13.3	15.1	3.5	1.5	3.9	3.4
Language Spoken at Home (5 years and over)									
% English Only	88.2	81.7	86	87	86.3	72.8	77.4	70.6	68.6
% Language Other Than English	11.8	18.3	14	13	13.7	27.2	22.6	29.4	31.4
% Speaking English Less Than Very Well	2.9	7.8	1.4	2.7	6.1	14.3	8	14.8	18.9
Employment Status (16 Years and Over)									
% Employed	67	73.4	64.8	68.6	73.4	56.9	60.5	39.3	58.8
% Unemployed	5.4	3.5	6.2	6	3.2	12.5	8.3	6.4	10.3
Income & Poverty									
Median Household Income	91,237	69,834	85,119	74,265	84,643	35,354	27,019	21,948	30,143
% of All Below Poverty Level	1.7	6.7	0.7	2.6	3.7	29.2	27.2	30.5	29.3
% Female Householder, Below Poverty Level	0	18.9	1.8	4.1	4.6	47.3	37.6	13.5	40.7

Source: US Census Bureau, 2008-2012 American Community Survey

Table A3.2 Continued

	CT 109	CT 110	CT 111.01	CT 111.02	CT 112	CT 113	CT 114.01	CT 114.02	CT 115
Total Population	6253	5337	3503	3424	6233	4671	5273	5136	2660
Total Households	2388	1807	1735	1766	2385	1524	2066	1872	1082
Race & Ethnicity									
% Minority	13.3	9	15	24.9	18.3	9.5	14.3	16.9	5.2
% Hispanic Latino (of any race)	13.6	5.6	4.6	8.1	1.1	2	5.6	9.2	3
Educational Attainment (25 years and older)									
% Less than 9th Grade, No Diploma	6	3	5	4.5	1.8	4.6	2.2	0.8	9
% High School Grad	29.8	28.3	24.5	24	11.9	23.3	27.3	27	31.8
% Some College, No Degree	19.6	18.7	20.3	15.8	9.3	19	19.9	21.6	23.9
% Assoc. Degree	9.4	9.5	11.2	10.4	9.2	12	6.9	8.4	7
% Bachelor's Degree	18.8	23.3	21.6	20.6	37.3	22.1	24.2	22	14.6
% Graduate or Professional Degree	7.7	10.4	16.7	22.3	27	14.4	13	12.5	5.2
Language Spoken at Home (5 years and over)									
% English Only	77.2	86.9	76.4	68.5	78.4	87.9	88.3	76.4	83.5
% Language Other Than English	22.8	13.1	23.6	31.5	21.6	12.1	11.7	23.6	16.5
% Speaking English Less Than Very Well	9.4	3.7	12.6	7.9	9.3	3.1	4.8	7.5	6
Employment Status (16 Years and Over)									
% Employed	67.7	65.2	76.9	70.9	65.8	66.5	65.9	72.9	59
% Unemployed	4.9	4.7	4.5	5	3.9	3.3	6.1	4.8	5.7
Income & Poverty									
Median Household Income	61,646	84,825	57,520	61,275	114,425	105,833	87,292	78,509	55,538
% of All Below Poverty Level	9.8	7.1	6.3	6.6	2.4	3.4	1.8	3.5	2.2
% Female Householder, Below Poverty Level	43.6	0	20.7	15	0	10	16.8	21.3	0

Source: US Census Bureau, 2008-2012 American Community Survey