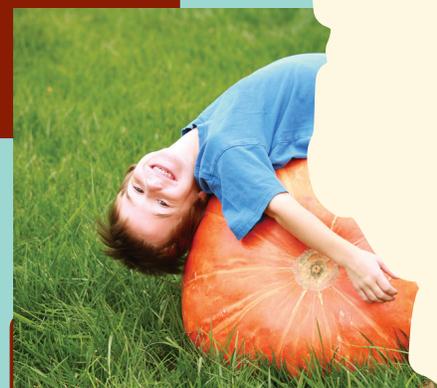


# 2011 New Hampshire State Health Profile

*Improving Health,  
Preventing Disease,  
Reducing Costs for All*



# NEW HAMPSHIRE STATE HEALTH PROFILE

THE STATE OF NEW HAMPSHIRE'S HEALTH  
— A REPORT TO NEW HAMPSHIRE RESIDENTS —



NEW HAMPSHIRE DEPARTMENT OF HEALTH AND HUMAN SERVICES  
DIVISION OF PUBLIC HEALTH SERVICES

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NH DIVISION OF  
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Improving health, preventing disease, reducing costs *for all*

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# TABLE OF CONTENTS

<i>Letter from the Director</i> .....	6
<i>Preface</i> .....	8
<b><i>Key Indicators At-A-Glance</i></b> .....	12
<b><i>Demographics</i></b> .....	16
Geography and Population.....	16
<b><i>Health Behaviors</i></b> .....	22
Smoking and Tobacco Use.....	22
Fruit and Vegetable Intake .....	24
Obesity .....	25
Physical Activity.....	27
Alcohol and Drug Abuse .....	29
Human Immunodeficiency Virus (HIV) .....	32
Teen Births .....	34
Breastfeeding.....	35
Seat Belt Use .....	36
Bicycle Helmet Use in Youth .....	37
<b><i>Access to Care</i></b> .....	39
Health Insurance Coverage.....	39
<b><i>Quality of Care</i></b> .....	41
Preventable Hospitalizations.....	41
Vaccine Preventable Diseases .....	42
<b><i>Community and Environment</i></b> .....	45
Air Pollution.....	45
Radon .....	46
Lead (Child and Adult) .....	48
Occupational Health.....	49
Lyme .....	51
<b><i>Mortality</i></b> .....	52
Death Rate .....	52
Low Birth Weight and Infant Mortality.....	55
<b><i>Mental Health</i></b> .....	57
Youth Suicide Rate.....	60
<b><i>Healthy Days</i></b> .....	62
<b><i>Cancer</i></b> .....	64
Top Five Cancers in New Hampshire .....	65
Prostate Cancer .....	68
Breast Cancer.....	69
Lung Cancer.....	70

Colorectal Cancer .....	71
Bladder Cancer .....	73
Cervical Cancer .....	74
<b><i>Cardiovascular Diseases and Risk Factors</i></b> .....	<b>75</b>
Heart Disease .....	75
Diabetes .....	78
<b><i>Asthma</i></b> .....	<b>83</b>
<b><i>Unintentional Injury</i></b> .....	<b>85</b>
<b><i>Poisoning Deaths</i></b> .....	<b>87</b>
<b><i>Dental Disease in Children</i></b> .....	<b>89</b>
<b>Appendix: NH Public Health Regions</b> .....	<b>91</b>

# TABLE OF CONTENTS

Dear Colleagues:

I am proud to share with you the *New Hampshire State Health Profile 2011*. I trust you will find the information in this report useful in your work to improve the public's health in the State.

New Hampshire is fortunate to consistently be a leader on measures of health and wellbeing when compared with other states. Researchers have rated New Hampshire the most livable state based on income, jobs, crime, and health measures, fifth in the nation for having a strong health system, the third healthiest state overall, and the healthiest state for children.

Beyond the headlines that accompany the publication of these data, it is our responsibility to maintain the efforts that have allowed us to achieve these results, and to understand that they are the outcome of the interaction of several different factors that come together as our public health system. We should be proud of our achievements, but not blind to the fact that there is need for improvement, especially for people whose circumstances have made them vulnerable to poor health.

We need to remember that public health has been the driver of improvements in the length and quality of life in the US over the last century. We moved from 49 years of life expectancy in the early 1900s to approximately 80 years today. These changes are due mostly to a decrease in infant mortality and the impact of infectious diseases related to improvements in sanitation and the use of vaccines. These and other public health efforts are not always evident to the general public; they are often in the background. But safe water, good air quality, food safety and proper living conditions are still valuable today and important public health achievements.

Today our way of life in New Hampshire, and in the US, presents new challenges, with emerging preventable illness becoming increasingly important. Even though we are living longer, some people in New Hampshire are still not living up to their full potential and are dying early from preventable causes, often following years of painful and costly disease and disability. We see in this report how diabetes, heart disease, and other chronic conditions clearly linked to tobacco use, poor nutrition, and inadequate levels of physical activity continue to cause long-term illness and disability. In younger populations, injuries remain the leading cause of death.

The solutions to these problems start long before we need medical care. The opportunities to better health begin where we live, learn, work, and play. I invite you to join me in seizing those opportunities that ensure everyone in New Hampshire has the right choices to lead a healthy life.

Sincerely,



José T. Montero  
Director, Division of Public Health Services,  
NH Department of Health and Human Services



Scientists have found that the conditions in which we live, work, and play have an enormous impact on our health. This knowledge is reflected in what is called the social determinants of health model.

Who our parents are, the conditions of our homes and neighborhoods, how far we proceed in school, what jobs we pursue, how much money we make, what we eat, whether we exercise or not, if we smoke or drink, and if we have access to health care and more all contribute to our overall health. For example, individuals with less than a high school education, making less than \$25,000 a year, or living in the North Country or the Lakes Region are more likely to be smokers than are those making more money, with higher education, or living elsewhere in New Hampshire.

The indicators in this report are presented using an adaptation of the County Health Rankings approach as shown below [1]. The indicators are selected and organized to reflect the social determinants of health model.

**Health Factors** – Greatly influence health outcomes and for the purpose of this report are comprised of several broad encompassing categories including;

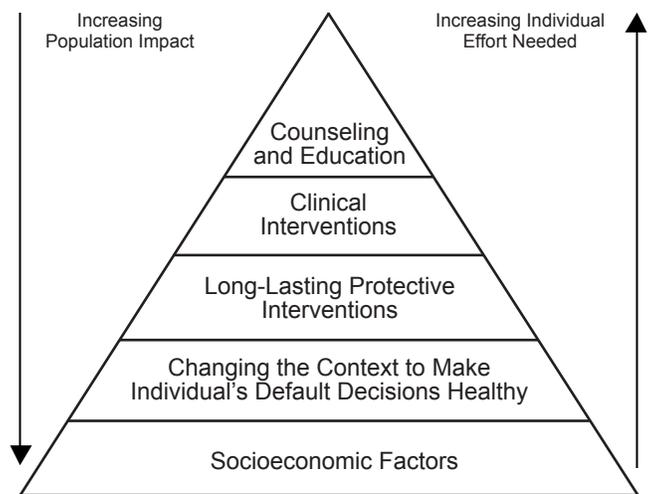
- **Socioeconomics/Demographics** – Income, education, employment, race, ethnicity, and others
- **Health Behaviors** – Seatbelt use, smoking, diet and exercise, and others
- **Clinical Care** – Access to health care, preventive screenings, immunizations, and others
- **Community and Environment** – Air quality, work-related injuries, lead poisonings, and others

**Health Outcomes** – Describe the current health of a state, city, or region – such as heart disease, motor vehicle deaths, and premature death

Improving the health of the people of New Hampshire calls for collaboration among a broad array of public health systems partners and the medical community. The Affordable Care Act provides, beyond insurance mandates, unprecedented opportunities for health prevention and promotion for individuals, worksites, and communities [2]. But just as the social determinant model describes and presents data on how where we live, work, and grow influences our health, the strategies we employ to improve our health must intervene at all levels as well.

In his “Framework for Public Health Action,” Dr. Thomas Frieden, Director of the Centers for Disease Control, presents the concept of the “Health Impact Pyramid” (see Figure 1) [3]. This approach shows that the greatest impact on the population’s health occurs when the socioeconomic factors at the bottom of the pyramid (Tier 1) are positively changed and the least impact occurs at the top from clinical interventions (Tier 4) and individual counseling and education (Tier 5). The top tiers of the pyramid, while extremely important, affect one person at a time and are subject to compliance and repeated actions on the part of the individual. Making changes in a population’s income, education, and living environment is challenging. The second tier of the pyramid

Figure 1: The Health Impact Pyramid



1. University of Wisconsin Population Health Institute. County Health Rankings 2010  
 2. Promoting Prevention through the Affordable Care Act, Koh, HK, Sebelius, KG, New England Journal of Medicine, September 7, 2010.  
 3. A Framework for Public Health Action: the Health Impact Pyramid, Frieden, TR, American Journal of Public Health, April 2010, Vol. 100, No. 4.

describes changing the context to make an individual's default decisions healthy or making the healthy choice the easy choice. Examples of this would be fluoridated water and healthy snacks in vending machines. These interventions require little or no effort on the part of the individual to make a healthy choice. The middle tier, long-lasting protective interventions, refers to one-time or infrequent interventions that afford long-term protection or prevention such as immunizations and dental sealants.

The Health Impact Pyramid provides a sound model for planning across public and private sectors at the state and community levels to improve performance on our public health priorities.

Our aim with this report, *"The New Hampshire State Health Profile 2011,"* is to provide a profile of the State and regions to set priorities to improve health status. The report highlights 38 indicators selected to best describe the health of the people in New Hampshire. The data are used to assist state and community leaders to focus their work to improve the public's health at a local level.

The key health factors identified in this report as requiring further attention are:

1. Obesity among adults and children and behaviors that may lead to it, such as lack of fruit and vegetable consumption
2. Smoking among adults and high school students
3. Alcohol and illicit drug use (including abuse of prescription drugs)
4. Seat belt and bike helmet use

The key health outcomes that are identified as targets for future efforts are:

1. Late diagnosis of breast and colorectal cancer
2. Asthma
3. Unintentional injuries
4. Youth suicide

In addition, the data tell us that people living in the northern part of the State face significant barriers to better health, which warrants attention.

We recognize that there are gaps in the report relative to mental and oral health that need further exploration. Additional analysis by public health region will be completed in the future.

This report provides a data framework to be used among public health partners to plan and implement a public health agenda for New Hampshire. Such an agenda can manifest in several ways, one being the development of a state health plan for New Hampshire, that takes into consideration our strengths and our needs, that builds on our undeniable successes and corrects our deficiencies, and that focuses on increasing the availability of opportunities to be healthy and make the right health decisions (and looks not only at negative outcomes). It's time we think about health to include how to keep it and not just how to get it back.

### Notes to the Reader

All data in this report, unless indicated otherwise, were collected or compiled by the New Hampshire Department of Health and Human Services (DHHS), Division of Public Health Services (DPHS), Bureau of Public Health Statistics and Informatics (BPHSI), Health Statistics and Data Management Section (HSDM).

Data are specific to New Hampshire unless indicated otherwise. All charts, graphs, tables, and maps are called "Figures." Following the figure, information is given on the source of the data. Where applicable, differences in health indicators (for instance, between New Hampshire and the US) are referred to as "significant" in the statistical sense. A statistically significant difference is one which would occur with less than five percent probability in the absence of a true difference. Differences computed from small samples or populations are less likely to be significant than those computed from larger numbers. The word "significant" is used only with this technical meaning and does not speak to the impact of a health condition on an individual, family, or community.

Every effort was made in this report to use plain language, but technical language is necessary in certain cases. Terms such as "age-adjusted," "incidence," "confidence intervals," "premature mortality," "Healthy People 2010," "ICD," and "life expectancy" are examples of these kinds of terms. The most commonly used terms in this report are

explained below. Others are explained where they first appear.

“Incidence” of a health condition refers to the number of new cases revealed or diagnosed during a specified time period. “Prevalence” refers to the number of cases existing at a specific time. “Mortality” refers to a health event resulting in death. Incidence, prevalence, and mortality are presented as rates: the number of events per 1,000, 10,000, or 100,000 population.

Many of the rates presented are “age-adjusted,” that is, the given rates are those that would occur if the population of New Hampshire had the same age distribution as that of the US in the 2000 Census (the most recent available at this writing). Age adjustment allows for comparison between populations with different age distributions.

We use the following mutually exclusive racial categories: White, Black, American Indian, Asian, and Hispanic. The Hispanic category includes persons of Hispanic ethnicity regardless of their race. The full expression of these categories is White Non-Hispanic, Black Non-Hispanic, American Indian Non-Hispanic, Asian Non-Hispanic, and Hispanic.

*Healthy People 2010*, a program of the Centers for Disease Control and Prevention, is a statement of national health objectives designed to identify the most significant preventable threats to health and to establish national goals to reduce these threats. *Healthy People 2020* had not been launched when preparation of this report began.

Geographic data are primarily presented by public health regions. The DPHS has aligned the state’s 234 municipalities into 15 public health regions for the purposes of public health planning and delivery of select public health services. A list of towns assigned to each public health region can be found in Appendix 1 on page 91. While the boundaries of many of these new public health regions are similar to those of New Hampshire counties, many cross county boundaries. For example, the North Country public health region includes all of Coos County and several towns from northern Grafton County.

The “At-A-Glance” section of this report (page 12) allows quick comparison between New Hampshire

and other states. The state with the “healthiest” value was ranked #1 for the participating indicator. This section also allows us to see trends within New Hampshire over time. “Thumb” symbols are used to identify only trends that are statistically significant. A “thumbs up” graphic is used for a favorable trend while a “thumbs down” is used for an unfavorable trend. Trends were determined by comparing the earliest year (2000 where available) with the latest (2009 where available).

Rankings do not take into account sampling error or other sources of statistical variation. Rankings are based on data from New Hampshire surveys and databases, America’s Health Rankings, or Trust for America’s Health (see references in At-A-Glance).

The following abbreviations are used in this report:

**BRFSS:** Behavioral Risk Factor Surveillance System, a telephone survey of adults 18 years of age and older. The BRFSS does not include adults residing in group quarters or institutions (such as nursing homes, hospitals, or prisons) or adults without landline telephone service. BRFSS is a state-based system of telephone health surveys supported by the CDC and administered in all states, the District of Columbia, and three U.S. territories. New Hampshire BRFSS estimates are based on data weighted to reflect the characteristics of the State’s adult population. National estimates were obtained from the national BRFSS website (<http://www.cdc.gov/BRFSS>). These estimates are the medians of the individual estimates from the 50 states and the District of Columbia. Because these estimates were not constructed by pooling all national BRFSS data, it is not possible to assess statistically significant differences between New Hampshire and the US. All such comparisons are informal.

**CDC:** Centers for Disease Control and Prevention, an agency of the US Department of Health and Human Services.

**DES:** New Hampshire Department of Environmental Services.

**DHHS:** New Hampshire Department of Health and Human Services.

**DPHS:** New Hampshire Division of Public Health

Services, an agency of DHHS.

**DVRA:** Division of Vital Records Administration, a division of the New Hampshire Department of State. DVRA is responsible for recording births, deaths, marriages, and divorces.

**NCHS:** National Center for Health Statistics, part of CDC and the principal health statistics agency in the US.

**SEER:** Surveillance, Epidemiology and End Results Program, the main source for cancer statistics in the US. SEER collects information on incidence, prevalence, and survival from specific geographic areas representing 28 percent of the US population and compiles reports on all of these, plus cancer mortality for the entire country.

**WISQARS:** Web-based Injury Statistics Query and Reporting System, an interactive database system operated by the CDC that provides customized reports of data on fatal injuries, non-fatal injuries, and violent deaths.

**YRBS:** Youth Risk Behavior Survey, a school-based survey of students in grades nine through twelve.

## Acknowledgments

Overall responsibility for planning and coordinating the *New Hampshire State Health Profile* rested with the Bureau of Public Health Statistics and Informatics (BPHSI) under the direction of Brook Dupee, Bureau Chief. Strategic direction was provided by José Montero and Joan Ascheim. Sharon Alroy-Preis, State Epidemiologist, was responsible for working with all DPHS Program Managers to write the indicators and present the data.

Day-to-day coordination of the report was done by Karla Armenti, and data analysis was done by staff within the Bureau and other DPHS Program epidemiologists.

Creative direction and design were executed by Laura Holmes with graphic support by Christin D'Ovidio. Graphs and charts were prepared by Michael Laviolette. Maps were prepared by Tylor Young. Publication management was done by Tina Piaseczny.

Each indicator in the *New Hampshire State Health Profile* was written by content experts within the New Hampshire Department of Health and Human

Services. These individuals assisted in analyzing the data and writing the narrative:

### **DHHS Division of Public Health Services**

#### **Bureau of Public Health Statistics and Informatics (Brook Dupee, Bureau Chief)**

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**DHHS Office of Minority Health:** Trinidad Tellez (Director) and Rebecca Sky, Foundation for Healthy Communities

# New Hampshire State Health Report

## KEY INDICATORS AT-A-GLANCE

### AT-A-GLANCE

Key Indicators	NH Trend	NH Rank	Other State Ranks #1	Other State Ranks #50
<b>Demographics</b>				
Education (percent 25 or older with high school diploma or GED) <sup>1</sup>	2000 87.4% 2008 90.9% 	4	<u>Wyoming</u> 91.7%	<u>Texas</u> 79.6%
All persons in poverty (percent) <sup>1</sup>	2000 6.5% 2009 8.5% 	1	<u>New Hampshire</u> 8.5%	<u>Mississippi</u> 21.9%
Children in poverty (percent children) <sup>1</sup>	2005 9.4% 2009 10.8%	1	<u>New Hampshire</u> 10.8%	<u>Mississippi</u> 31.0%
Unemployment (percent adult, seasonally adjusted) <sup>2</sup>	9/2000 2.6% 9/2010 5.5%	4	<u>North Dakota</u> 3.7%	<u>Nevada</u> 14.4%
<b>Health Behaviors</b>				
Current smoking, (percent of adults) <sup>3</sup>	2000 25.4% 2009 16.0% 	9	<u>Utah</u> 9.8%	<u>Kentucky</u> 25.6%
Youth current smoking (percent) <sup>4</sup>	2003 19.1% 2009 20.8%	32	<u>Utah</u> 8.5%	<u>Kentucky</u> 26.1%
Fruits and vegetables five or more times per day, (percent of adults) <sup>3</sup>	2000 26.2% 2009 27.7%	4	<u>Vermont</u> 29.3%	<u>Oklahoma</u> 14.6%
Childhood obesity, (percent children ages 10 to 17) <sup>5</sup>	2003 12.9% 2007 12.8%	13	<u>Oregon</u> 9.6%	<u>Mississippi</u> 21.9%
Obesity, high school youth (percent high school students) <sup>4</sup>	2003 9.9% 2009 12.4%	NA	NA	NA
Obese (percent of adults) <sup>3</sup>	2000 18.1% 2009 26.4% 	21	<u>Colorado</u> 19.0%	<u>Mississippi</u> 35.4%
Overweight (percent of adults) <sup>3</sup>	2000 36.5% 2009 36.2%	28	<u>Louisiana</u> 33.7%	<u>Iowa</u> 38.7%
Moderate or vigorous physical activity (percent of adults) <sup>3</sup>	2001 50.7% 2009 53.2%	12	<u>Alaska</u> 60.7%	<u>West Virginia</u> 35.2%
Physical activity, high school youth (percent high school students) <sup>4</sup>	2005 57.2% 2009 54.7%	NA	NA	NA
Heavy drinking (percent of adults) <sup>2</sup>	2001 6.3% 2009 5.5%	30	<u>Tennessee</u> 1.9%	<u>Vermont</u> 8.1%
Binge drinking (percent of adults) <sup>3</sup>	2006 14.9% 2009 15.8%	26	<u>Tennessee</u> 6.8%	<u>Wisconsin</u> 23.9%
Drank alcohol in past 30 days (percent high school students) <sup>4</sup>	2003 47.1% 2009 39.3%	NA	NA	NA
Used marijuana in past 30 days (percent high school students) <sup>4</sup>	2003 30.6% 2009 25.6%	NA	NA	NA

Rankings in "At-A-Glance" were determined by listing the value for each (participating) state indicator in order. The state with the "healthiest" value was ranked 1. Rankings do not take into account sampling error or other sources of statistical variation. "Thumb" symbols are used to identify only trends that are statistically significant. A "thumbs up" graphic is used for a favorable trend while a "thumbs down" is used for an unfavorable trend. Trends were determined by comparing the earliest year (2000 where available) to the latest (2009 where available). No comparisons were done for any years between 2000 and 2009. Rankings are based on data that came from New Hampshire surveys and databases, America's Health Rankings or Trust for America's Health (see references in At-A-Glance).

# New Hampshire State Health Report

## KEY INDICATORS AT-A-GLANCE

Key Indicators	NH Trend		NH Rank	Other State Ranks	
	2000	2006-8		#1	#50
Communicable diseases per 100,000 population, 3 year average of AIDS, tuberculosis and Hepatitis (A and B) <sup>6</sup>	2000 8.9	2006-8 7.6	10	North Dakota 2.4	New York 35.8
Teen birth rate per 1,000 women aged 15 to 19 <sup>5</sup>	2000 23.3	2008 19.8 	1	New Hampshire 19.8	Mississippi 65.7
Always use seatbelt (percent of adults) <sup>3</sup>	2002 63.8%	2008 66.4%	48	Oregon 93.7%	North Dakota 59.2%
Rarely or never wore a seat belt (percent high school students) <sup>4</sup>	2003 12.6%	2009 12.9%	NA	NA	NA
Rarely or never wore a bicycle helmet (percent high school students) <sup>4</sup>	2007 66.2%	2009 62.4%	NA	NA	NA
No health insurance (percent of adults) <sup>3</sup>	2000 9.0%	2009 11.3%	12	Massachusetts 5.3%	Texas 25.2%
Unable to see a doctor when needed due to cost (percent of adults) <sup>3</sup>	2000 9.4%	2009 11.0%	10	North Dakota 6.2%	Texas 19.7%
Have primary care provider (percent of adults) <sup>3</sup>	2001 85.8%	2009 89.4% 	1	New Hampshire 89.4%	Alaska 67.4%
Dental visit in past year (percent of adults) <sup>3</sup>	2006 75.9%	2008 75.7%	4	Connecticut 78.6%	Oklahoma 56.7%
Flu shot in past year (percent adults age 65 or older) <sup>3</sup>	2001 69.4%	2009 72.0%	16	Minnesota 76.8%	Alaska 62.1%
Acute Ambulatory Care Sensitive Conditions (per 100,000 population)	2000 626.4	2007 681.1 	NA	NA	NA
Chronic Ambulatory Care Sensitive Conditions (per 100,000 population)	2000 641.2	2007 602.9 	NA	NA	NA
<b>Community and Environment</b>					
Air pollution particulate days (weighted average days per population) <sup>6</sup>	NA	NA	14	Hawaii 4.8	Pennsylvania 13.9
Childhood lead poisoning (percent of those tested)	2003 2.9%	2009 0.8%	NA	NA	NA
Occupational fatalities (deaths per 100,000 workers) <sup>6</sup>	2000 5.2	2006-8 3.8	9	Massachusetts 3.1	Alaska 13.0

AT-A-GLANCE

Rankings in "At-A-Glance" were determined by listing the value for each (participating) state indicator in order. The state with the "healthiest" value was ranked 1. Rankings do not take into account sampling error or other sources of statistical variation. "Thumb" symbols are used to identify only trends that are statistically significant. A "thumbs up" graphic is used for a favorable trend while a "thumbs down" is used for an unfavorable trend. Trends were determined by comparing the earliest year (2000 where available) to the latest (2009 where available). No comparisons were done for any years between 2000 and 2009. Rankings are based on data that came from New Hampshire surveys and databases, America's Health Rankings or Trust for America's Health (see references in At-A-Glance).

# New Hampshire State Health Report

## KEY INDICATORS AT-A-GLANCE

### AT-A-GLANCE

Key Indicators	NH Trend	NH Rank	Other State Ranks #1	Other State Ranks #50
<b>Health Outcomes</b>				
Premature death (years of potential life lost to age 75) (per 100,000 population) <sup>6</sup>	<u>2000</u> 56.4 2006 57.5	2	<u>Minnesota</u> 56.0	<u>Mississippi</u> 11.0
Low Birth Weight per 1,000 births <sup>7,8</sup>	<u>2000</u> 6.3 2007 6.3	5	<u>Alaska</u> 5.7	<u>Mississippi</u> 12.3
Infant mortality (per 1,000 live births) <sup>6</sup>	<u>2000-1</u> 4.8 2005-6 5.7	9	<u>Utah</u> 4.8	<u>Mississippi</u> 11.0
Suicide deaths (per 100,000 population)	<u>2000</u> 11.3 2007 10.8	NA	NA	NA
Inpatient discharges for mental health (per 100,000 population)	<u>2000</u> 5.0 2007 4.5	NA	NA	NA
Emergency dept. discharges for mental health (per 100,000 population)	<u>2000</u> 12.7 2007 14.3	NA	NA	NA
Specialty hospital discharges for mental health (per 100,000 population)	<u>2003</u> 3.1 2007 3.3	NA	NA	NA
Substance abuse related inpatient discharges (per 100,000 population)	<u>2000</u> 310.1 2007 468.8	NA	NA	NA
Substance abuse related emergency dept. discharges (per 100,000 population)	<u>2001</u> 481.0 2007 764.3	NA	NA	NA
Activities limited due to health (percent reporting 14 or more day when limited) <sup>3</sup>	<u>2000</u> 4.4% 2009 5.6%	24	<u>South Dakota</u> 3.9%	<u>Kentucky</u> 10.4%
New cancer cases, all types (incidence) (age adjusted, per 100,000 population) <sup>9</sup>	<u>2000</u> 499.3 2006 493.1	39	<u>New Mexico</u> 394.1	<u>Maine</u> 536.1
Cancer deaths (age adjusted, per 100,000 population) <sup>9</sup>	<u>2000</u> 205.8 2006 183.0	25	<u>Utah</u> 136.0	<u>Kentucky</u> 211.8
Mammogram in past 2 years (percent of women 40 or older) <sup>3</sup>	<u>2000</u> 81.4% 2008 83.1%	4	<u>Massachusetts</u> 84.9%	<u>Wyoming</u> 67.2%
Colonoscopy or Sigmoidoscopy in past 5 years (percent of adults 50 or older) <sup>3</sup>	<u>2000</u> 43.9% 2008 61.1%	4	<u>Delaware</u> 64.5%	<u>Nevada</u> 44.0%
<b>Access to Care</b>				
Pap test in past 3 years (percent of women 18 or older) <sup>3</sup>	<u>2000</u> 90.0% 2008 87.1%	5	<u>Georgia</u> 87.6%	<u>Utah</u> 74.2%
Ever told had diabetes (percent of adults) <sup>3</sup>	<u>2004</u> 6.5% 2009 7.1%	10	<u>Colorado</u> 5.8%	<u>West Virginia</u> 12.4%

Rankings in "At-A-Glance" were determined by listing the value for each (participating) state indicator in order. The state with the "healthiest" value was ranked 1. Rankings do not take into account sampling error or other sources of statistical variation. "Thumb" symbols are used to identify only trends that are statistically significant. A "thumbs up" graphic is used for a favorable trend while a "thumbs down" is used for an unfavorable trend. Trends were determined by comparing the earliest year (2000 where available) to the latest (2009 where available). No comparisons were done for any years between 2000 and 2009. Rankings are based on data that came from New Hampshire surveys and databases, America's Health Rankings or Trust for America's Health (see references in At-A-Glance).

# New Hampshire State Health Report

## KEY INDICATORS AT-A-GLANCE

Key Indicators	NH Trend	NH Rank	Other State Ranks #1	Other State Ranks #50
Ever told blood pressure was high (percent of adults) <sup>3</sup>	2000 22.8% 2009 28.9% 	24	<u>Minnesota</u> 21.6%	<u>West Virginia</u> 37.6%
Cholesterol tested in past 5 years (percent of adults) <sup>3</sup>	2000 77.2% 2009 82.8% 	4	<u>Massachusetts</u> 84.0%	<u>Utah</u> 67.5%
Current asthma (percent of adults) <sup>3</sup>	2000 8.3% 2009 10.3%	46	<u>Louisiana</u> 6.3%	<u>Oregon</u> 11.1%
Emergency dept. discharges for unintentional injuries (per 1,000 population)	2003 114.2 2007 109.4 	NA	NA	NA
3rd grade dental sealants (percent high school students) <sup>9</sup>	2001 45.9% 2009 60.4% 	NA	NA	NA

Note: NH BRFSS survey survey results for 2005 through 2009 may differ slightly from results available elsewhere due to an adjustment in data weights. For indicators with no reference number, the data are from the Division of Public Health Services, Health Statistics and Data Management Section.

#### References:

1. American Community Survey, American Fact Finder, Bureau of Census, [http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en)
2. US Bureau of Labor Statistics, [www.bls.gov/](http://www.bls.gov/)
3. Behavioral Risk Factor Surveillance System, [www.cdc.gov/brfss](http://www.cdc.gov/brfss) or from NH Department of Health and Human Services, Bureau of Public Health Surveillance and Informatics, [www.dhhs.nh.gov/dphs/hsdm](http://www.dhhs.nh.gov/dphs/hsdm)
4. Youth Risk Behavior Survey Online, <http://apps.nccd.cdc.gov/youthonline/App/Default.aspx>
5. National Survey of Children's Health, [www.nschdata.org/Content/Default.aspx](http://www.nschdata.org/Content/Default.aspx)
6. America's Health Rankings, [www.americashealthrankings.org/](http://www.americashealthrankings.org/)
7. CDC, National Center for Health Statistics, [www.cdc.gov/nchs](http://www.cdc.gov/nchs)
8. CDC, National Program of Cancer Registries, <http://apps.nccd.cdc.gov/uscs/>
9. New Hampshire 3rd Grade Oral Health Survey, [www.dhhs.nh.gov/dphs/bchs/rhpc/oral/publications.htm](http://www.dhhs.nh.gov/dphs/bchs/rhpc/oral/publications.htm)

Rankings in "At-A-Glance" were determined by listing the value for each (participating) state indicator in order. The state with the "healthiest" value was ranked 1. Rankings do not take into account sampling error or other sources of statistical variation. "Thumb" symbols are used to identify only trends that are statistically significant. A "thumbs up" graphic is used for a favorable trend while a "thumbs down" is used for an unfavorable trend. Trends were determined by comparing the earliest year (2000 where available) to the latest (2009 where available). No comparisons were done for any years between 2000 and 2009. Rankings are based on data that came from New Hampshire surveys and databases, America's Health Rankings or Trust for America's Health (see references in At-A-Glance).

AT-A-GLANCE

# Demographics

## Geography and Population

New Hampshire's population is growing and becoming older. These demographic changes have important implications for the future health of New Hampshire residents, for the development of our medical and public health systems, and for our natural environments.

*Approximately 38% of NH's population lives in rural areas covering 84% of NH's land area.*

### Rural New Hampshire

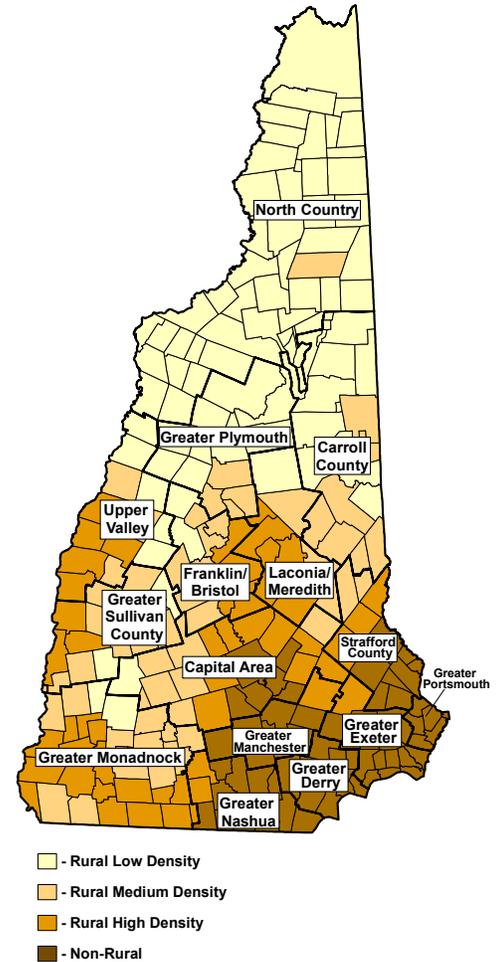
The New Hampshire Rural Health and Primary Care Section (RHPC) estimated that in 2000, approximately 38 percent of New Hampshire's population lived in rural areas that covered 84 percent of the State's land area [1]. The map in Figure 1 shows how RHPC's classification of towns as rural applies to New Hampshire's public health regions. Northern regions are the most rural while southeastern regions are the least rural.

Residents of rural areas face unique challenges in maintaining and improving health. These include physical distances between people and resources and health issues that come with an older population. Rural residents also must cope with reduced access to care arising from less insurance coverage (due to unemployment or employment in small industries) and provider shortages.

### New Hampshire Population

According to Census estimates, as of July 1, 2009, the population of New Hampshire was 1,324,575, an increase of 7.2 percent from the Census 2000 population of 1,235,786. Coos County was the only New Hampshire county with a population decrease between 2000 and 2009 (Figure 2) [2, 3]. The largest New Hampshire cities are Manchester (109,263) and Nashua (87,556) [4]. Of New Hampshire's 259 towns, 22

Figure 1: New Hampshire Rural Town Definition by Public Health Region



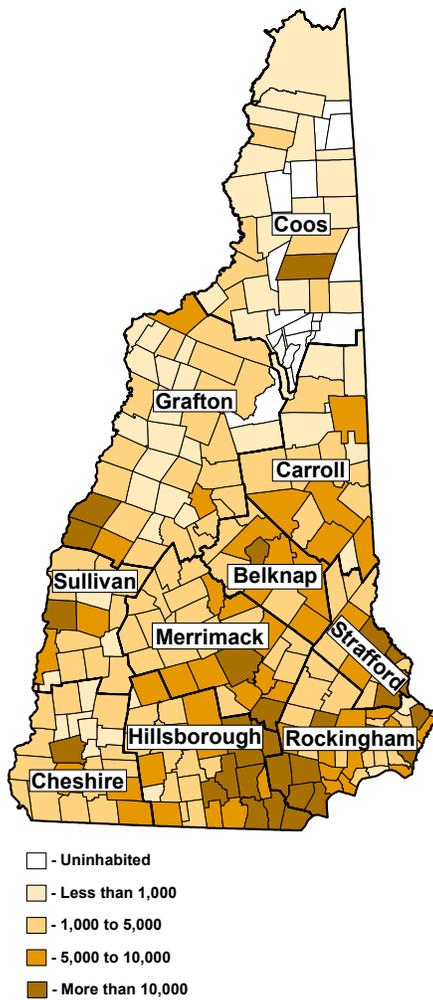
Source: NH Bureau of Rural Health and Primary Care, 2004

**For information about the Rural Health and Primary Care Section visit [www.dhhs.nh.gov/dphs/bchs/rhpc/rural.htm](http://www.dhhs.nh.gov/dphs/bchs/rhpc/rural.htm).**

Figure 2: Population of New Hampshire Counties, 2000, 2009, and 2030

County	Population 2000	July 1, 2009 Estimate	Percent Change 2000-2009	Projected Population 2030	Projected Percent Increase 2000-2030	Percent Population 2000	Percent Population 2030
Belknap	56,325	61,358	8.9	71,876	27.6	4.6	4.8
Carroll	43,666	47,860	9.6	59,796	36.9	3.5	4.0
Cheshire	73,825	77,045	4.4	86,825	17.6	6.0	5.8
Coos	33,111	31,487	-4.9	34,579	4.4	2.7	2.3
Grafton	81,743	86,291	5.6	96,942	18.6	6.6	6.4
Hillsborough	380,841	405,906	6.6	457,379	20.1	30.8	30.3
Merrimack	136,225	149,071	9.4	175,160	28.6	11.0	11.6
Rockingham	277,359	299,276	7.9	339,448	22.4	22.4	22.5
Strafford	112,233	123,589	10.1	137,863	22.8	9.1	9.1
Sullivan	40,458	42,692	5.5	50,132	23.9	3.3	3.3
<b>New Hampshire</b>	<b>1,235,786</b>	<b>1,324,575</b>	<b>7.2</b>	<b>1,510,000</b>	<b>22.2</b>	<b>100</b>	<b>100</b>

**Figure 3: New Hampshire Towns by Population, 2009 (estimated)**



Source: Nielsen Claritas Company

*By 2030, 21% of NH residents will be aged 65 years or older, up from 13% in 2000.*

**For information about the Bureau of Elderly and Adult Services (BEAS) visit [www.dhhs.nh.gov/dcbcs/beas/index.htm](http://www.dhhs.nh.gov/dcbcs/beas/index.htm).**

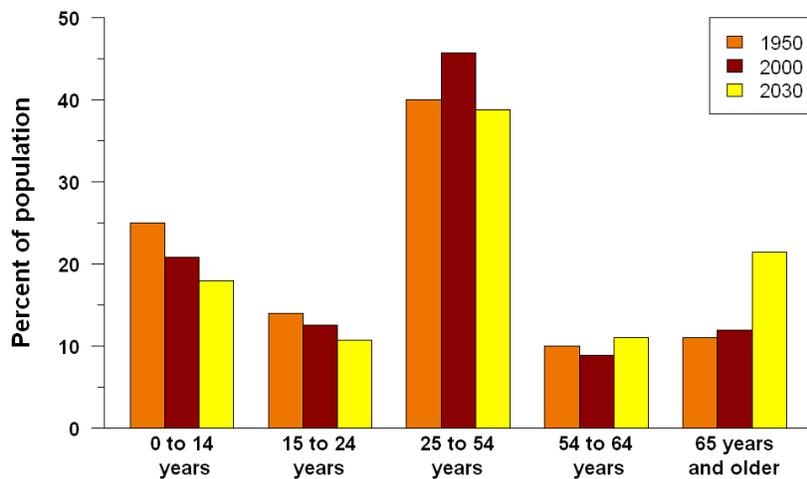
are uninhabited and only 29 have a population of 10,000 or more [5] (Figure 3).

Between 2000 and 2030, the largest population percentage growth (37 percent) is projected for Carroll County, with Coos County growing by less than 5 percent [6]. Despite the variation in growth rates, each county's share of the State population will remain stable.

### Aging

New Hampshire's population continues to grow older, a trend that will accelerate over the next 20 years. Persons aged 65 and older made up 10.7 percent of the State's population in 1950 and 12 percent in 2000, a number projected to grow to 21 percent of the population by 2030 [3, 6]. The percentage of children and young adults has correspondingly decreased (Figure 4). New Hampshire will move from ranking 37 to 17 in terms of elderly population by 2030 [7].

**Figure 4: Projected Percentage of NH Residents by Age Group and Year**



Source: U.S. Census Bureau (1950 Census, 2000 Census, Interim Population Projections)

The aging of New Hampshire's population will have important consequences for both individual health and public health in the State. An increased elderly population will require resources to treat health conditions specific to this population, including chronic diseases such as diabetes and acute conditions such as falls. Demand for nursing home capacity and congregate care facilities will greatly increase in the near future. The BRFSS survey estimated that in 2009 about 11,000 New Hampshire residents over age 65 lived in group quarters. The projected increase of 60 percent in the elderly population between now and 2030 would require capacity for 18,000 residents.

The need for adult day care programs and support systems will also grow. About 239,000 New Hampshire adults provide care to a relative or friend with a health problem, long-term illness, or disability, according to the 2009 BRFSS survey. While not all recipients of care are elderly, the need for care will increase as the population ages. Accessible transportation, housing, nutrition, and social service support will also be needed.

## Race, Ethnicity, and Nativity

New Hampshire's population is slowly becoming more diverse. In 2009 the State population was 95.3 percent White, down slightly from 96.0 percent in 2000. About 25,000 Asians, the largest Non-White racial group at 2 percent of the population, live in New Hampshire. The Black population doubled between 2000 and 2009 to about 18,000 (1.4 percent). Almost 37,000 persons of Hispanic origin make up 2.8 percent, an increase of 80 percent since 2000 (Figure 5) [7].

**Figure 5:** New Hampshire Population by Race and Hispanic Ethnicity, 2000 and 2009

Race alone or in combination with one or more other races	2000		2009	
	Population	Percent	Population	Percent
White	1,186,851	96.0	1,261,735	95.3
Black or African American	9,035	0.7	18,114	1.4
American Indian and Alaska Native	2,964	0.2	3,848	0.3
Asian	15,931	1.3	25,931	2.0
Native Hawaiian and Other Pacific Islander	371	0.0	538	0.0
Other race or more than one race	20,634	1.7	14,409	1.1
<b>Hispanic origin</b>				
Hispanic or Latino (of any race)	20,489	1.7	36,867	2.8
Not Hispanic or Latino Total	1,215,297	98.3	1,287,708	97.2

Source: U.S. Census Bureau (2000 Census, Interim Population Projections)

Racial and ethnic diversity vary among the different counties. Hillsborough County (which includes the cities of Manchester and Nashua) has the highest population diversity in the state with 89 percent of the residents being White Non-Hispanic compared with 97 percent in Carroll and Coos counties [9].

Between 2000 and 2009, the foreign born population of New Hampshire increased by 26 percent from 54,154 [2] to an estimated 68,462 [3]. Foreign born persons (legal immigrants, undocumented immigrants, and temporary residents) now make up about 5 percent of the New Hampshire population. More than 50 percent of New Hampshire's foreign born live in Hillsborough County [10]. As of 2009, 11 percent of the population of Manchester (about 12,000) and 12 percent of the population of Nashua (about 10,500) are foreign born [3].

Increased diversity brings challenges, notably language barriers. Approximately 32,000 New Hampshire residents (2.6 percent) spoke English "less than very well" in 2009 [3]. The most common languages for these residents were Spanish, French, and Chinese [3], among 136 non-English languages spoken in New Hampshire [11]. According to the most recent data, Manchester schools classified more than 1,900 students as English Language Learners, Nashua schools approximately 900, and Concord schools approximately 300. Growth in English proficiency programs has been substantial in all three cities [11].

National data indicate that many measures of mortality, disease incidence, and access to care differ significantly by race and/or ethnicity. For example, Black Non-Hispanics have 30 percent higher

For more information about the Office of Minority Health and Refugee Affairs visit [www.dhhs.nh.gov/omh/index.htm](http://www.dhhs.nh.gov/omh/index.htm).

death rates from cardiovascular disease and twice the diabetes rates, compared with White Non-Hispanics [12]. In New Hampshire in 2009, 83 percent of White mothers entered prenatal care in the first trimester compared with only 66 percent of Black mothers.

Health disparities arise from complex and poorly understood interactions between socioeconomic, psychosocial, behavioral, genetic, and health care-related factors. These factors will need to be taken into account when developing public health interventions for diverse populations.

*Significant disparities exist across NH in education and income.*

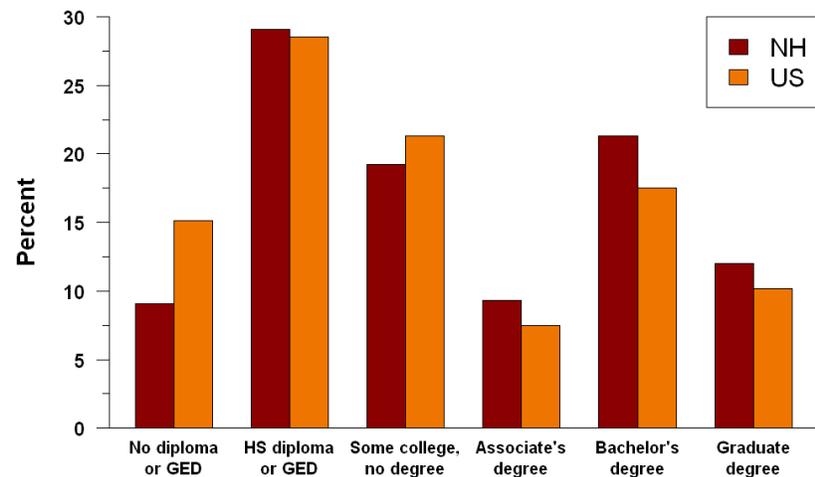
**Education and Income**

Education and income are closely linked to health status. Persons with less education and lower income are more likely to smoke and to be diagnosed with chronic diseases such as diabetes.

**Education**

New Hampshire residents have in general higher education attainment compared with the nation. In 2008, only 8.8 percent of New Hampshire adult residents (age 25 or older) had neither a high school diploma nor a GED, compared with 14.8 percent in the US (Figure 6) [3].

**Figure 6:** Educational Attainment, Population Aged 25 Years or Older, 2008



Sources: NH BRFSS, CDC

Educational attainment is not uniformly distributed across the State (Figure 7). The percentage of residents who either completed high school or obtained a GED ranged from 84 percentage in Coos County to 93 percent in Rockingham County. The percent having at least a bachelor’s degree ranged from 16.5 percent in Coos County to 36 percent in Rockingham County [9].

**Income and Poverty Status**

New Hampshire, like the rest of the country, was profoundly impacted by the Great Recession and continues to feel the after effects. New Hampshire still fares well economically compared with other states, with a per capita income (\$43,623) ranking eleventh highest among the 50 states and the District of Columbia [13]. In 2009, approximately 8.5 percent of the New Hampshire population was below 100

percent of the federal poverty level [3], compared with 13.2 percent nationwide. Moreover, 10.8 percent of New Hampshire children, compared with 18.2 percent nationally, were living below the poverty level [3].

**Figure 7:** Educational Attainment by County, Population Aged 25 Years or Older, 2008

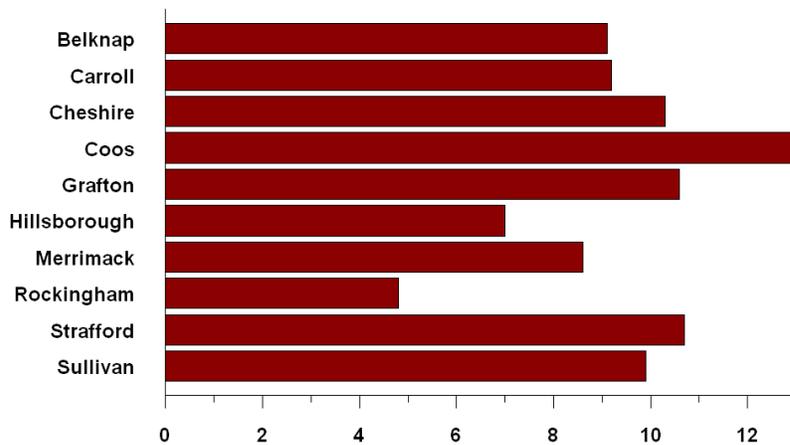
County	Percent high school graduate or higher	Percent bachelor's degree or higher
Belknap	89.0	25.0
Carroll	90.2	28.9
Cheshire	88.6	29.7
Coos	84.4	16.5
Grafton	90.4	36.1
Hillsborough	90.5	34.5
Merrimack	90.3	32.2
Rockingham	93.1	36.4
Strafford	88.3	29.0
Sullivan	88.8	25.9

Source: NH BRFSS

Despite the favorable overall levels of poverty in the State, many segments of the population remain disproportionately affected. The most affected are women, Blacks, Hispanics, and those with less than a high school education (Figure 8) [3].

The percentage of New Hampshire residents in poverty also varies across different regions of the State, with Coos County having the highest proportion and Rockingham County the lowest (Figure 9) [14].

**Figure 9:** Percentage of NH Residents Living in Poverty, by County, 2008



Source: US Census Bureau, Small Area Income and Poverty Estimates

Despite the impact of the Great Recession, the State's unemployment rate continues to be low compared with the US and the rest of New England. When the national recession began in December 2007, New Hampshire's seasonally adjusted unemployment rate was 3.4 percent. It peaked at 7.1 percent in February 2010 before receding to 5.8 percent in July 2010 (representing approximately 42,770 unem-

**Figure 8:** Percentage of Population Below Federal Poverty Level, 2009

Population	Percent below 100% poverty level
New Hampshire	8.5
Male	7.8
Female	9.2
Under 18 years	10.8
White	7.8
Black or African-American	35.5
Asian	14.3
Other or multiple races	18.6
Hispanic or Latino origin (of any race)	21.1
White alone, not Hispanic or Latino	7.6
Married-couple family	2.9
Female-headed households	24.3
Other living arrangements	18.0
Less than high school graduate	16.5
High school graduate or equivalent	8.6
Some college or Associate's degree	7.5
Bachelor's degree or higher	2.5
Native citizen	8.2
Naturalized citizen	8.3
Foreign born	14.2
With any disability	15.9
No disability	7.5

Source: U.S. Census Bureau, American Community Survey

ployed residents) [15,16]. Unemployment in New Hampshire varies across counties, with the highest rate in Coos County (6.5 percent) and the lowest in Carroll and Grafton Counties (4.6 percent) [15].

Economic distress creates more demand for public services. Due to increased unemployment, Medicaid enrollment increased by 8.3 percent to 126,300 between State fiscal years 2009 and 2010. Although employment projections have recently improved somewhat, Medicaid enrollment is still projected to increase 5.4 percent to 133,200 in fiscal year 2011 [17].

#### References

1. New Hampshire Rural Health Report 2004, New Hampshire Bureau of Rural Health and Primary Care, [www.dhhs.nh.gov/dphs/bchs/rhpc/publications.htm](http://www.dhhs.nh.gov/dphs/bchs/rhpc/publications.htm)
2. US Census Bureau, Population Estimates Program, 2009 Population Estimates, [www.census.gov/popest/estimates.html](http://www.census.gov/popest/estimates.html)
3. US Census Bureau, 2000 Decennial Census, <http://factfinder.census.gov>
4. US Census Bureau, American Community Survey, 2009 Single Year Estimates, <http://factfinder.census.gov>
5. Nielsen Company, Claritas Division, 2009 Population Estimates.
6. Interim Population Projections for New Hampshire and Counties 2010 to 2030, New Hampshire Office of Energy and Planning, August 2010. [www.nh.gov/oep/programs/DataCenter/Population/documents/projections\\_interim-state\\_and\\_county.pdf](http://www.nh.gov/oep/programs/DataCenter/Population/documents/projections_interim-state_and_county.pdf)
7. US Census Bureau, U.S. Population Projections, [www.census.gov/population/www/projections/index.html](http://www.census.gov/population/www/projections/index.html)
8. US Census Bureau, Population Estimates, [www.census.gov/popest/states/asrh](http://www.census.gov/popest/states/asrh)
9. US Census Bureau, American Community Survey, 2006-2008 Three-Year Estimates, <http://factfinder.census.gov>
10. The Carsey Institute, University of New Hampshire. Profile of New Hampshire's Foreign-born Population, New England Issue Brief No. 8, Spring 2008. [www.carseyinstitute.unh.edu/publications/IB\\_NH\\_Foreign-Born\\_08.pdf](http://www.carseyinstitute.unh.edu/publications/IB_NH_Foreign-Born_08.pdf)
11. New Hampshire Department of Education, Title III, Language Instruction for Limited English Proficient Students, K-12, [www.education.nh.gov/instruction/integrated/title\\_iii.htm](http://www.education.nh.gov/instruction/integrated/title_iii.htm)
12. American Heart Association Statistical Fact Sheets: Populations [www.americanheart.org/presenter.jhtml?identifier=2011](http://www.americanheart.org/presenter.jhtml?identifier=2011)
13. US Census Bureau, State Rankings, Statistical Abstract of the US, [www.census.gov/compendia/statab/rankings.html](http://www.census.gov/compendia/statab/rankings.html). [www.census.gov/compendia/statab/2010/ranks/rank29.html](http://www.census.gov/compendia/statab/2010/ranks/rank29.html)
14. Census Bureau, Small Area Income and Poverty Estimates. [www.census.gov/cgi-bin/saippe/saippe.cgi](http://www.census.gov/cgi-bin/saippe/saippe.cgi)
15. Road to Recovery, New Hampshire's Economy 2010, New Hampshire Employment Security, Economic & Labor Market Information Bureau, June 2010. [www.nh.gov/nhes/elmi/econanalys.htm#EAR](http://www.nh.gov/nhes/elmi/econanalys.htm#EAR)
16. New Hampshire Economic Statistics, September 2010, New Hampshire Employment Security, Economic and Labor Market Information Bureau, [www.nh.gov/nhes/elmi/unempnr.htm](http://www.nh.gov/nhes/elmi/unempnr.htm)
17. New Hampshire Medicaid Program Enrollment Forecast: SFY 2011-2013 Update. University of New Hampshire Whittemore School of Business and Economics, August 2010. [www.dhhs.state.nh.us/ombp/documents/forecast.pdf](http://www.dhhs.state.nh.us/ombp/documents/forecast.pdf)

# Health Behaviors

## Smoking and Tobacco Use

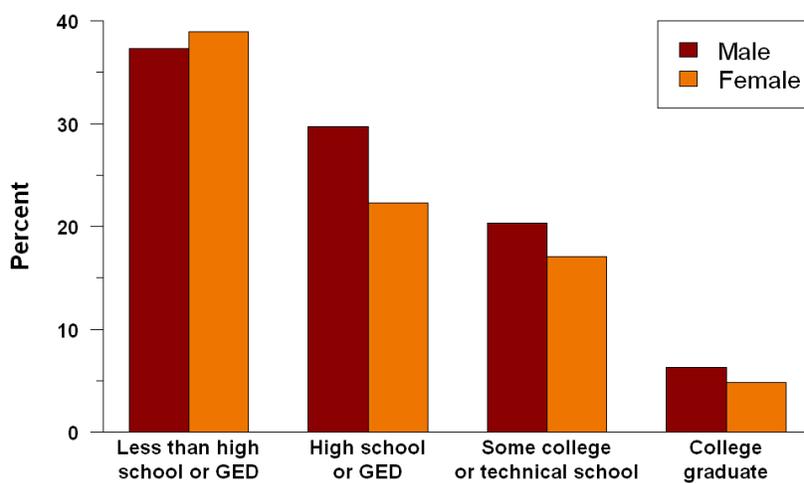
Each year an estimated 1,700 people die prematurely from smoking-related illnesses in New Hampshire. An additional 200 die each year from exposure to secondhand smoke. Despite these health risks, an estimated 160,000 adults in the State smoke cigarettes.

16% of NH adults and 21% of NH teens are current smokers

Involuntary exposure to second- and thirdhand smoke can also cause serious disease and death, including lung cancer, heart disease, worsening of asthma, and sudden infant death syndrome. Spit tobacco, cigars, and pipes are not safer than cigarettes and can cause lung, larynx, esophageal, and oral cancers.

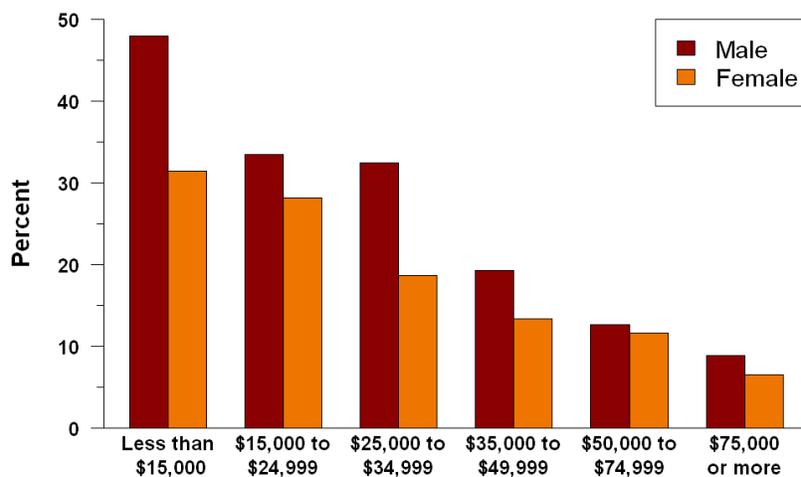
According to the 2009 BRFSS survey, 16 percent of New Hampshire adults (ages 18 and over) currently smoke cigarettes. Disparities in cigarette smoking exist among different age groups, educational levels, insurance statuses, and income levels (Figures 1 and 2).

**Figure 1:** Current Smokers by Gender and Education, 2009



Source: NH BRFSS

**Figure 2:** Current Smokers by Gender and Income, 2009



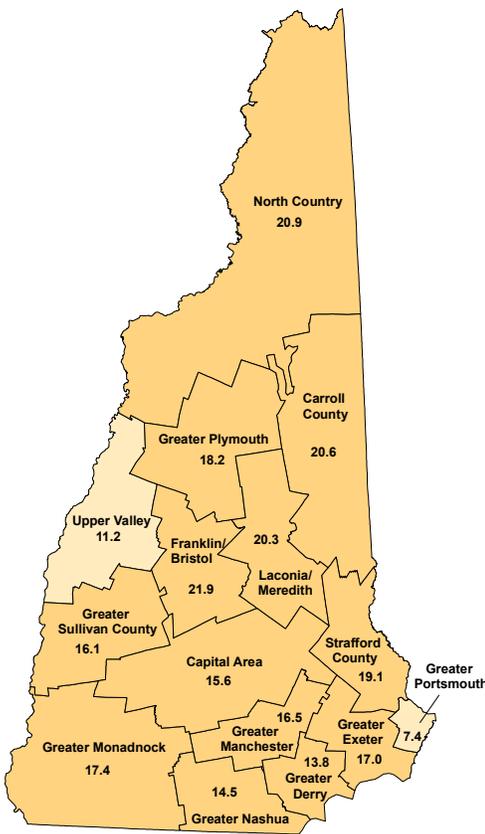
Source: NH BRFSS

*Tobacco use is the single most preventable cause of death, disease, and disability.*

*In NH the annual direct costs to the economy that can be attributed to smoking exceeded \$1.4 billion, including workplace productivity losses, premature death losses, and direct medical expenditures. While the retail price of a pack of cigarettes in NH is on average \$5.60, medical costs and productivity losses attributable to each pack of cigarettes sold are approximately \$11.40 [1].*

**For more information on smoking cessation, call the state quitline at 1-800-TRY TO Stop (1-800-879-8678) or visit <http://www.TryToStopNH.org>.**

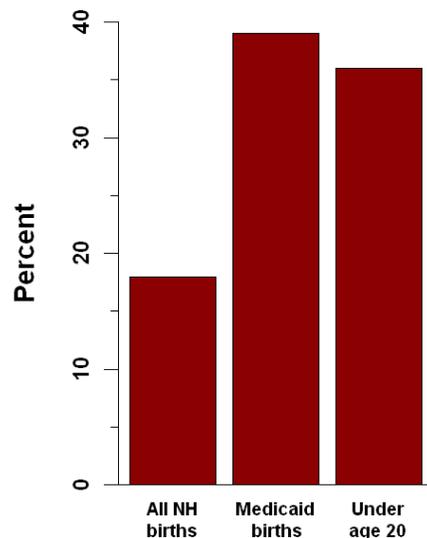
**Figure 3: Percentage of Current Smokers by Public Health Region, 2009**



Statistical comparison to statewide estimate  
 □ No significant difference  
 □ Significantly higher  
 □ Significantly lower

Source: NH BRFSS

**Figure 5: Percentage of Mothers Smoking**



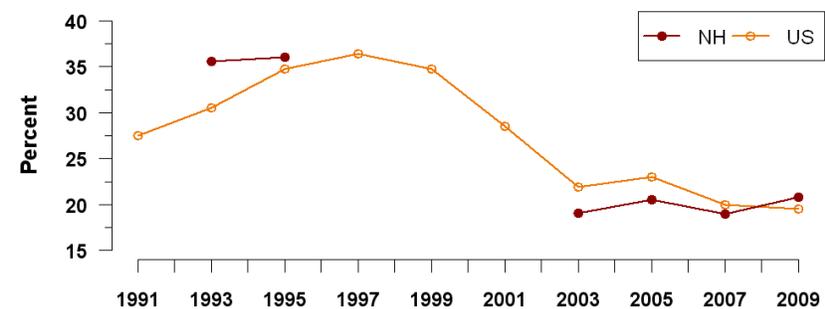
Source: NH Division of Vital Records Administration

Regional variations also exist, with Upper Valley and Portsmouth public health regions having significantly lower current smoking prevalence rates compared with the state (Figure 3).

**Youth Tobacco Use**

Tobacco use is usually initiated during adolescence, and addiction usually develops by age 20. Each year about 1,600 youth (under age 18) become new daily smokers in New Hampshire. Twenty-one percent (15,400) of New Hampshire high school students currently smoke cigarettes. This represents a significant decrease compared with the previous proportion of 36 percent in 1995, as was seen nationally. Since 2003, however, the percentage of smoking students has stagnated at around 20 percent (Figure 4). Eight percent of high school students use chewing tobacco, according to the 2009 YRBS.

**Figure 4: Percentage of Youth Current Smokers**



Source: NH YRBS

**Smoking During Pregnancy**

Smoking during pregnancy harms the health of both the woman and her unborn baby. Maternal smoking accounts for 20–30 percent of low birth weight babies, up to 14 percent of preterm deliveries, and roughly 10 percent of all infant deaths. Caring for babies born too early or too small is expensive. The estimated cost of such care that can be attributed to smoking in New Hampshire is \$2.3 million [2].

In 2009, 17 percent of New Hampshire women of childbearing age (18–44 years) reported smoking, compared with 20 percent in the US [3]. The proportion of smokers among pregnant women in New Hampshire has been stable at 15 percent in recent years. That proportion is higher for women covered by Medicaid (39 percent) and for teen mothers (36 percent) (Figure 5).

**Smoke-Free Workplaces and Homes**

Smoke-free policies prohibit smoking in indoor workplaces and designated public areas. Among adults who work indoors, the proportion who reported anyone smoking in their work area within the preceding two weeks has remained lower in New Hampshire (4.5 percent) than in the nation (7.3 percent) [4]. The 2009 BRFSS survey estimated that 80 percent of New Hampshire homes are smoke-free.

## References

1. Rumberger, JS et al., Potential Costs and Benefits of Smoking Cessation: An Overview of the Approach to State Specific Analysis, 2010, [www.lungusa.org](http://www.lungusa.org).
2. State estimates of neonatal health care costs associated with maternal smoking-US 1996, Morbidity and Mortality Weekly Reports v. 53, n. 39, 915-917, 2004.
3. March of Dimes Peristats query system, [www.marchofdimes.com](http://www.marchofdimes.com)
4. Tobacco Control State Highlights, 2010, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, [www.cdc.gov/tobacco/data\\_statistics/state\\_data/state\\_highlights/2010/index.htm](http://www.cdc.gov/tobacco/data_statistics/state_data/state_highlights/2010/index.htm).

## Fruit and Vegetable Consumption

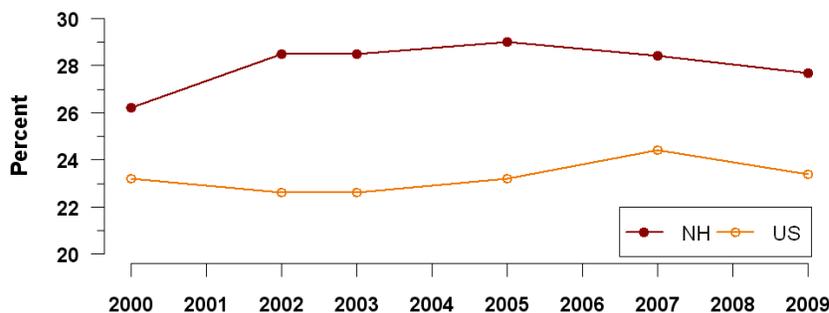
Eating fruits and vegetables is key to good health. They contain essential vitamins, minerals, fiber,

*Only 28% of NH adults and 22% of teens consume the recommended amount of fruits and vegetables.*

and other nutrients that help reduce the risk of chronic diseases and cancer. Since no one vegetable or fruit has all the essential nutrients, variety in diet is important. Fruits and vegetables, when consumed in place of high-calorie foods, play an important role in achieving and maintaining healthy weight. The Dietary Guidelines for Americans 2005 recommend that Americans age two years and older eat at least 2½–6½ cups (5–13 servings) of fruits and vegetables every day [1].

In 2009, only 28 percent of New Hampshire adults and 23 percent of adults across the country consumed five servings of fruit and vegetables daily (Figure 1). While the New Hampshire rate of fruit and vegetable consumption is consistently above the national measure, both are well below the Healthy People 2010 objective of 75 percent [2].

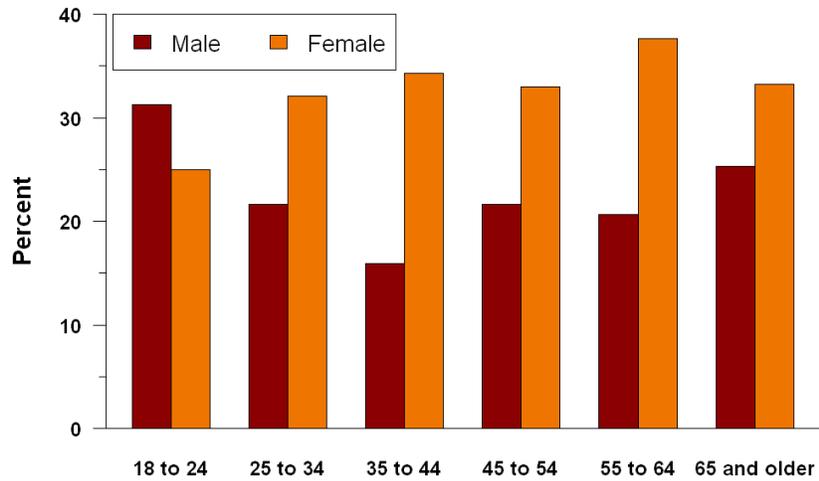
**Figure 1.** Percentage of Adults Consuming Five or More Servings of Fruit and Vegetables, 2000-2009



Source: NH BRFSS

Low fruit and vegetable consumption is associated with males (Figure 2), low education levels, and low income. Fruit and vegetable consumption among New Hampshire teens, as measured in 2007, revealed that only 22 percent of high school students ate the recommended amount of fruits and vegetables—nearly identical to the national rate of 21 percent [3].

**Figure 2:** Adults Consuming Fruits and Vegetables Five or More Times a Day, 2009



Source: NH BRFSS

References

1. U.S. Department of Health and Human Services and U.S. Department of Agriculture. Dietary Guidelines for Americans 2005. Washington, DC: U.S. Government Printing Office; 2005.
2. CDC, Healthy People 2010, (19) Nutrition and Overweight, <http://www.healthypeople.gov/2010/Document/pdf/Volume2/19Nutrition.pdf>
3. CDC, Youth Risk Behavior Surveillance System, <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>

**Obesity**

Obesity is a serious health concern that increases the risk for many chronic diseases including heart disease, stroke, type 2 diabetes, high blood pressure, liver disease, osteoarthritis, and depression during both childhood and adulthood. Childhood obesity also predicts obesity later in life.

*In NH, 62% of adults and 28% of high school students are overweight or obese.*

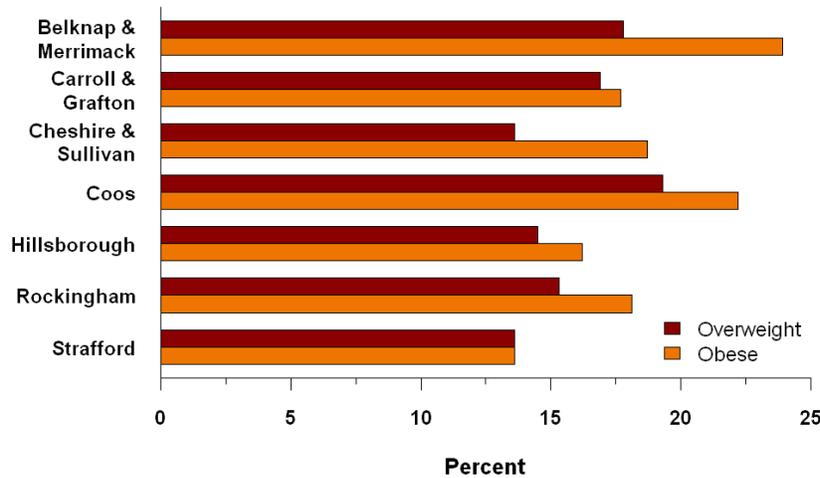
*The standard measure of obesity is Body Mass Index (BMI), which takes into account both weight and height. BMI is defined as weight in kilograms divided by height in meters squared. In adults, overweight is defined as a BMI between 25 and 30, and obesity as a BMI of 30 or more.*

**Childhood Obesity**

The 2007–2008 National Health and Nutrition Examination Survey, a representative sample of the US population, estimated that 15 percent of children and adolescents (age 2–19) were overweight and 17 percent were obese, for a total of 32 percent above recommended weight for age [1].

In the 2009 New Hampshire Healthy Smiles—Healthy Growth survey of third graders, 33 percent were overweight or obese. The survey also showed regional differences in childhood obesity: third grade students in the Belknap-Merrimack region (24 percent) and Coos County (22 percent) had the highest prevalence of obesity (Figure 1, next page), and nearly 46 percent of third grade boys in Coos County were overweight or obese.

**Figure 1: Third Graders Overweight or Obese, 2009**

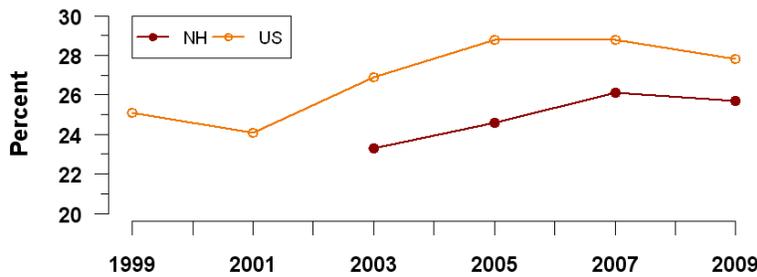


Source: NH Third Grade Healthy Smiles-Healthy Growth Survey

In 2009, 26 percent of high school students enrolled in New Hampshire public schools were overweight or obese. Twice as many boys (16 percent) were obese compared with girls (8 percent). The trend seen in recent years in New Hampshire is similar to the national trend, but the proportion of overweight and obese students is consistently lower than the US average (Figure 2).

*Overweight in children is defined as a BMI between the 85th and 95th percentiles for children of the same age and gender. Children with a BMI greater than the 95th percentile are considered obese.*

**Figure 2: High School Students Overweight or Obese, 1999-2009**

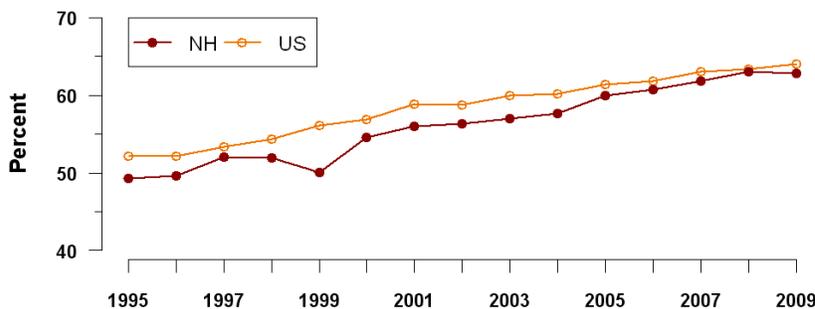


Sources: NH YRBS, CDC

**Adult Obesity**

The 2009 BRFSS survey estimated that 36 percent of New Hampshire adults were overweight and 26 percent were obese, similar to national data (Figure 3).

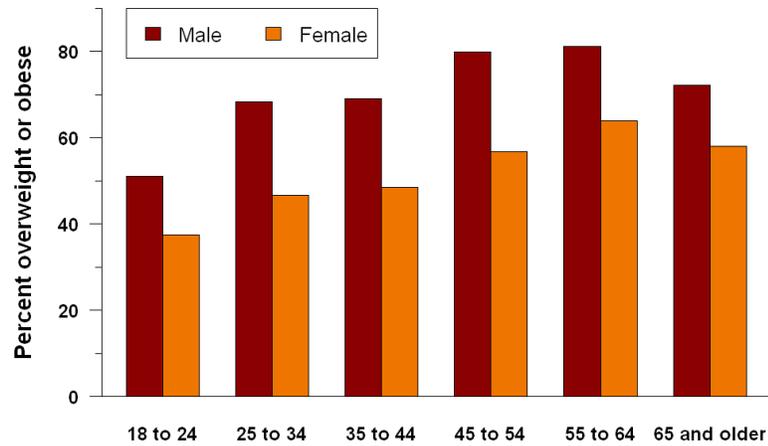
**Figure 3: Adults Overweight or Obese, 1995-2009**



Sources: NH BRFSS, CDC

Among adults, males were commonly more obese or overweight than females for all age groups (Figure 4). Among public health regions, 69 percent of adults in the North Country Public Health Region are overweight or obese. This is significantly higher than the State average.

**Figure 4:** Adults Overweight or Obese by Gender and Age Group, 2009



Source: NH BRFSS

Many strategies, addressing both physical activity and healthy eating, will be needed to reverse the obesity epidemic.

#### Reference

- Ogden, C. L., et al. Prevalence of High Body Mass Index in US Children and Adolescents, 2007-2008. JAMA v. 303, n. 3, 2010.

## Physical Activity

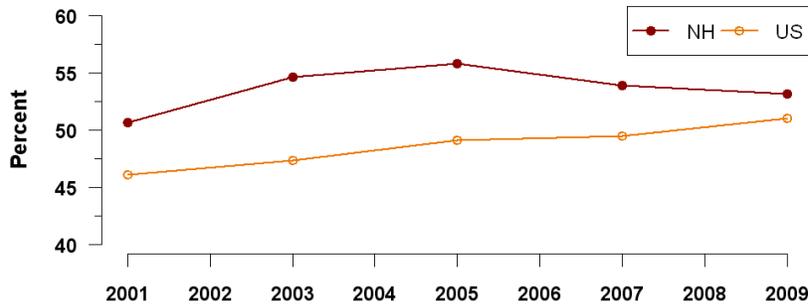
Physical activity (“anything that gets your body moving”) [1] has multiple beneficial effects. It can reduce the risk of chronic diseases (heart disease, diabetes, elevated cholesterol, certain types of cancer) and improve daily activity and mental health.

*Approximately 53% of NH adults and 46% of youth report being physically active.*

According to the 2008 Physical Activity Guidelines for Americans [1] adults should get at least 150 minutes per week of moderate intensity physical activity (like walking) or at least 75 minutes of vigorous intensity physical activity each week (like running). Adults should also include muscle-strengthening activities at least two days per week. The recommendations for children (6–17 years old) are for one hour of moderate physical activity every day that should include muscle-building physical activities (such as climbing) at least three days per week [2].

Based on the 2009 BRFSS survey, 53 percent of New Hampshire adults are physically active (at least 30 minutes of moderate physical activity five or more days, or at least 20 minutes of vigorous physical activity, three or more days per week). This rate is similar to the national rate of 51 percent (Figure 1, next page), and is similar between males and females.

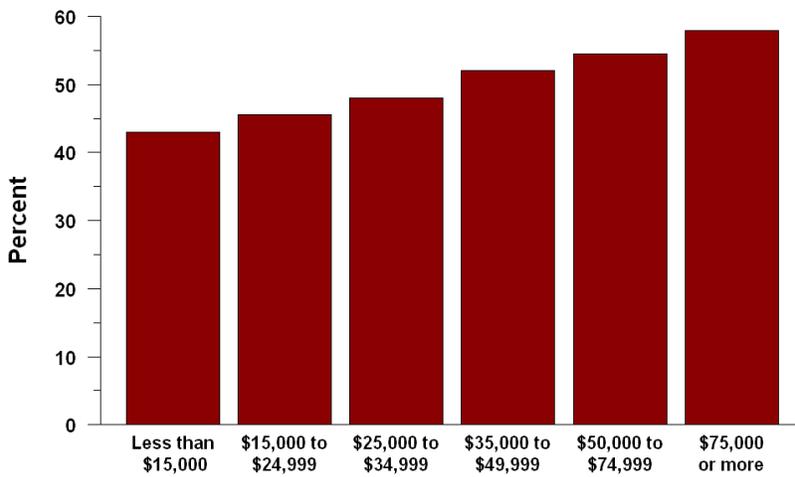
**Figure 1: Adults Physically Active, 2001-2009**



Source: NH BRFSS, CDC

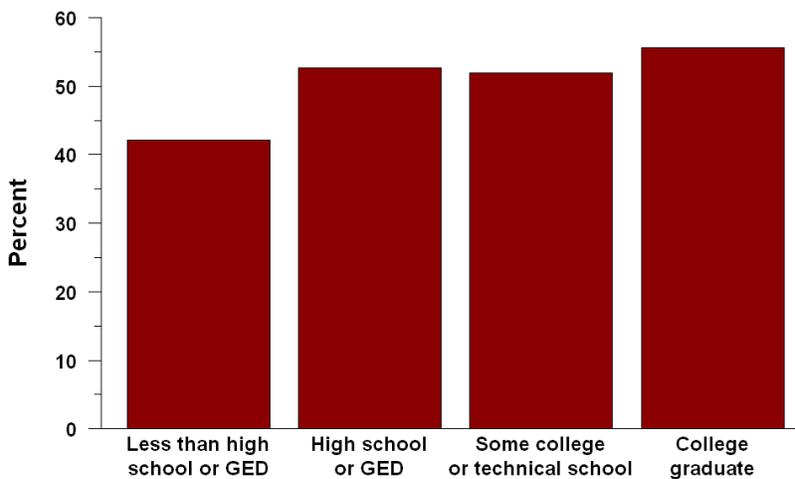
Higher rates of physical activity are associated with higher income (Figure 2) and educational attainment (Figure 3). Physical activity declines with age (Figure 4).

**Figure 2: Adults Physically Active by Income, 2009**



Source: NH BRFSS, CDC

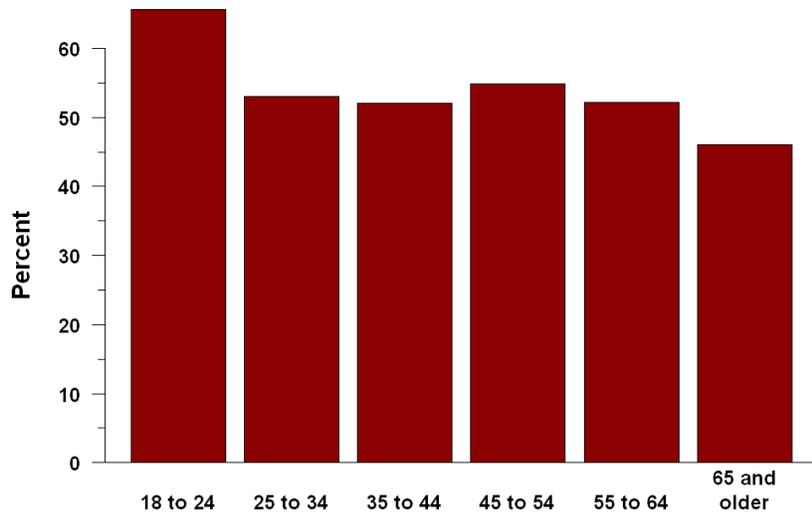
**Figure 3: Adults Physically Active by Education, 2009**



Source: NH BRFSS, CDC

For more information about the NH Healthy Eating Active Living (HEAL) Obesity Prevention Plan visit [www.healnh.org/StatewideInitiative/HealActionPlan](http://www.healnh.org/StatewideInitiative/HealActionPlan) or call (603) 415-4273.

Figure 4: Adults Physically Active by Age, 2009



Source: NH BRFSS, CDC

As for youth physical activity, YRBS data indicate that 46 percent of New Hampshire teens are active for at least 60 minutes a day at least 5 days a week, which is significantly higher than the national estimate of 36 percent [3].

References

1. CDC, Physical Activity for Everyone, <http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>
2. CDC, 2008 Physical Activity Guidelines, Chapter 3: Active Children and Adolescents <http://www.health.gov/paguidelines/guidelines/chapter3.aspx>
3. CDC, Youth Risk Behavior Surveillance System, <http://www.cdc.gov/HealthyYouth/yrbs/index.htm>

Alcohol and Drug Abuse

Substance abuse and excessive alcohol use have many harmful effects on health, including chronic diseases, infectious diseases, unintentional injuries (falls and motor vehicle accidents), and cancer. Social problems, such as violence, isolation, and incarceration, are also common. If abuse starts in youth, further damage is done to the developing brain, resulting in lifelong impaired cognitive function and memory problems. Alcohol use by pregnant women is harmful to the fetus and can lead to miscarriage, stillbirth, and physical and mental birth defects. In light of the extensive negative consequences, sixteen goals relating to drug and alcohol abuse were set in Healthy People 2010 [1].

*Alcohol use among high school students is nearly 40% and illicit drug use has been increasing since 1993.*

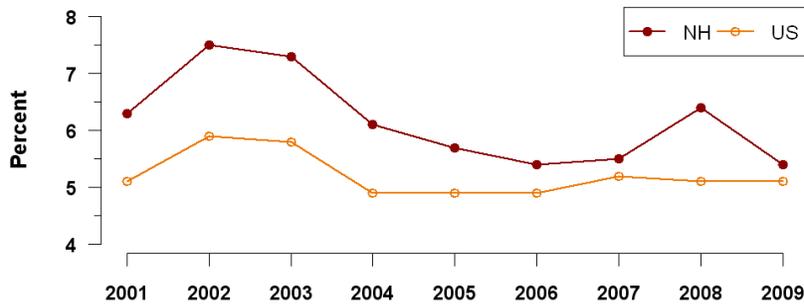
Alcohol use by pregnant women is harmful to the fetus and can lead to miscarriage, stillbirth, and physical and mental birth defects. In light of the extensive negative consequences, sixteen goals relating to drug and alcohol abuse were set in Healthy People 2010 [1].

Adult Alcohol and Substance Abuse

In 2009, the BRFSS survey found that 5.5 percent of New Hampshire adults reported heavy drinking (defined as more than two drinks per day for a man and more than one drink per day for a woman), similar to the national rate (Figure 1, next page). Heavy drinking tends to be more common among young male adults (11 percent) (Figure 2, next page).

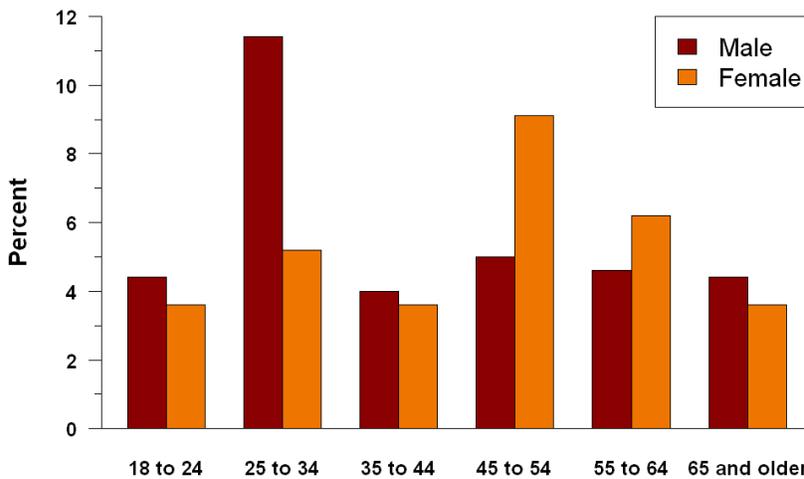
*16% of the NH adult population admits to binge drinking and 10% to illicit drug use.*

**Figure 1: Adult Heavy Drinkers, 2001–2009**



Source: NH BRFSS, CDC

**Figure 2: Adult Heavy Drinkers, 2009**



Source: NH BRFSS

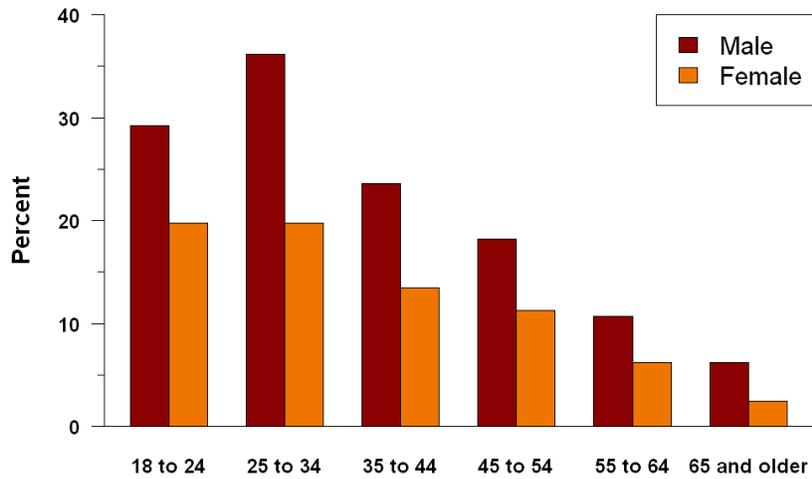
During the period 2008–2009, rates of heavy drinking were similar across the State. Binge drinking, currently defined as five or more drinks in one occasion for a man or four or more for a woman, is another measure of alcohol abuse.

In 2009, 16 percent of New Hampshire adults reported having in the past month at least one occasion of binge drinking, almost identical to the national rate. Binge drinking was more prevalent among men than women and among younger adults compared with elderly (Figure 3). Since the current BRFSS definition of binge drinking has only been effective since 2006, not enough data are in place to establish trends.

During the period 2008–2009, only the Upper Valley region had a significantly lower prevalence of binge drinking than the State (10 percent).

Illicit drugs include marijuana or hashish, cocaine (including crack), heroin, hallucinogens, inhalants, and prescription-type psychotherapeutics used non-medicinally. Based on 2006–2007 survey results, the Substance Abuse and Mental Health Services Administration (SAMHSA) estimated that 10 percent of New Hampshire adults used illicit drugs in the month prior to the survey, substantially higher than the national goal of 2 percent but not significantly above the national estimate of 8 percent [2]. Illicit drug use was most prevalent among adults aged 18–25 years [3].

**Figure 3: Adult Binge Drinkers, 2009**



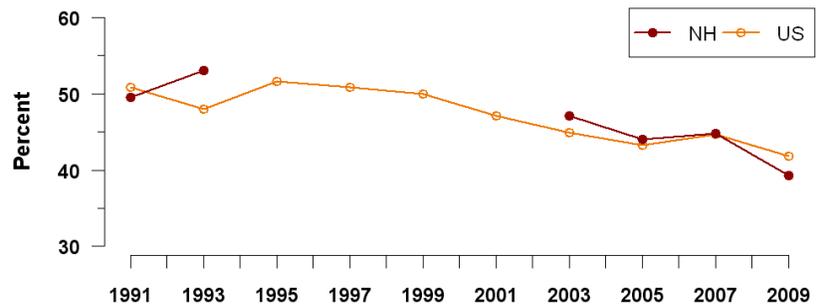
Note: In 2006 binge drinking was redefined as males having five or more drinks on one occasion, or females having four or more drinks on one occasion.

Source: NH BRFSS

### Youth Alcohol and Substance Abuse

Data from the YRBS survey indicate that current alcohol use (at least one drink within last 30 days) among high school students declined since 1993 but is still nearly 40 percent, similar to national data (Figure 4).

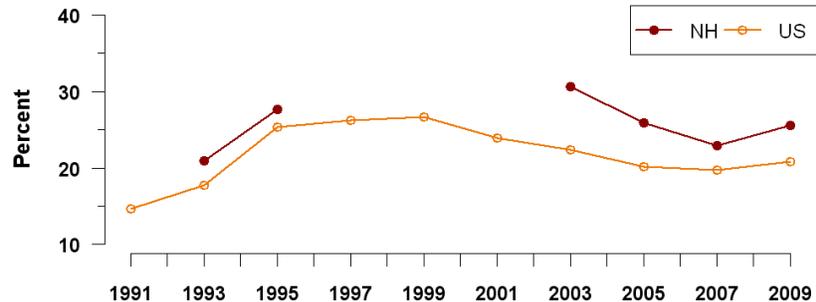
**Figure 4: Youth Current (30-Day) Alcohol Use**



Source: YRBS

During the same period of time, use of illicit drugs among that population increased in New Hampshire. In 2009, over 25 percent of youth reported using marijuana at least once in the last month, significantly higher than the US rate of 20 percent (Figure 5). Four percent reported using cocaine at least once in the last month (similar to national data).

**Figure 5: Youth Current (30-Day) Marijuana Use**



Source: YRBS

For more information on preventing alcohol and drug abuse contact the Bureau of Alcohol and Drug Services at (603) 271-2677 or visit <http://www.dhhs.nh.gov/dcbcs/bdas/recovery.htm>.

Further work will be required in both adult and youth to achieve national goals of decreasing substance and alcohol abuse.

#### References

1. Healthy People 2010 Substance Abuse Objectives (26), <http://www.healthypeople.gov/2010/Data/midcourse/html/focusareas/FA26TOC.htm>
2. Adult Tables, State Estimates of Substance Use from the 2006-2007 NSUDH, SAMHSA, OAS, <http://www.oas.samhsa.gov/2k7state/adultTabs.htm>
3. New Hampshire State Estimates of Substance Use from the 2006-2007 National Surveys on Drug Use, <http://www.oas.samhsa.gov/2k7State/NewHampshire.htm>.

## Human Immunodeficiency Virus (HIV)

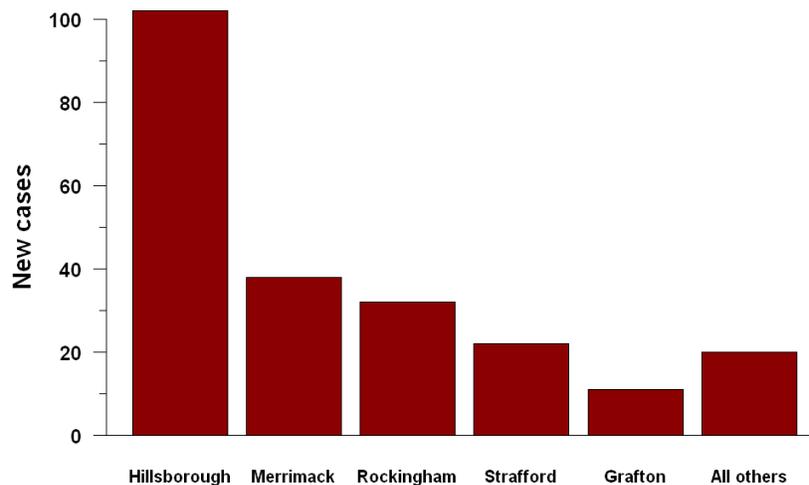
HIV is a virus that destroys CD4 cells, immune system cells that are crucial in fighting off infections, and can lead to Acquired

*In 2009, nearly 50% of new HIV cases in NH were concurrently diagnosed with AIDS.*

Immunodeficiency Syndrome (AIDS). HIV is usually spread from person-to-person through sexual contact or by sharing needles or syringes with an infected person. Since blood is now screened for HIV at donation centers, the virus is rarely transmitted through blood transfusion. Infected women can pass HIV to the baby during pregnancy, birth, or through breastfeeding. After becoming infected, a person can transmit the virus at any time.

New Hampshire is a low incidence state, with 40–50 new cases of HIV diagnosed and reported yearly between 2005 and 2009. In 2009, over three-quarters of the cases were males ages 20–49. Hillsborough County, with the largest population, accounts for the majority of the cases each year (Figure 1). All 47 new HIV cases in 2009 were from five counties.

**Figure 1:** New HIV Cases by County, 2005-2009

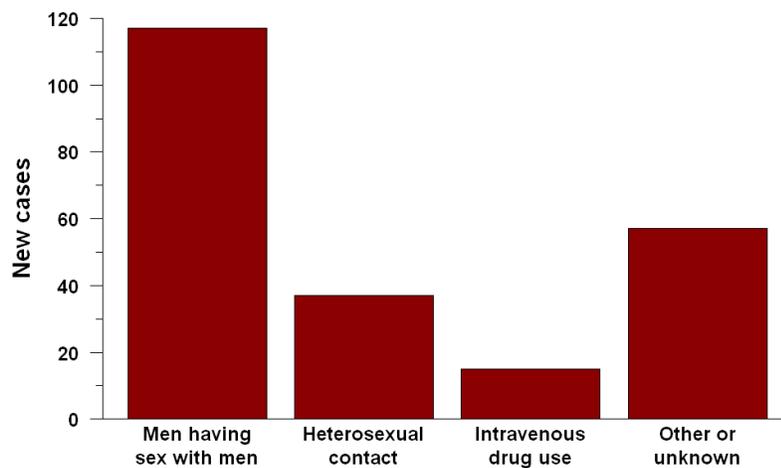


Source: Enhanced HIV/AIDS Reporting System (eHARS)

In New Hampshire, most new HIV diagnoses from 2005–2009 were among men having sex with men. Heterosexual contact was the second leading identified risk factor (Figure 2). One case involved transmission from mother to newborn infant.

For more information  
on HIV testing visit  
[www.dhhs.nh.gov/dphs/bchs/  
std/publications.htm](http://www.dhhs.nh.gov/dphs/bchs/std/publications.htm).

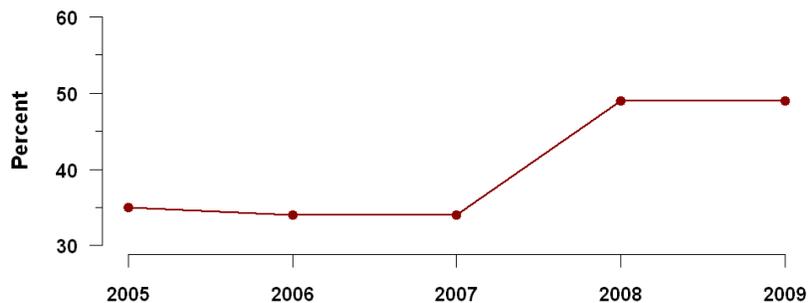
**Figure 2: Risk Characteristics of New HIV Cases, 2005-2009**



Note: "Other" includes one case of transmission from mother to newborn infant.  
Source: Enhanced HIV AIDS Reporting System (eHARS)

Forty percent of all newly diagnosed HIV cases in this period were concurrently (within one year) diagnosed with AIDS, including 49 percent in both 2008 and 2009 (Figure 3). This indicates that HIV is being diagnosed at a late stage. No national data are available for comparison on concurrent HIV/AIDS diagnosis.

**Figure 3: HIV Diagnoses Concurrent with AIDS Diagnosis, 2005-2009**



Source: Enhanced HIV AIDS Reporting System (eHARS)

Early diagnosis of HIV infection through a simple test can minimize damage to the immune system. HIV testing is available at 22 publicly funded clinics located throughout the State. The clinics also provide counseling and referrals for medical care and financial assistance.

## Teen Births

Teen pregnancy and child-bearing have a huge social, medical and economic impact on the families involved as well as the community. Children of teen mothers are at higher risk for the following:

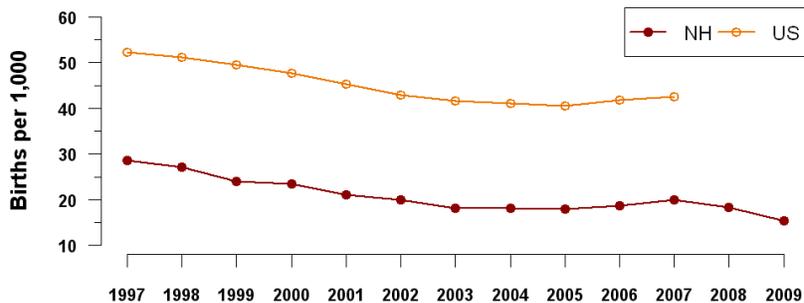
*NH has one of the lowest teen birth rates in the country.*

- Poor academic performance: lower cognitive attainment and proficiency scores at kindergarten entry, more likely to drop out of high school
- Social and behavioral problems: incarceration during adolescence and young adulthood
- Economic problems: unemployment and underemployment as young adults, poverty
- Chronic medical conditions and reliance on public health care.

Children of teen mothers are also more likely to give birth or father children as teenagers themselves, thus creating a vicious cycle that is very hard to break.

Fortunately, New Hampshire consistently ranks first or second best in the nation for low teen births [1]. In 2007, the most recent for which national data are available, the New Hampshire birth rate was 20.0 live births per 1,000 females 15–19 years old, compared with 42.5 nationally. Teen birth rates for both the State and the nation have steadily decreased since 1990 when the State rate exceeded 30, compared with 15.4 in 2009 (Figure 1). Since three-quarters of teen births in the State occur among women 18 or 19 years old, the rate among girls 15–17 years old is even lower at 6.3 per 1000.

**Figure 1:** Teen Birth Rates, 1997-2009



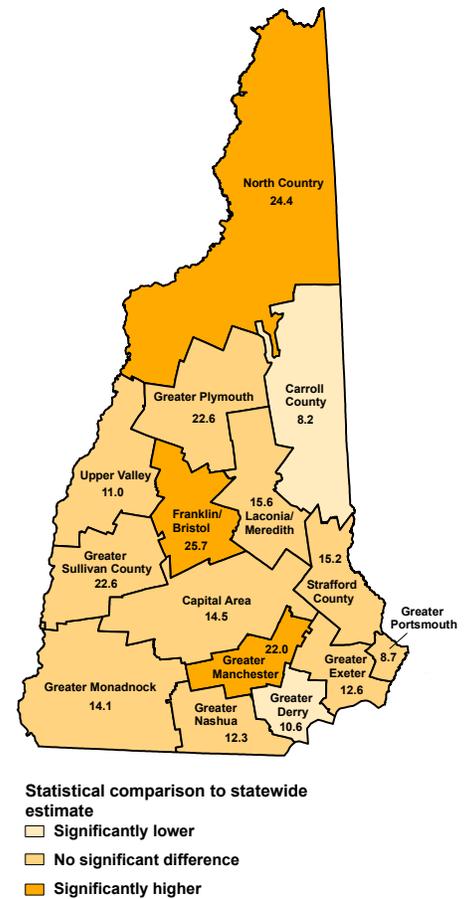
Sources: NH DVRA, NCHS

While the teen birth rate is low for the State as a whole, disparities exist. The Greater Manchester, North Country, and Franklin-Bristol regions had rates significantly higher than the State in 2009, while Carroll County and Greater Derry had significantly lower rates (Figure 2). In the City of Manchester, home to New Hampshire’s most diverse population, the 2009 teen birth rate was more than twice the State rate (35.1). In the poorest communities, more than 12 percent of total births are to mothers without a high school diploma, compared with 5.7 percent in the rest of the State [1].

**Reference**

1. Annie E. Casey Foundation 2009. 2009 Kids Count Data Book: State Profiles of Child Well-Being. Available from [www.aecf.org](http://www.aecf.org)

**Figure 2:** Teen Birth Rates by Public Health Region, 2009



Source: NH DVRA

*Despite a low overall state rate, disparities exist and some communities experience higher teen birth rates.*

## Breastfeeding

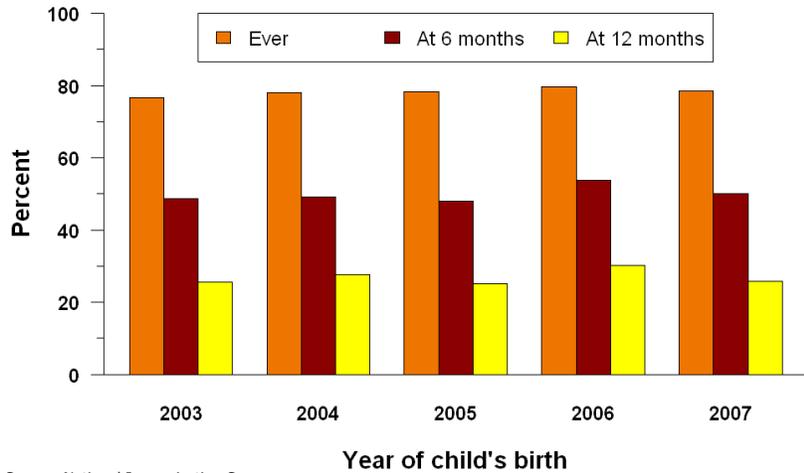
Breast milk is known to be the best food for babies. It provides balanced nutrition, protects the baby from short-term infections, and reduces the risk for obesity and leukemia during childhood. Breastfeeding is also beneficial to mothers, reducing the risk of breast and ovarian cancer [1].

*NH is one of ten states that met all goals set by Healthy People 2010 for breastfeeding.*

According to the most recent data from the National Immunization Survey (NIS), 79 percent of New Hampshire children born in 2007 were reported to have ever been breastfed, similar to national data [2], and 50 percent of babies are still breastfed at 6 months of age.

New Hampshire is one of ten states that met all breastfeeding-related objectives as defined in Healthy People 2010 [3] (Figure 1).

**Figure 1:** Breastfeeding Data Among Children Born 2003-2007

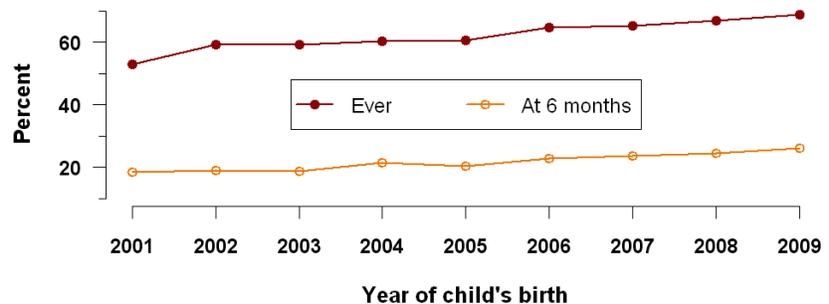


Source: National Immunization Survey

### Breastfeeding in Low Income Households

The Pediatric Nutrition Surveillance System (PedNSS) is a child-based public health surveillance system that monitors the nutritional status of low-income children enrolled in the Supplemental Nutrition Program for Women, Infants and Children (WIC). Breastfeeding rates are lower among this population, but with WIC support (breastfeeding counseling, improved food packages, and more) these rates have increased over the last decade by over 25 percent (Figure 2) [4].

**Figure 2.** Low-income children up to age five, who were ever breastfed, 2001-2008



Source: Pediatric Nutrition Surveillance System

For more information about breastfeeding in NH visit <http://www.dhhs.nh.gov/dphs/nhp/wic/breastfeeding.htm> or call (603) 271-0571.

Breastfeeding is the optimal infant feeding choice, and New Hampshire breastfeeding rates, although among the highest in the US, could be further improved.

References

1. Breastfeeding and Maternal Health Outcomes in Developed Countries, ARHQ Publication No. 07-E007, <http://www.ahrq.gov/clinic/tp/brfouttp.htm>.
2. Breastfeeding Report Card—US, 2010 <http://www.cdc.gov/breastfeeding/data/reportcard.htm>
3. Breastfeeding Among U.S. Children Born 1999–2007, CDC National Immunization Survey, [http://www.cdc.gov/breastfeeding/data/NIS\\_data/index.htm](http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm)
4. U.S. Department of Agriculture, Breastfeeding Promotion and Support in WIC, <http://www.fns.usda.gov/wic/Breastfeeding/mainpage.HTM>

**Seat Belt Use**

Seat belts are essential for reducing injury during motor vehicle accidents. Using a seat belt reduces the risk of death to front seat occupants by 45–60 percent and the risk of serious non-fatal injuries by 50–65 percent [1]. In 2009, 62 percent of motor vehicle fatalities were not wearing a seat belt at the time of the accident [1]. In 2007, motor vehicle injuries in New Hampshire were responsible for more than 32 emergency department visits per day and 850 hospitalizations over the entire year. Total costs were estimated at \$61 million.

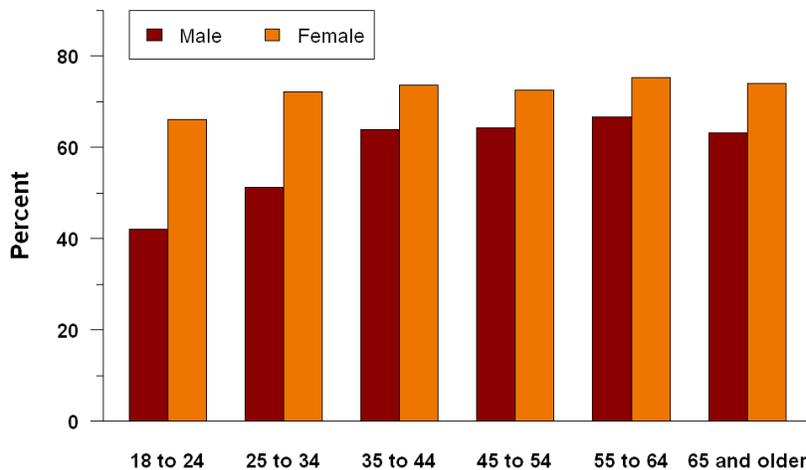
*62% of motor vehicle fatality victims in NH were not wearing seatbelts at the time of the accident.*

*Wearing a seat belt is the single most effective way to be protected in a motor vehicle crash. NH is the only state in the nation that does not require seat belts for adults.*

**Adult Seat Belt Use**

Based on the 2008 BRFSS survey, approximately 66 percent of New Hampshire residents always use a seatbelt when riding in a vehicle, compared with 82 percent in the US. Seat belt use is higher among college graduates and persons with higher income levels and significantly lower among young adults (ages 18–24). Women are more likely to use seat belts than men (Figure 1).

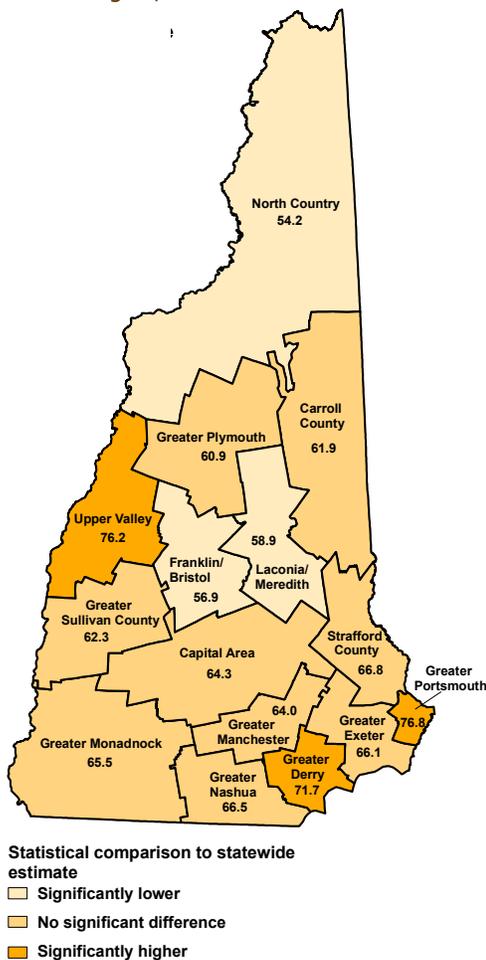
**Figure 1:** Percent Reporting “Always Wear Seat Belt” by Gender and Age, 2008



Source: NH BRFSS

*Two-thirds of all NH residents surveyed in 2006 supported a seat belt law [2].*

**Figure 2: Seat Belt Use by Public Health Region, 2008**



Source: NH BRFS

Regional differences in seat belt use are evident. The Upper Valley, Greater Portsmouth, and Greater Derry public health regions have significantly higher rates of seatbelt use, while the Franklin-Bristol, North Country, and Laconia-Meredith regions have significantly lower rates (Figure 2).

### Youth Seat Belt Use

Seat belt use is mandatory in New Hampshire under age 18. According to the 2009 YRBS, 13 percent of students never or rarely wear a seat belt when riding in a car driven by someone else. These data represent an improvement compared with historical data (28 percent in 1993), but have not changed significantly since 2003, and are consistently higher than the national rate of 10 percent [3].

Based on a survey conducted by the New Hampshire Highway Safety Agency in 2009, teen drivers were less likely to use a seat belt than adult drivers, and only 50 percent of front seat child passengers were restrained [4].

### References

1. National Highway Traffic Safety Administration. [http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/STSI/33\\_NH/2009/33\\_NH\\_2009.htm](http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/STSI/33_NH/2009/33_NH_2009.htm), accessed 9/30/10.
2. Smith, Andrew. "2006 Seatbelt Survey for Safe Kids New Hampshire", University of New Hampshire Survey Center.
3. CDC Youth Online: High School YRBS. <http://apps.nccd.cdc.gov/youthonline/App/Results.aspx?LID=NH>, accessed 12/01/10.
4. 2009 NH Seat Belt Observation Study. <http://www.nh.gov/hsafety/data/documents/seat-belt2009.pdf>, accessed 11/18/10

### Bicycle Helmet Use in Youth

Head injury is by far the greatest risk posed to bicyclists, comprising one-third of emergency department visits, two-thirds of hospital admissions, and three-fourths of deaths among this population in the US [1]. Wearing a bicycle helmet decreases the risk of head and brain injury by 70–88 percent and facial injury by 65 percent [1] and is required by New Hampshire law for children up to age 16.

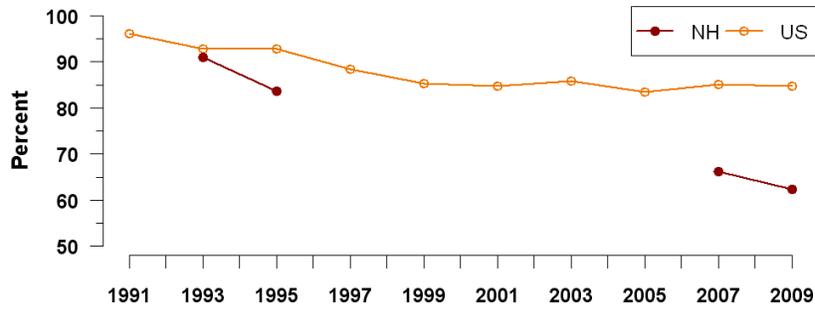
*More than 50% of NH ninth and tenth graders do not wear a helmet when riding bicycles, despite being required to by law.*

In 2009, 62 percent of New Hampshire high school students who rode a bicycle during the past 12 months reported that they never or rarely wore a bicycle helmet, significantly better than both the national rate (85 percent) and the 1993 New Hampshire rate (91 percent, Figure 1). Based on 2009 data, females are more likely to wear a helmet when riding bicycles than males (43 vs. 34 percent).

Of New Hampshire ninth and tenth graders who are under age 16 and covered by the bicycle helmet law, 55 percent and 62 percent, respectively, responded that they rarely or never wore a helmet (Figure 2).

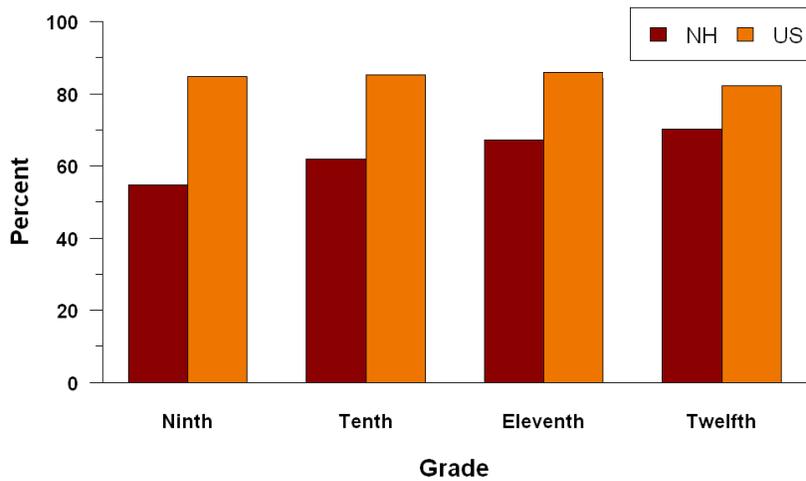
Further work is needed to reach universal use of helmets by children when biking as recommended and required by law.

**Figure 1:** High School Students Never or Rarely Wearing Bicycle Helmet, 1991-2009



Sources: NH YRBS, CDC Youth Online

**Figure 2:** High School Students Never or Rarely Wearing Bicycle Helmet by Grade, 2009

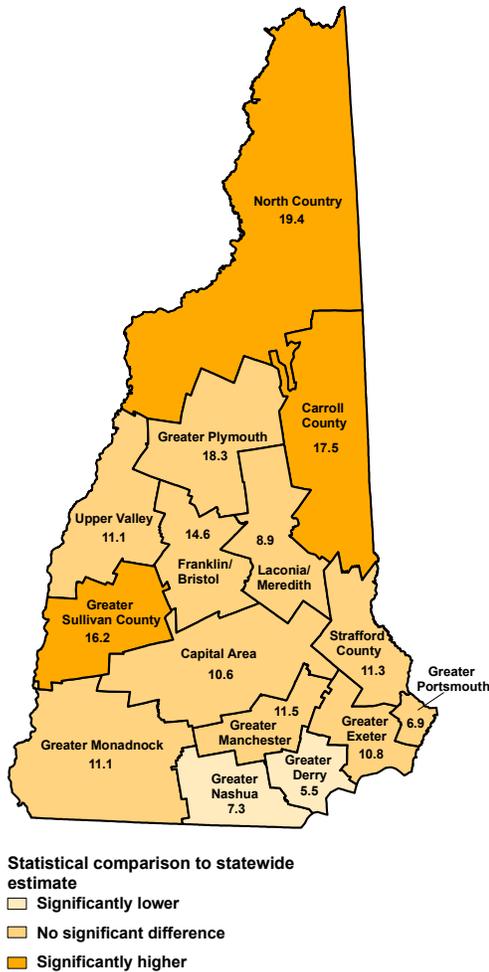


Sources: NH YRBS, CDC Youth Online

References

1. Harborview Injury Prevention and Research Center, <http://depts.washington.edu/hiprc/practices/topic/bicycles/index.html>.

**Figure 2:** Percent with No Health Insurance Plan, 2009



Source: NH BRFSS

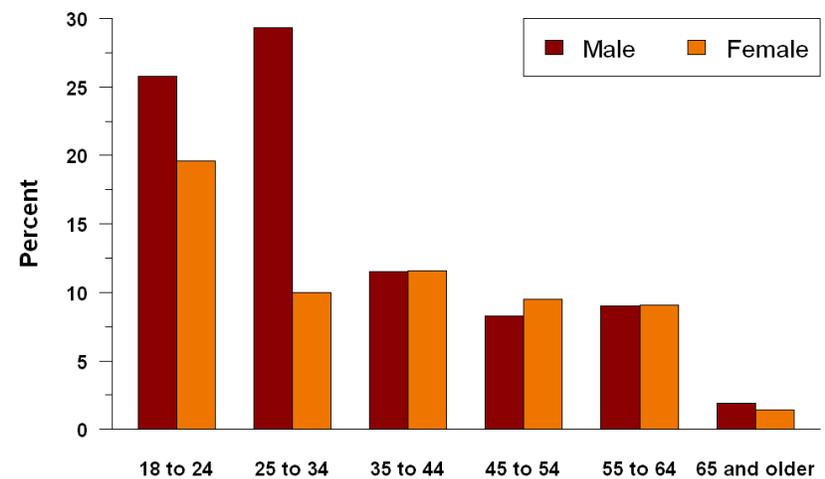
## Access to Care

### Health Insurance Coverage

In 2009, about 11 percent of New Hampshire adults (115,000) and 4 percent of New Hampshire children (11,000) lacked a health care plan, according to the BRFSS survey, compared with 17 and 6 percent, respectively, nationwide [1]. Despite the more favorable overall picture, adults with less education, lower incomes, and younger age (18–24) (Figure 1) were most likely to lack health insurance.

*Insurance coverage and availability of primary care and dental care in NH are better than the nation, although disparities exist.*

**Figure 1:** No Health Insurance Plan, 2009



Source: NH BRFSS

Among public health regions, the North Country region has a significantly higher prevalence of adults without health insurance compared with the State average (Figure 2).

About 11 percent of New Hampshire adults were unable to see a doctor when needed because of cost (no national data are available for comparison), and disparities were similar to those found for health insurance coverage.

### Access to Primary Care Providers

The ability to access primary care providers and primary care services is crucial for patients to meet their preventive, acute, and chronic health care needs. Primary care providers also help patients coordinate their care and navigate an increasingly complex health care system. Providers practicing family medicine, internal medicine, geriatrics, pediatrics, or some combination of these are considered primary care providers.

A Health Professional Shortage Area (HPSA) is defined as an area with less than one primary care provider per 3,000 low-income residents. The proportion of a population living in an HPSA is often used

as a measure of primary care needs in an area. In 2008, about 66,000 New Hampshire residents lived in an HPSA (5 percent, compared with 12 percent in the US) [2]. Coos and Grafton counties are federally designated as HPSAs, as are portions of Cheshire County and Hillsborough County.

According to recent BRFSS survey data, 89 percent of New Hampshire adults report having a personal health care provider, compared with 82 percent nationally. This measure varies by public health region, with the Greater Derry region having a significantly higher rate (95 percent), and North Country and Carroll County having significantly lower rates (80.2 and 82 percent, respectively) (Figure 3).

**Access to Dental Health Care Providers**

Oral health is an integral part of a person’s overall health. Poor oral health has been associated with both acute and chronic diseases.

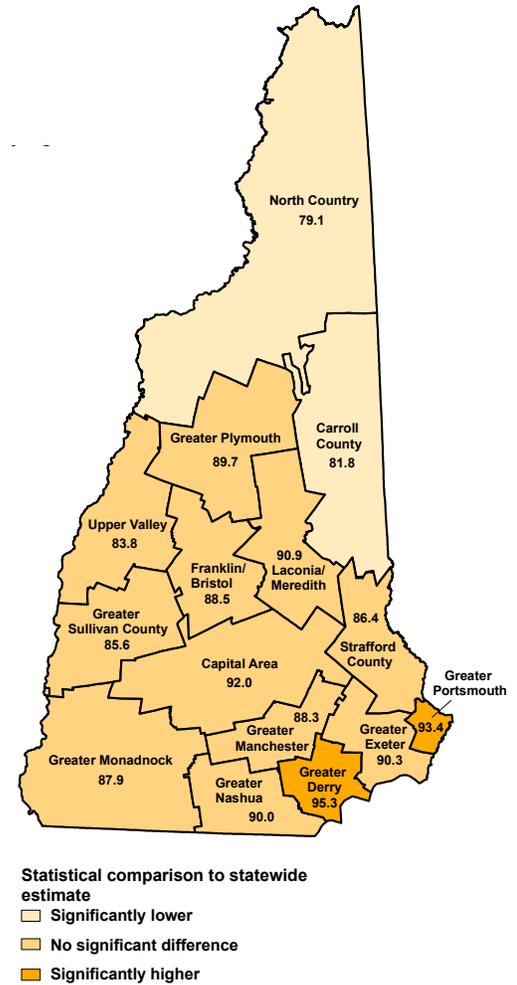
Dental Health Professional Shortage Area (DHPSA), defined as having fewer than one dental provider per 4,000 low-income persons, is used to determine the need for dental providers in an area. In 2008, 3.2 percent of New Hampshire’s population lived in a DHPSA, compared with 10.4 percent in the US. Coos, Grafton, and Carroll Counties are considered DHPSAs, as is a small portion of Hillsborough County.

The proportion of New Hampshire adults who reported having at least one dental visit in the past year was 76 percent in 2008–2009, compared with 70 percent nationally. This measure varies by public health region. The Greater Portsmouth region is significantly higher (93 percent). The Sullivan region (85 percent) and North Country region (80 percent) are significantly lower.

**References**

1. U.S. Census Bureau, Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) 2009, <http://www.census.gov/cps/>
2. State Licensing Boards Licensed Provider Lists and designation criteria survey from the NH DHHS, Rural Health and Primary Care Section serving as the Primary Care Office (PCO). BRFSS 2009.

**Figure 3: Percent Having Personal Health Care Provider, 2008-2009**



Source: NH BRFSS

# Quality of Care

## Preventable Hospitalizations

The main goal of primary care is to prevent disease or provide early treatment once disease ensues and avert hospitalizations. High blood pressure, chronic obstructive pulmonary disease (COPD), short-term complications of diabetes, bacterial pneumonia, and urinary tract infections exemplify conditions for which good outpatient care can prevent hospitalizations, complications, or more serious disease [1]. These conditions, referred to as Ambulatory Care Sensitive Conditions (ACSC), are widely used as a marker of access to primary care.

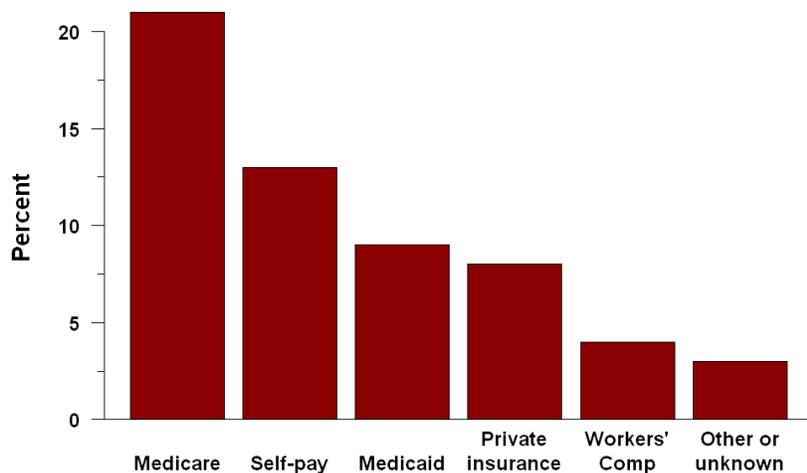
*With optimal outpatient care, up to 14% of hospitalizations in NH could be prevented.*

*Careful needs assessment is required in each community to determine barriers to outpatient care.*

While not all admissions for ACSCs are avoidable, appropriate primary care could often prevent the onset of illness, control an acute episode, or manage a chronic condition. Factors associated with high ACSC hospitalization rates can be related to characteristics of diseases (such as prevalence), patient characteristics (such as race or lifestyle), and healthcare access (such as insurance coverage and availability of primary care providers) [2].

In New Hampshire between 2003 and 2007, ACSC hospitalizations comprised 14 percent of all inpatient (IP) hospitalizations, at an estimated total cost of \$11 billion (10 percent of all charges). Patients insured by Medicare had 21 percent of ACSC admissions, followed by 12 percent self-payers, and 9 percent with Medicaid (Figure 1).

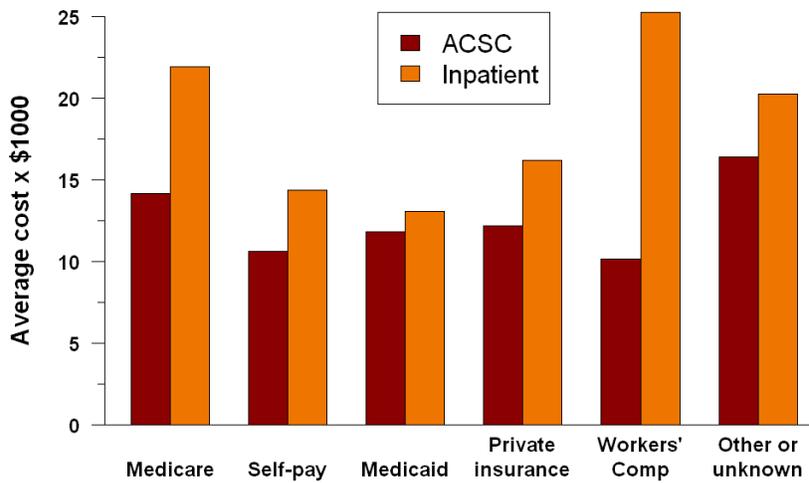
**Figure 1:** ACSC Hospitalizations as a Percentage of All IP Hospitalizations by Payer, 2003-2007



Source: NH hospital discharge data

In terms of total costs, 65 percent of all ACSC costs were incurred by Medicare patients, 24 percent by patients covered by private health plans, and 6 percent by Medicaid. Average billable charges were the highest for Medicare (\$14,000 per admission), followed by private insurance (\$12,000), and Medicaid (\$11,000) (Figure 2).

**Figure 2: Average Cost of Hospitalization by Payer, 2003-2007**



Source: NH hospital discharge data

Geographic disparities in ACSC rates exist in New Hampshire. Coos County has the highest rate of ACSC (20.4 per 1,000), as does its public health region North Country (17.6) (Figure 3).

ACSC hospitalizations can be reduced with careful needs assessment in communities to determine barriers to optimal primary care, such as medical coverage and availability of primary care providers.

References

1. Canadian Institute for Health Information (CIHI). Health indicators 2008: definitions, data sources and rationale. Ottawa (ON): Canadian Institute for Health Information (CIHI); 2008 May. 39 p.
2. Billings J, Anderson G, Newman L. Recent findings on preventable hospitalizations. Health Affairs (Millwood) 1996 Fall; 15(3):239-49.

**Vaccine Preventable Diseases**

**Chickenpox (Varicella) Vaccine Coverage**

Chickenpox is caused by the varicella zoster virus (VZV) and produces a widespread itchy vesicular (blistering) rash. Chickenpox is highly contagious starting from one to two days before the rash appears and for at least a week afterward. The virus spreads from person to person by direct contact with blister fluid or through airborne droplets from sneezing or coughing.

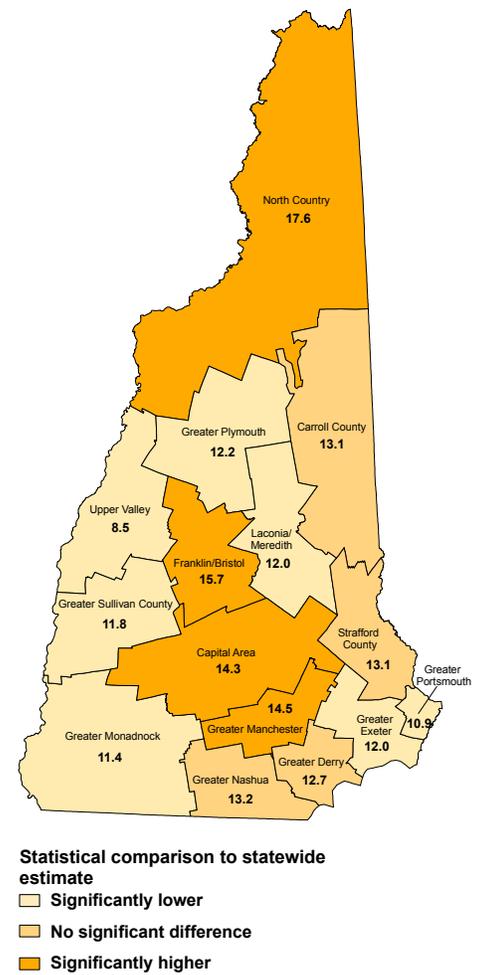
*Since 2005, chickenpox cases have decreased by 40%.*

Although initial infection may not produce symptoms, the virus stays in nerve roots. It can reactivate later in life, causing a more localized infection called shingles, which is also contagious.

Before the introduction of the VZV vaccine in 1995, the virus caused an estimated four million cases of chickenpox, 11,000 hospitalizations, and 100 to 150 deaths each year. Since 1995, the number of chickenpox cases has been greatly reduced nationally [1].

New Hampshire cases have declined in recent years, with the number of reported varicella cases dropping by 40 percent from 2005 to 2009 (Figure 1). This decline is due in part to recent

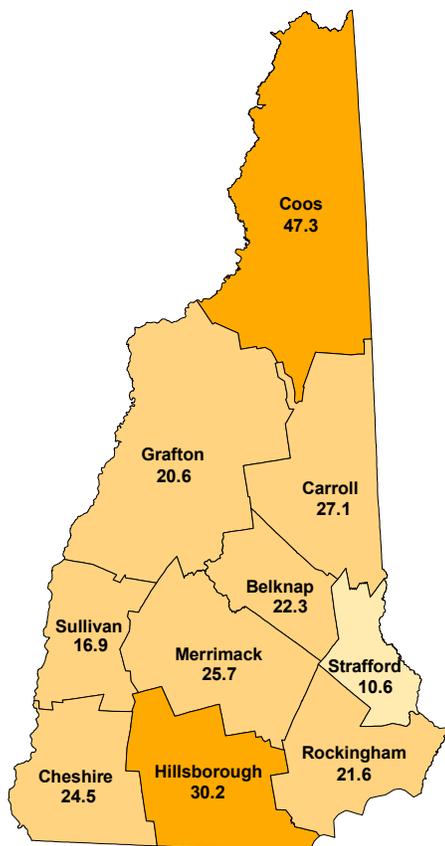
**Figure 3: ACSC Rates per 1,000 by Public Health Region, 2003-2007**



Source: NH hospital discharge data

*Vaccination is the best way to prevent chickenpox. In 2009, NH was among the top five states for chickenpox vaccination coverage, resulting in a significant decrease in chickenpox cases over the last five years.*

**Figure 2:** New Chickenpox Cases per 100,000 Population by County, 2005-2009



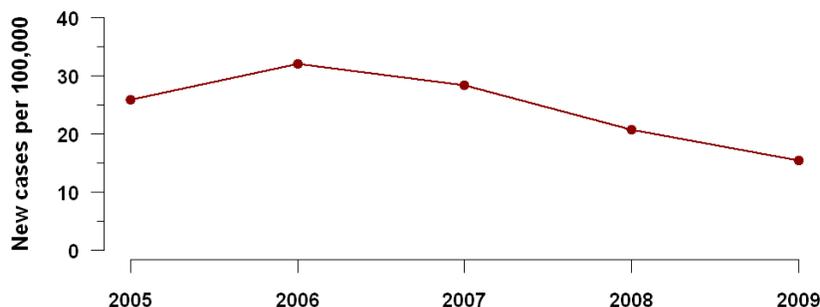
**Statistical comparison to statewide estimate**  
 □ Significantly lower  
 □ No significant difference  
 □ Significantly higher

Source: NH DHHS, Infectious Disease Surveillance Section

*The best way to prevent flu is by getting a flu vaccine yearly. Further work will be needed to achieve better vaccination rates in NH, especially given expanded recommendations, starting this year, to vaccinate all adults.*

recommendations for a second varicella vaccination at 4–6 years of age. The overall State rate in 2009 was 15 cases per 100,000, equally distributed between females and males. More than 60 percent of cases occurred in children age 9 years and younger.

**Figure 1:** New Chickenpox Cases, 2005-2009



Source: NH DHHS, Infectious Disease Surveillance Section

During the period 2005-2009, Coos and Hillsborough counties had the highest rate of reported chickenpox and Strafford had the lowest (Figure 2).

According to a 2009 CDC survey, 97 percent of New Hampshire teenagers (13–17 years of age) had at least one varicella vaccination (up from 93 percent in 2008) and 68 percent had at least two [2,3]. New Hampshire teen coverage compares favorably to the overall US vaccination coverage (87 percent for at least one and 49 percent for at least two vaccines).

**References**

- Centers for Disease Control and Prevention. Epidemiology and Prevention of Vaccine-Preventable Diseases. Atkinson W, Wolfe S, Hamborsky J, McIntyre L, eds. 11th ed. Washington DC: Public Health Foundation, 2009.
- CDC. National, State, and Local Area Vaccination Coverage among Adolescents Aged 13-17 Years – US, 2009. MMWR 2010;59:1018-1023.
- CDC. National, State, and Local Area Vaccination Coverage among Adolescents Aged 13-17 years—US, 2008. MMWR 2009;58:997-1001.

**Adult Flu (Influenza) Vaccine Coverage**

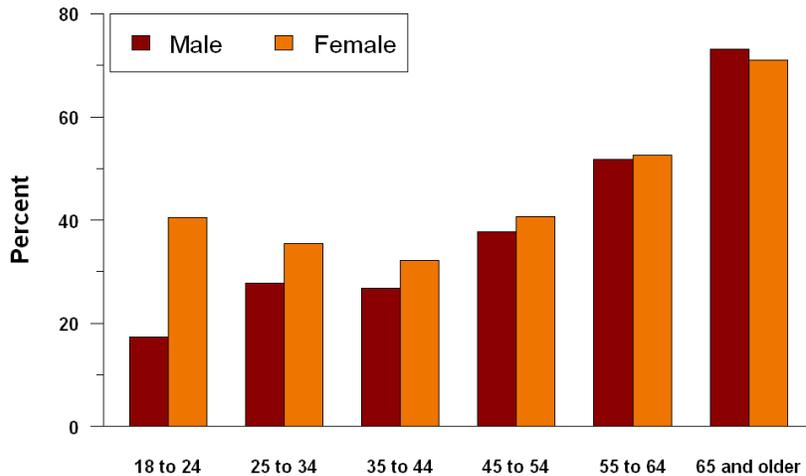
Flu is a highly contagious respiratory illness caused by the influenza virus. The disease is characterized by upper respiratory symptoms (runny nose, cough) as well as systemic symptoms (fever, all-body aches). Severity can range from mild to severe disease that can lead to death. The disease can be transmitted from person to person through respiratory secretions even before symptoms develop. The best way to prevent flu is by getting a flu vaccine every year [1].

*Flu vaccination coverage among adults in 2009 was 43% for those 18 years and older and 72% for those 65 years and older.*

Healthy People 2010 has set a goal of flu vaccination coverage of 90 percent for persons aged 65 years and older. Increasing vaccination coverage among persons who are younger than 65 years of age and have high-risk conditions is another national priority [2].

The 2009 BRFSS survey estimated that 43 percent of New Hampshire adults 18 years and older, and 72 percent of those aged 65 years and older, received a flu vaccine during the previous 12 months. Flu vaccination uptake in New Hampshire increases with age (Figure 1), and is comparable across income, education levels, and State regions. Vaccination was more common among women (46 percent) than men (39 percent) [3].

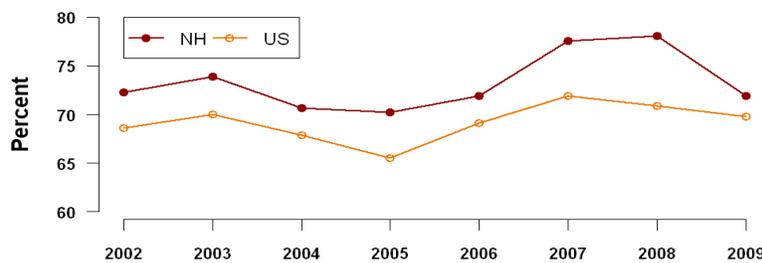
**Figure 1: Adults 18 Years and Older Who Have Received a Flu Vaccine Within the Past Year**



Source: NH BRFSS 2009 [3]

Flu vaccination among adults 65 years and older has been over 70 percent and stable in the past few years, comparable to national data (Figure 2). More work will be needed to reach the goal of 90 percent coverage in this age group.

**Figure 2: Adults 65 Years And Older Who Have Received a Flu Vaccine Within the Past Year**



Sources: NH BRFSS 2002-2009, CDC

Flu vaccination among adults with chronic medical conditions in New Hampshire ranges between 54 and 72 percent depending on the medical condition. Flu vaccination among adults with asthma, coronary heart disease, stroke, or heart attack was similar to national rates. Seventy percent of New Hampshire adults with diabetes were vaccinated, compared with 60 percent nationally [NH BRFSS 2009].

**References**

1. National Immunization Program, <http://www.cdc.gov/vaccines/>, accessed on 08/21/2008
2. Healthy people 2010, <http://www.healthypeople.gov/2010/Data/midcourse/>
3. Behavioral Risk Factor Surveillance System, <http://apps.nccd.cdc.gov/brfss/>

For more information about the flu and the flu vaccine visit [www.dhhs.nh.gov/dphs/cdcs/influenza/](http://www.dhhs.nh.gov/dphs/cdcs/influenza/).

# Community and Environment

## Air Pollution

The two most common outdoor air pollutants are ozone and fine particulate matter (PM 2.5). Both can produce adverse health effects in humans ranging from eye and throat irritation to exacerbation of lung disease and heart attacks. Some persons are more sensitive than others to pollutants. In New Hampshire, the two major sources of pollution are emissions from metropolitan areas south of New Hampshire and large power plants in the Midwest. Local residential woodstove use is also a major source of PM 2.5 pollution during winter, particularly in cities and towns located in river valleys. Weather plays a major role in determining how much ozone or PM 2.5 accumulates in the air.

*Levels of air pollution in NH are low, as measured by particulate matter and ozone.*

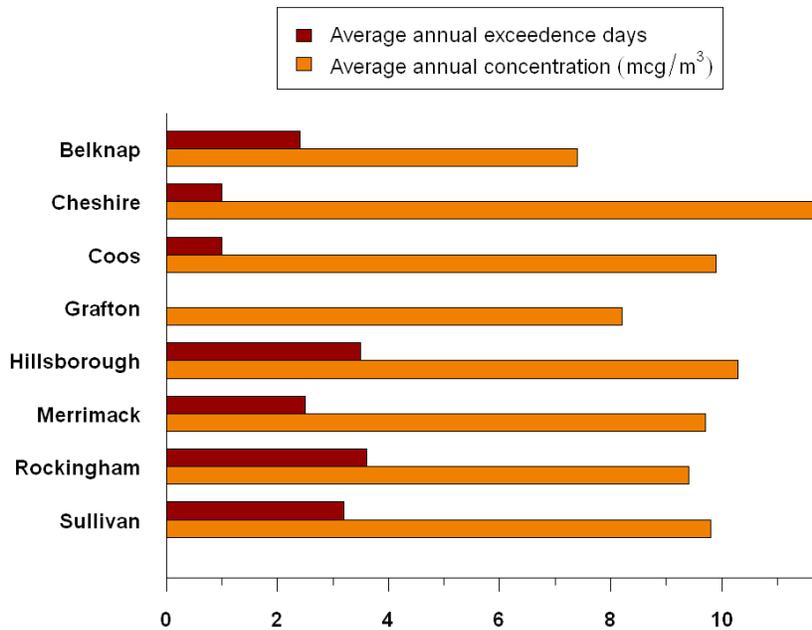
The New Hampshire Department of Environmental Services (DES) tracks air pollution with a network of 14 air quality monitors throughout the State. The data are used to assure compliance with national standards and to issue warnings to the public in cases of high levels of pollutants.

During the period from 2001 to 2006 (the most recent data available), the PM 2.5 level in New Hampshire exceeded the National Ambient Air Quality Standards 24-hour standard fewer than seven days per year, with no exceedence over the average annual standard (Figure 1). In 2006, the PM 2.5 level exceeded the standard only in Hillsborough County, for fewer than four days [1].

For more information on air quality in NH visit <http://des.nh.gov/organization/divisions/air/index.htm>.

HEALTH FACTORS

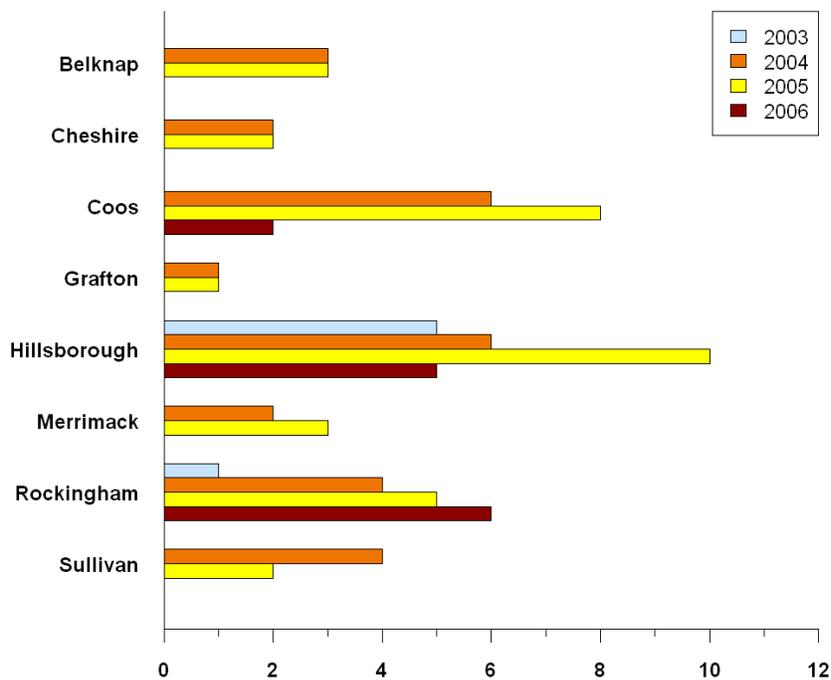
**Figure 1:** PM2.5 Exceedence Days and Concentrations by County, 2001-2006



Source: NH Environmental Health Data Integration Network (EHDIN)

Ozone levels in New Hampshire generally meet the standard. From 2003 to 2006 (the most recent data available), the highest numbers of exceedence days occurred in Hillsborough County (10 days), with only Rockingham County showing an increase over time (Figure 2).

**Figure 2:** Ozone Exceedence Days and Concentrations by County, 2003-2006



Source: NH Environmental Health Data Integration Network

#### Reference

1. New Hampshire Environmental Health Data Integration Network, <http://www.nh.gov/epht/ehdin/index.htm>.

## Radon

Radon is a radioactive gas arising from soil and bedrock that can seep into homes through cracks in the foundation. Radon has no color,

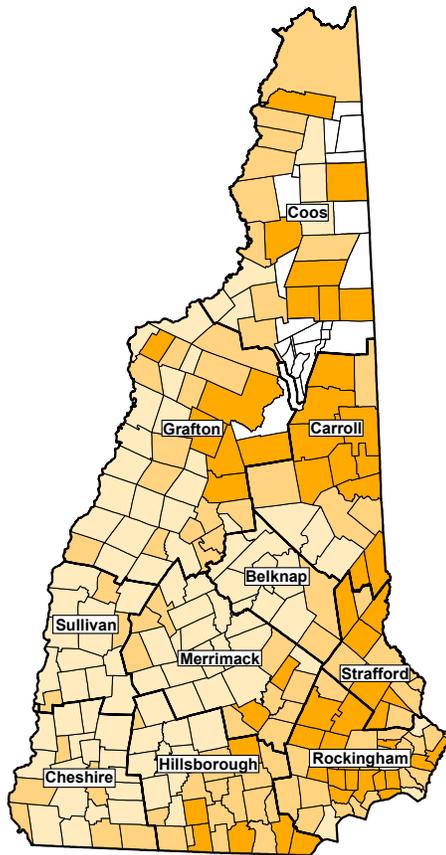
*Over 30% of NH homes that are tested for radon are found to have dangerous levels.*

odor or taste, making it difficult to detect without testing. Indoor exposure to radon gas is the second leading cause of lung cancer in the US after tobacco smoking and is the leading cause of lung cancer among non-smokers. The National Science Foundation estimates that radon accounts for 14 percent of all lung cancer deaths in the US [1].

As the "Granite State," New Hampshire has a higher than average radon exposure potential due to radioactive gas in the bedrock. The average level of indoor radon exposure is estimated to be 1.8 picocuries per liter (pCi/L) in New Hampshire homes compared with 1.25 pCi/L nationwide, and in many New Hampshire homes the level is much higher. A level of 4 pCi/L is considered dangerous and requires action to reduce the level to under 2 pCi/L. According to the BRFSS survey, only 50 percent of New Hampshire homes have been tested for radon. Of the nearly 25,000 homes tested from 1987 to 2009 through the State radon

*Radon can infiltrate the underground water supply exposing individuals to high levels through consumption of well water. NH DES recommends that owners of private wells test the radon level in their drinking water.*

**Figure 1: Percent of Tested Homes Above Radon Action Level**



Percent of tested homes in town with radon levels greater than 4.0 pCi/L



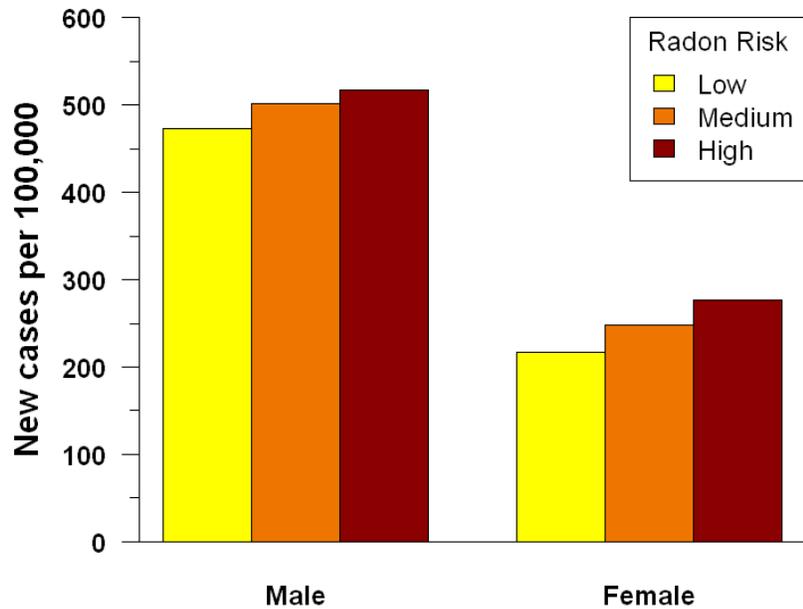
Source: NH DES

**For more information about radon testing in NH call (603) 271-6845 or visit <http://des.nh.gov/organization/divisions/air/pehb/ehs/radon/index.htm>**

program, over 30 percent were found to have dangerous radon levels. In some communities over 50 percent have dangerous levels (Figure 1).

An analysis of lung cancer rates based on residency shows a consistent association between the level of radon risk in the town and the incidence of lung cancer, particularly for females. The town grouping was based on the percentage of homes found to have elevated radon levels. Towns with more than 40 percent of tested homes with elevated levels were classified as high risk, towns between 20 and 40 percent were medium risk, and less than 20 percent constituted low risk (Figure 2).

**Figure 2: Lung Cancer Incidence (Age 65 and Over) by Radon Exposure Potential of NH Towns**



Source: NH Department of Environmental Services

The lung cancer rate for females aged 65 and older in high radon risk towns was 12 percent higher than in medium-risk towns and 28 percent higher than in low-risk towns. The difference in rates between the low-risk and other towns was statistically significant. The same trend, though not statistically significant, was seen in males.

About 250,000 New Hampshire homes have not been tested; many of these are likely to have dangerous radon levels. Long-term exposure to radon leads to an estimated 100 lung cancer deaths each year in New Hampshire that could be prevented with radon testing and mitigation strategies to reduce exposure.

**References**

1. Health Effects of Exposure to Radon: BEIR VI, 1999. U.S. Environmental Protection Agency, <http://www.epa.gov/radon/beirvi.html>

## Lead (Child and Adult)

Lead is an extremely poisonous heavy metal. Even small amounts of lead can build up in the body, causing lifelong learning and behavior

problems, and damage to the brain, kidneys, and nervous system. While no level of lead is safe, a blood lead level (BLL) of 10 micrograms per deciliter (mcg/dL) in children and 25 mcg/dL in adults is considered elevated.

*Lead poisoning continues to be a significant and preventable environmental health problem.*

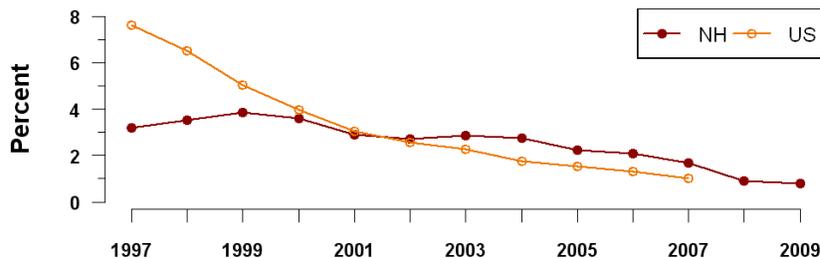
### Exposure in Children

Although lead-based paints were banned from use in housing in 1978, they remain the most important source of elevated blood lead levels in children. New Hampshire has some of the oldest housing stock in the country, with approximately 30 percent of housing being built prior to 1950 [1]. Children living in older houses are at increased risk for lead exposure. Deteriorating paint and paint disturbed during remodeling can produce lead dust and contaminate soil around a home. Young children are exposed by normal hand to mouth activity.

The rates of elevated BLL in New Hampshire children have declined in the past decade from 4 percent of children tested in 1999 to 0.8 percent of children tested in 2009, similar to the trend observed nationally [2], but lead exposure in children has not been eliminated (Figure 1). In 2009, 118 children under the age of six had a blood lead level of 10 mcg/dL or greater.

*Major strides have been made in the elimination of childhood lead exposure, but children continue to be exposed. Targeted screening of children most at risk is critical to eliminating lead poisoning.*

**Figure 1: Confirmed Elevated Blood Lead Levels as Percentage of Children Tested**



Source: New Hampshire Healthy Homes and Lead Poisoning Prevention Program, CDC National Center for Environmental Health

### Exposure in Adults

Most adult exposures are work related. Industries with the highest lead exposures include construction, mining, and manufacturing. During 2009, a total of 2,070 adults (age 16 and older) were tested, and 29 had a BLL of 25 or greater.

Certain industries or work environments where lead exposure is a problem require measures to keep workers from being exposed to lead. This includes complying with the Federal Occupational Safety and Health Administration's (OSHA) Lead Standards ([www.osha.gov](http://www.osha.gov)).

#### References:

1. US Census Bureau-US Census 2000, <http://www.census.gov/main/www/cen2000.html>
2. Centers for Disease Control and Prevention: CDC's National Surveillance Data (1997-2007), <http://www.cdc.gov/nceh/lead/data/national.htm>

**For more information about lead poisoning in NH, visit [www.dhhs.nh.gov/dphs/bchs/clpp](http://www.dhhs.nh.gov/dphs/bchs/clpp) or call (603) 271-4507.**

## Occupational Health

Currently, more than 700,000 individuals work in New Hampshire in over 44,000 workplaces. Each year thousands of these workers are injured or become ill as a result of exposures to health and safety hazards at work. These work-related events result in substantial human and economic costs, not only for workers and employers, but also for society as a whole. Workers' compensation claims alone in New Hampshire cost approximately \$200 million in 2007 [1].

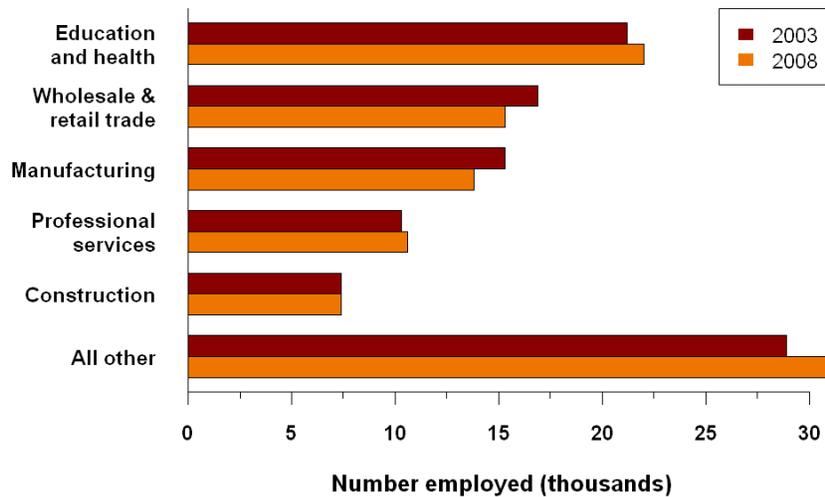
*92 people died in NH from work-related injuries in 2003-2009. More than 80 workers are hospitalized every day in NH due to work related injuries.*

*Work-related injuries and illnesses are preventable with effective control of occupational hazards.*

### Distribution of New Hampshire Workforce

The five industries employing the most workers in New Hampshire are education and health services, wholesale and retail trade, manufacturing, professional and business services, and construction (Figure 1).

**Figure 1:** Distribution of New Hampshire Workforce by Major Industry Sectors 2003 and 2008



Sources: US Bureau of Labor Statistics Current Population Survey, Geographic Profile of Employment and Unemployment

### Fatal Injuries at Work

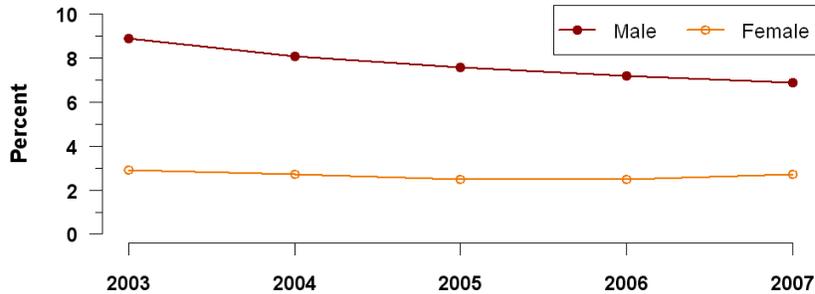
In the past seven years (2003–2009) 92 people died due to work in New Hampshire, all male. The industries with the highest fatality rate were construction, transportation, and manufacturing, and more than 85,000 New Hampshire workers are employed in those industries. The most common death causes were falls, injury from equipment or chemicals, and highway accidents [2].

### Work-Related Hospitalizations

More than 10 percent of New Hampshire workers have a work-related injury severe enough to require treatment in a hospital. This results in over 80 hospitalizations for work-related injuries a day and hospital charges that exceed \$39 million annually. There are approximately 150 cases per year of work-related chemical-substance exposures in New Hampshire.

Work-related hospitalization has been decreasing for men, based on workers' compensation claims, due in part to the decline in employment in the manufacturing sector (Figure 2). Hospitalization rates for women have always been lower compared with men and have remained stable in the past few years.

**Figure 2:** Percent of NH Employees with Hospital Discharges Paid for by Workers' Compensation



Source: NH hospital discharge data

Note: Data includes combined emergency and inpatient discharges for New Hampshire residents only

### Injury Versus Illness

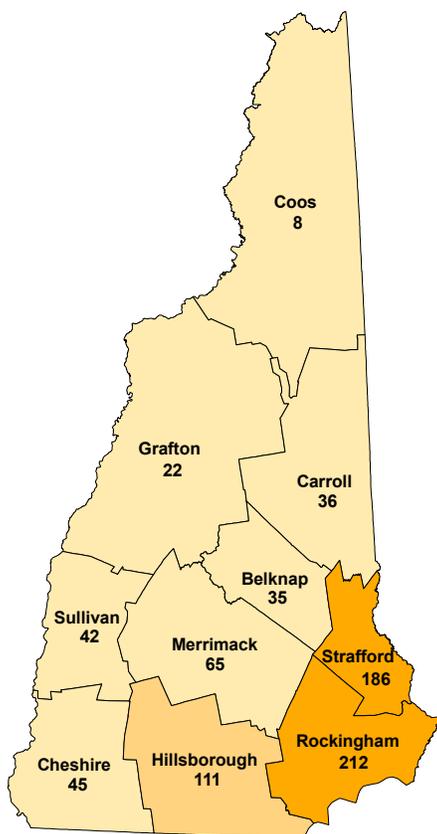
It is important to note that tracking injuries due to work is easier than tracking work-related illnesses that may occur years after exposure, although under-reporting of both has been well documented [3,4,5]. There are currently no good data to shed light on work-related illnesses in New Hampshire, which is essential to reducing health risks at work. Documenting occupational information as part of every health assessment will help build the knowledge that can then serve as the basis for prevention efforts.

#### References:

1. Sengupta, IN., Reno V, Burton JF., Workers Compensation: Benefits, Coverage, and Costs, 2007. August 2009, National Academy of Social Insurance.
2. Fatal occupational injuries by occupation and event or exposure, New Hampshire, 2003 to 2009. Preliminary Results. U.S. Department of Labor, Bureau of Labor Statistics.
3. Rosenman KD, Kalush A, Reilly MJ, Gardiner JC, Reeves M, Luo Z.: How much work-related injury and illness is missed by the current national surveillance system? *J Occup Environ Med* 2006;48:357–65.
4. Azaroff LS, Levenstein C, Wegman DH.: Occupational injury and illness surveillance: conceptual filters explain underreporting. *Am J Public Health* 2002;92:1421--9.
5. US House of Representatives, Committee on Education and Labor. *Hidden Tragedy: Underreporting of Workplace Injuries and Illnesses*. June 2008.

For more information about the Occupational Health Surveillance Program visit [www.dhhs.nh.gov/dphs/hsdm/ohs/index.htm](http://www.dhhs.nh.gov/dphs/hsdm/ohs/index.htm) or call (603) 271-8425.

**Figure 2: Lyme Disease Case Counts and Incidence Rates, 2008-2009**



Statistical comparison to statewide estimate

- Significantly lower
- No significant difference
- Significantly higher

Note: Data include both confirmed and probable cases.

Source: DHHS Infectious Disease Surveillance Section

*NH has one of the highest rates of Lyme disease in the US.*

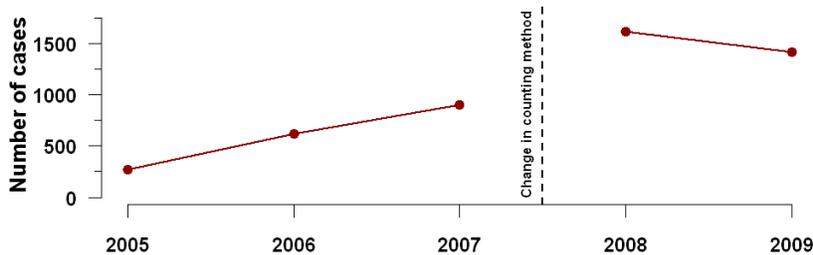
## Lyme

Lyme disease is caused by a bacterium that is transmitted to humans by the bite of an infected deer tick. Early symptoms of the disease may include rash, fever, headache, fatigue, stiff neck, and muscle or joint pain. If not treated, complications such as nervous system disorders, heart abnormalities, and intermittent episodes of joint swelling and pain may occur. Early diagnosis with appropriate antibiotic treatment cures Lyme disease.

The risk of becoming sick with Lyme disease is related to the abundance of infected ticks in the area. People who spend time outdoors, including in the back yard, for either hobbies or work are at risk of contracting Lyme disease. Deer ticks are active from May to mid-November. Early in the season (May to July) deer ticks are very small (about the size of a pinhead), making them very difficult to detect. Removal of ticks within 24 hours of attachment can prevent the disease.

The number of New Hampshire residents diagnosed with Lyme disease has increased over the past 10 years with a significant increase

**Figure 1: Lyme Disease Case Counts, 2005–2009**



Note: Data for 2005-2007 include only confirmed cases; data for 2008-2009 include both confirmed and probable cases

Source: NH DHHS Infectious Disease Surveillance Section

since 2005 (Figure 1).

In 2009, 1,417 cases of Lyme disease were reported in New Hampshire residents, a rate of 108 cases per 100,000 persons. The New Hampshire rate is well above the Healthy People 2010 objective of 9.7 new cases per 100,000 persons; in 2008, New Hampshire had the highest rate of Lyme disease in the US and the second highest in 2009 [1,2].

The highest rates of disease in 2008–2009 occurred in Rockingham, Strafford, and Hillsborough counties (Figure 2).

Since 2007 DHHS has conducted surveillance for bacteria in deer ticks. In counties with high Lyme incidence, more than 50 percent of ticks tested are infected.

### References:

1. CDC, [http://www.cdc.gov/ncidod/dvbid/lyme/ld\\_rptdLymeCasesbyState.htm](http://www.cdc.gov/ncidod/dvbid/lyme/ld_rptdLymeCasesbyState.htm)
2. CDC, [http://www.cdc.gov/ncidod/dvbid/lyme/ld\\_IncidenceRatesbyState20052009.htm](http://www.cdc.gov/ncidod/dvbid/lyme/ld_IncidenceRatesbyState20052009.htm)

**For more information about Lyme disease visit [www.dhhs.nh.gov/dphs/cdcs/lyme/index.htm](http://www.dhhs.nh.gov/dphs/cdcs/lyme/index.htm). To report Lyme disease cases call 603-271-4496.**

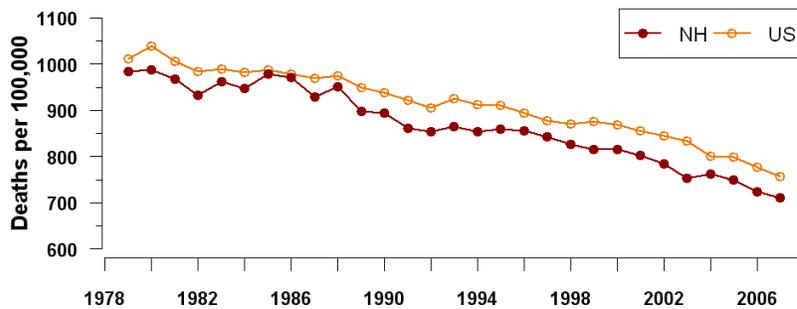
# Mortality

## Death Rate

In 2007, the age-adjusted death rate in New Hampshire reached a record low of 711 deaths per 100,000 population, comparing favorably with the US rate of 757 per 100,000 (Figure 1). New Hampshire death rates have been steadily declining and consistently lower than the US.

*New Hampshire's death rate is lower than the national rate, and has been declining in the past three decades.*

**Figure 1:** Age-Adjusted Mortality Rates, 1979–2007



Sources: New Hampshire Vital Records Administration, National Center for Health Statistics

For the five-year period from 2003–2007, the most recent for which national data are available, the New Hampshire death rate was 736 per 100,000 compared with 789 for the US. The death rate for males (869 per 100,000) was much higher than for females (634 per 100,000), similar to national gender differences (943 vs. 668 per 100,000). Although males comprised 49 percent of the State’s population, they accounted for 60 percent of deaths in persons younger than 75 years. Much of this difference is due to the higher rates of male death at younger ages from external causes, such as accidents. Given that New Hampshire’s population is predominantly White, the effect of race on mortality rate is hard to delineate.

Geographic disparities exist across the State, with Coos (837) and Belknap (769) Counties having death rates significantly exceeding the State rate. Rockingham County, with 716 deaths per 100,000, is significantly lower (Figure 2).

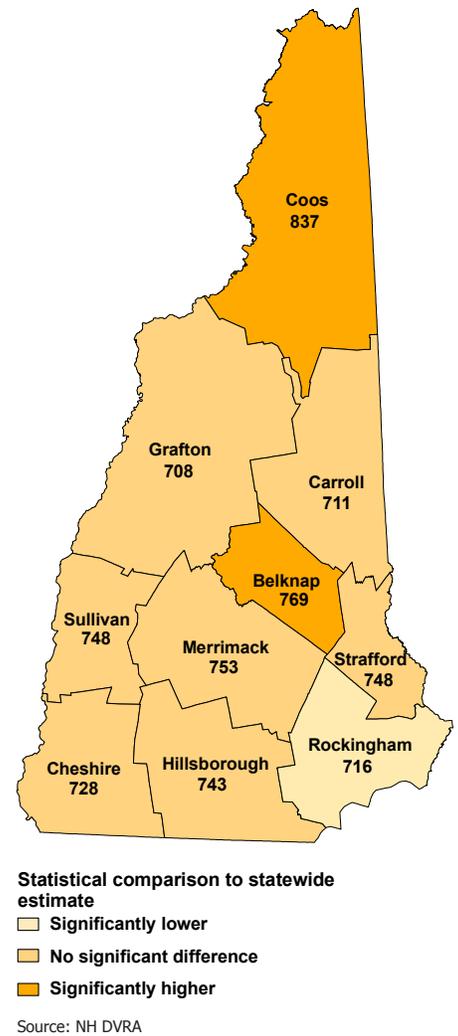
### Leading Causes of Death

Between 2003 and 2007, heart disease and cancer accounted for more than half of the 50,279 deaths of New Hampshire residents. Two-thirds of all deaths were due to the five leading causes and nearly 80 percent by the top ten causes (Figure 3).

Leading causes of death also differ by age. During the period 2003–2007, accidents were the leading cause of death for persons between ages 1–44 (Figure 4), while in older age groups chronic diseases such as cancer and heart disease were the leading causes (Figure 5).

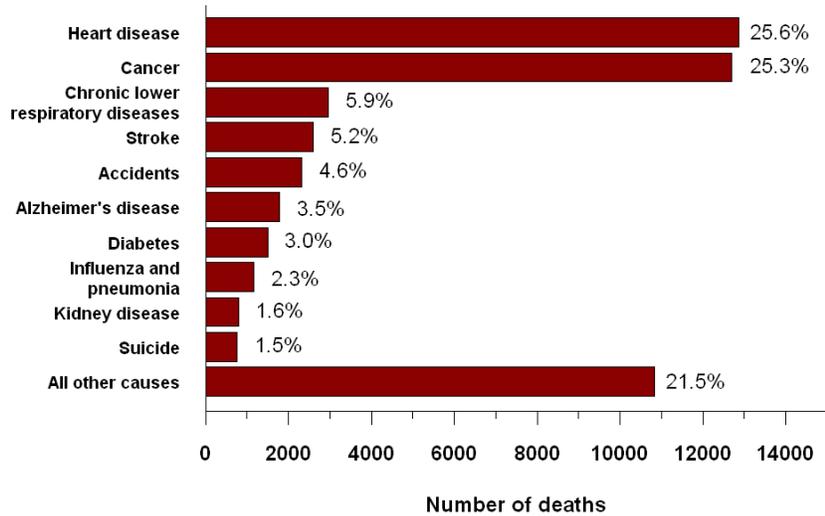
Information regarding infant (less than one year old) mortality can be found on page 55.

**Figure 2:** Death Rates per 100,000, 2003–2007



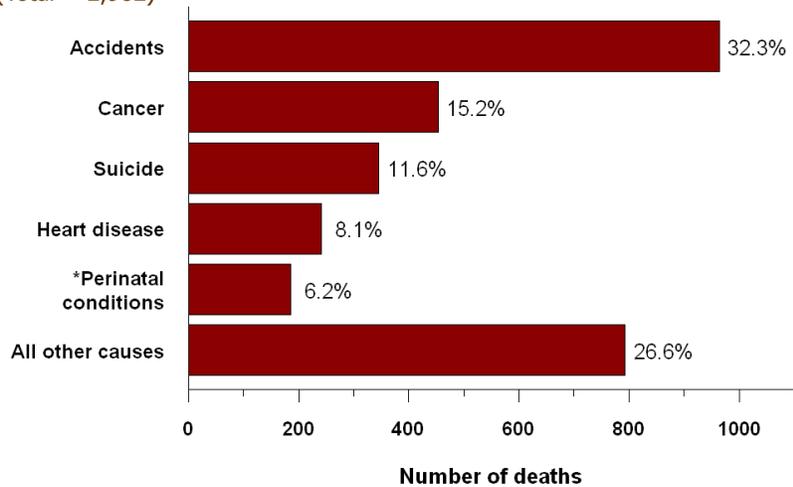
*The three leading causes of premature death in NH are cancer, accidents, and heart disease.*

**Figure 3: Leading Causes of Death, 2003–2007 (Total = 50,279)**



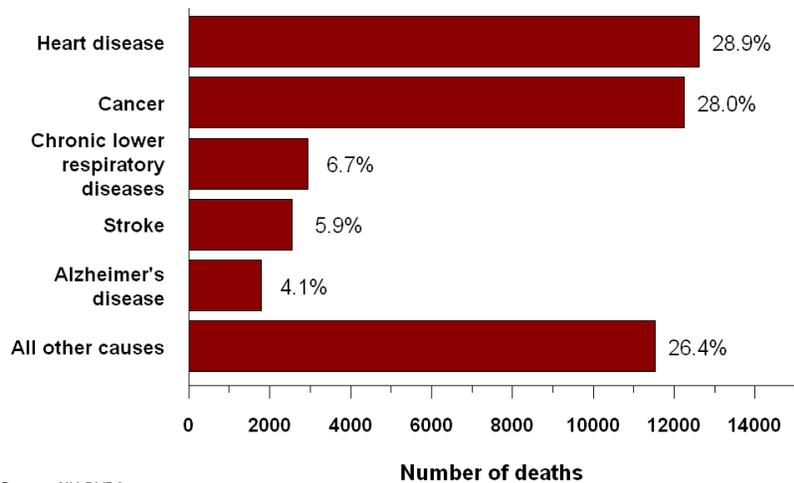
Source: NH DVRA

**Figure 4: Leading Causes of Death, Ages 1–44 Years, 2003–2007 (Total = 2,982)**



\* Originating between 20th week of gestation and 28 days following birth  
Source: NH DVRA

**Figure 5: Leading Causes of Death, Ages 45 Years and Older, 2003–2007 (Total = 43,681)**



Source: NH DVRA

*Eight of the top 10 causes of death are related to individuals' modifiable lifestyle and behavior [3].*

## Years of Potential Life Lost

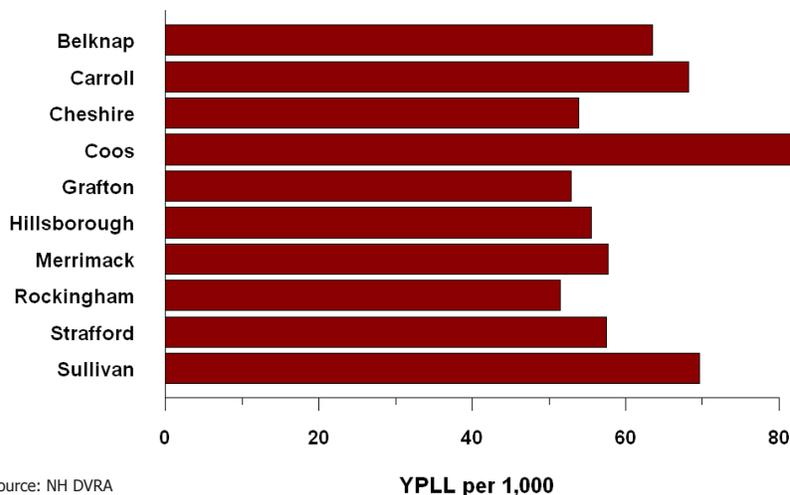
A common measure of premature death in a population is years of potential life lost (YPLL), which takes into account age at the time of death. YPLL is calculated assuming a life expectancy of 75 years. For each person who died prematurely, the age at death is subtracted from 75; for example, a person dying at age 50 would contribute 25 years of potential life lost. The total years of potential life lost in the population is then divided by the size of the population under age 75.

In New Hampshire during the period 2003–2007, the YPLL rate was 53 years per 1,000 persons under age 75. Since males tend to die at younger ages than females, their YPLL rate is much higher (70 compared with 43 per 1,000). No national data are available for comparison.

The leading cause of potential life lost is cancer, with approximately 15 years of potential life lost per 1,000 residents. Cancer is followed by accidents (9 YPLL per 1,000) and heart disease (8 YPLL per 1,000).

Geographic disparities in YPLL exist, with Coos (82 YPLL per 1,000) and Sullivan (70) Counties having the highest YPLL rates, and Rockingham County having the lowest (51 per 1,000) (Figure 6).

Figure 6: Years of Potential Life Lost Rate by County, 2003-2007



Source: NH DVRA

## Life Expectancy

The basic measure of a population's health is life expectancy, the number of expected years of life at a given age. In 2007, life expectancy at birth in New Hampshire reached an all-time high of 78 years [1] compared with only 47 years in 1900 for the US [2]. Women generally live longer than men; life expectancy at birth in New Hampshire in 2007 was 80 years for women and 75 years for men. Men who reach age 65 have an additional 17 years life expectancy, while women who reach 65 can expect 20 additional years [3].

References:

1. Xu JQ, et al., Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010.
2. Kinsella KG. Changes in life expectancy 1900-1990. American Journal of Clinical Nutrition 55: 1196-1202, 1992.
3. Goodarz D. et al., The Promise of Prevention: The Effects of Four Preventable Risk Factors on National Life Expectancy and Life Expectancy Disparities by Race and County in the US. PLoS Medicine 7, 2010.

## Low Birth Weight and Infant Mortality

### Low Birth Weight

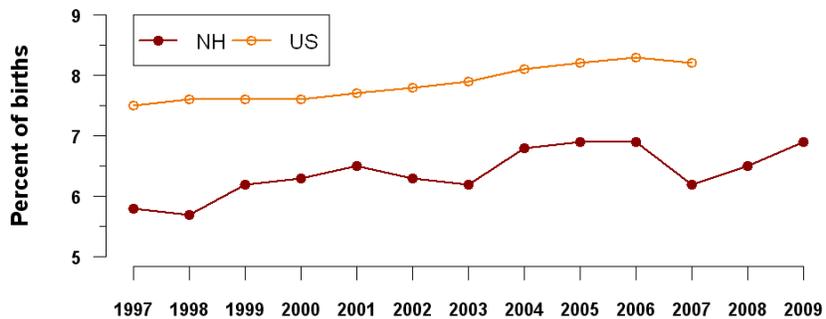
Low birth weight (LBW), defined as a birth weight of less than 2500 grams (5.5

pounds), is a strong predictor of infant health and a risk factor for infant mortality. LBW infants are very vulnerable and could have difficulties with eating, gaining weight, controlling their temperature, and fighting infections. The mortality of LBW infants has decreased due to advances in newborn intensive care, but these infants are still at risk for serious health and developmental complications and life-long disabilities.

In 2009, 6.9 percent of all live births (923 infants) in New Hampshire met the definition of LBW. This rate has been stable in recent years and consistently lower than national rates (Figure 1) [1]. There are no significant regional differences in the State.

*Low birth weight and infant mortality rates have been consistently low in NH compared with the US.*

**Figure 1:** Low Weight Births, 1997-2009



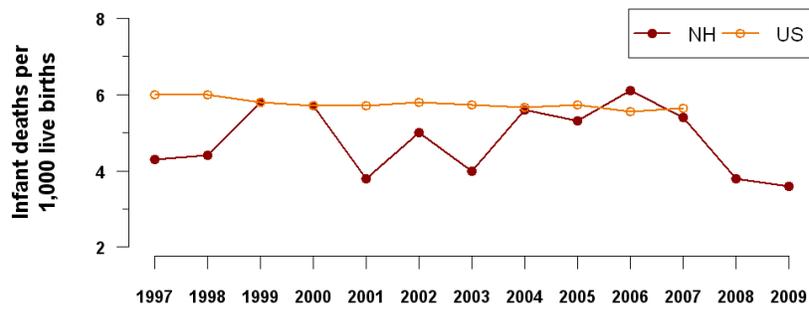
Sources: NH DVRA NH Maternal and Child Health Section, NCHS, March of Dimes

### Infant Mortality

Infant mortality is considered a barometer of the health of a state or country. The leading causes of infant mortality are congenital malformations (birth defects), complications during pregnancy or delivery (including preterm birth before 37 weeks of gestation), and sudden infant death syndrome (SIDS). SIDS is the leading cause of death between one month and one year of age.

The infant mortality rate is defined as the rate of deaths during the first year of life per 1,000 live births. Overall, the infant mortality rate in New Hampshire has been consistently low and among the best in the country: 5.4 per 1000 births in New Hampshire in 2007 compared with 6.8 in the US [2]. When only White population rates are compared the difference lessens; the New Hampshire rate was 5.3 compared with 5.6 nationally in 2007 (Figure 2) [2]. Based on preliminary data, the State infant death rate has decreased since 2006, but national data are not available for comparison yet.

Despite the overall low infant mortality rate, specific population groups in New Hampshire are at higher risk. Adolescents, younger

**Figure 2: Infant Mortality, 1997-2009**

Sources: NH DHHS Maternal and Child Health section, National Center for Health Statistics  
 Notes: Data for 2008 and 2009 are preliminary, data for US include White race only

adults, and low-income women covered by Medicaid are less likely to have adequate prenatal care and more likely to smoke during pregnancy compared with women in other age groups or insurance categories. These factors increase the risk of less favorable birth outcomes, including infant death, and delineate the areas for prevention efforts. See further details in “Teen Births” page 34 and “Tobacco Use” pages 22–23.

#### References

1. National Center for Health Statistics, final natality data accessed through [www.marchofdimes.com/peristats](http://www.marchofdimes.com/peristats)
2. CDC WISQARS query system, <http://www.cdc.gov/injury/wisqars/index.html>

## Mental Health

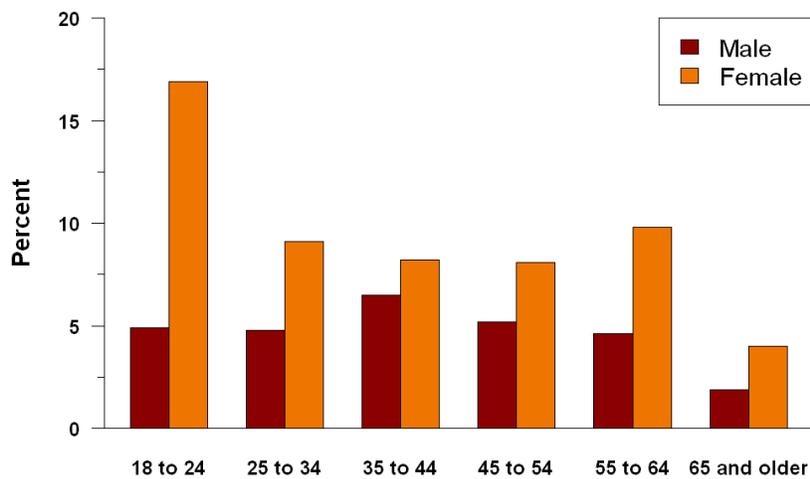
Mental health is defined as “the successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity” [1]. Mental illnesses are treatable disorders of the brain that arise from genetic and environmental factors.

*7% of adults in NH report current symptoms of depression and 17% report having depression at some point in their life.*

In New Hampshire, there is evidence that a substantial number of residents have experienced mental illness at some time in their lives. In 2006, the BRFSS survey found that 7 percent of adults reported current symptoms of depression and 17 percent reported being told they had depression by a health care provider at some point in their life.

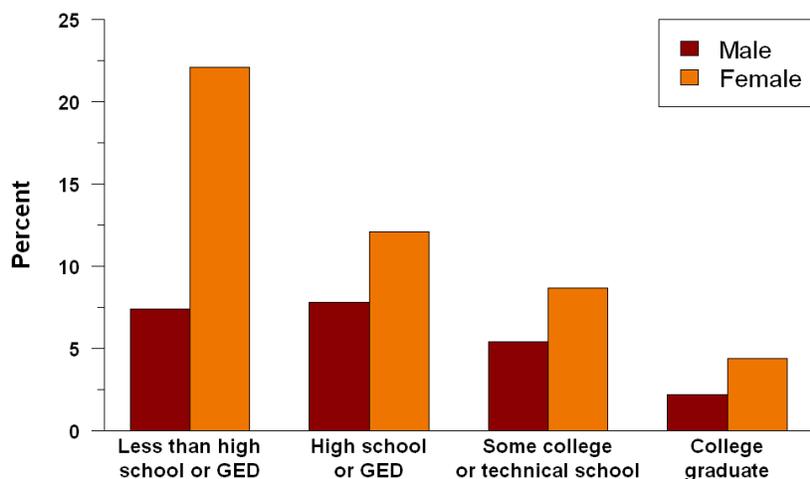
The prevalence of current depression was higher among younger females (Figure 1), among those with lower education (Figure 2) and income levels (Figure 3), and among adults who were out of work or unable to work (Figure 4).

**Figure 1:** Current Depression by Age Group and Gender, 2006



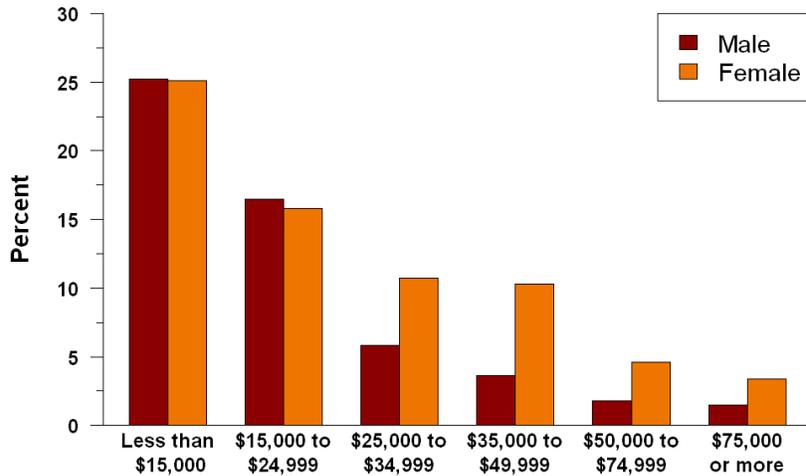
Source: NH BRFSS

**Figure 2:** Current Depression by Education and Gender, 2006



Source: NH BRFSS

**Figure 3:** Current Depression by Income and Gender, 2006

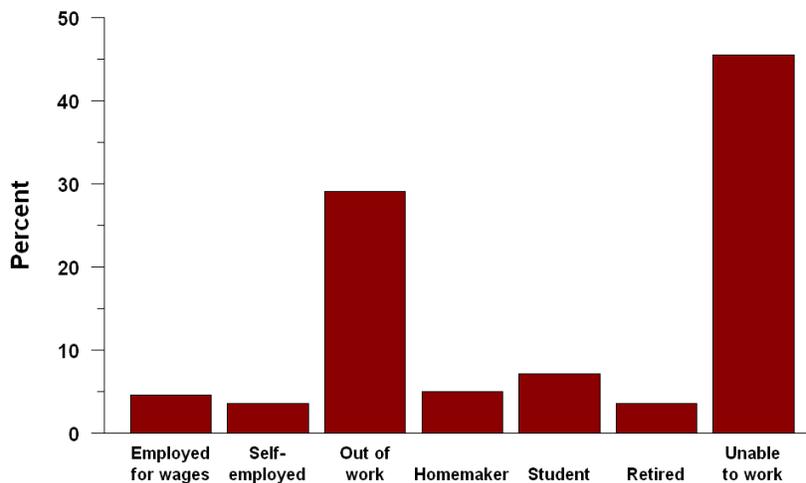


Source: NH BRFSS

*Mental illnesses are disorders of the brain that, if left untreated, are among the most disabling diseases.*

*Treatment is available and can significantly improve the quality of life for people with mental illness.*

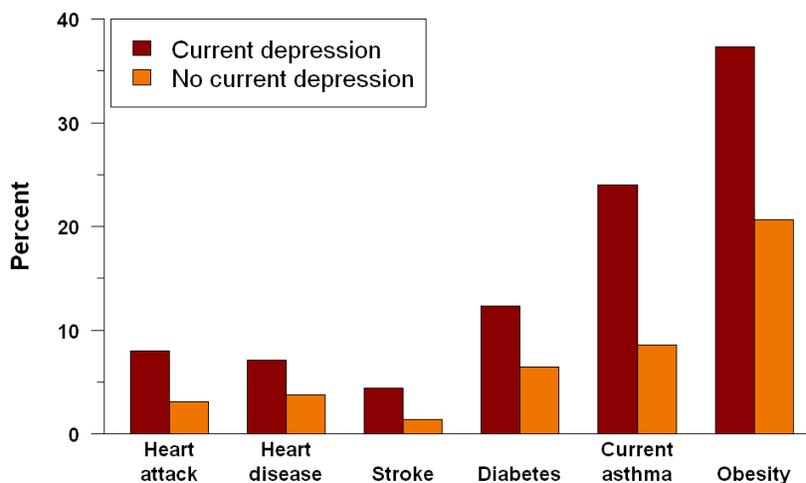
**Figure 4:** Current Depression by Occupation, 2006



Source: NH BRFSS

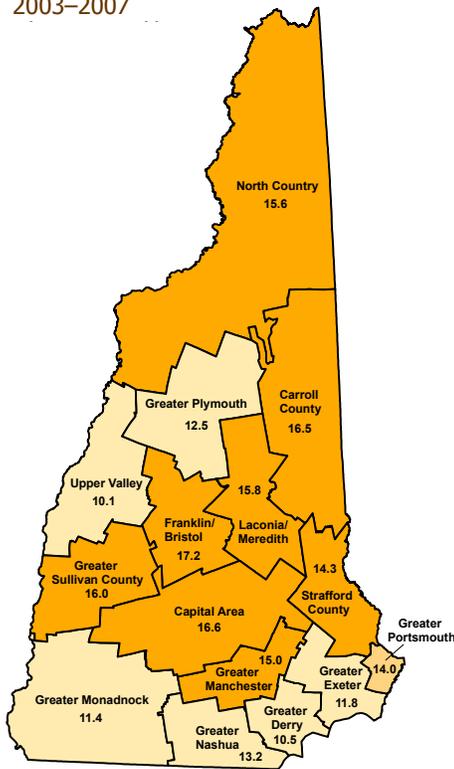
Adults with symptoms of depression had a higher prevalence of other chronic conditions such as diabetes, heart disease, current asthma, and obesity (Figure 5). They were more likely to be smokers and less physically active but did not have higher rates of alcohol abuse (Figure 6).

**Figure 5:** Prevalence of Chronic Health Conditions by Current Depression Status, 2006

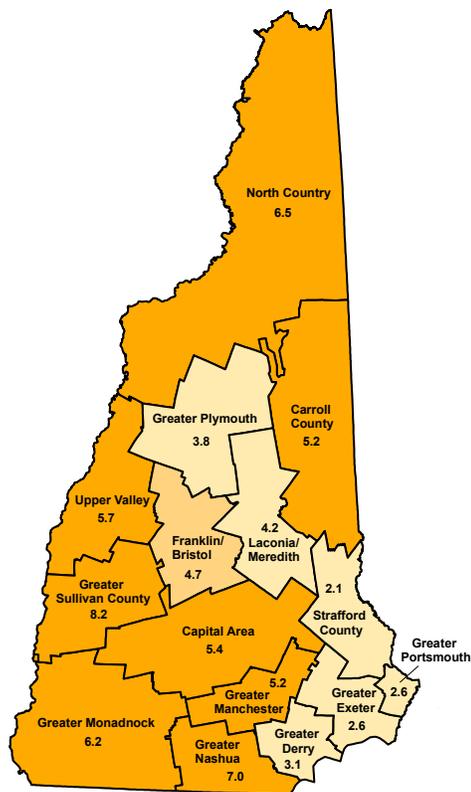


Source: NH BRFSS

**Figure 8:** Hospital Emergency Discharges for Mental Illness Related Conditions, 2003–2007



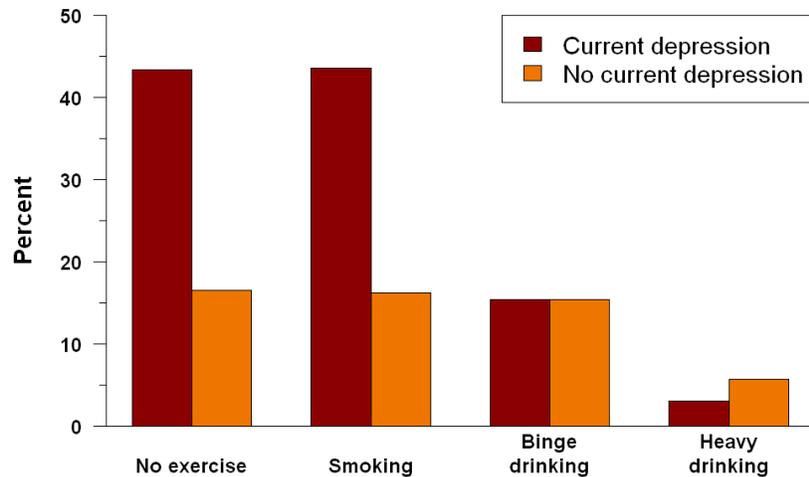
**Figure 9:** Hospital Inpatient Discharges for Mental Illness-Related Conditions, 2003-2007



**Statistical comparison to statewide estimate**  
 Significantly lower  
 No significant difference  
 Significantly higher

Source: NH hospital discharge data

**Figure 6:** Prevalence of Health Risk Behaviors by Current Depression Status, 2006

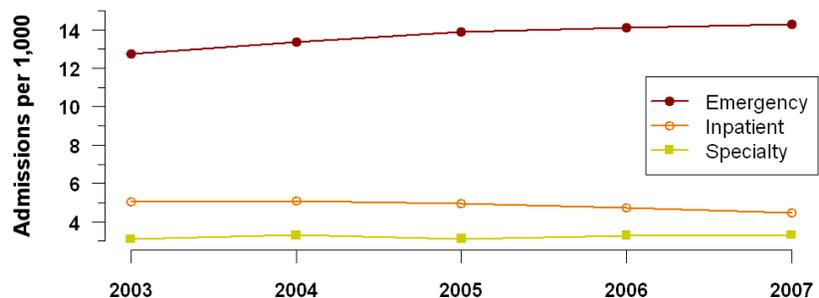


Source: NH BRFSS

Adults with depression were also more likely to be uninsured and to report avoiding needed medical care in the past year due to cost compared with adults without current depression.

The direct and indirect costs of mental illness are estimated to be in the tens of billions of dollars nationally [1]. The impact of mental illness on New Hampshire’s medical system is substantial. Between 2003 and 2007, mental illness–related conditions were among the top ten reasons for both inpatient and emergency department admissions. On average over the five years, about 6,900 emergency department admissions and 4,000 inpatient admissions per year were related to mental illness or substance abuse. Over time, the rate of mental health related visits to emergency departments has increased but with no associated increase in inpatient hospital admissions, which actually declined during this period (Figure 7).

**Figure 7:** Hospital Discharges for Mental Illness-Related Conditions



Source: NH hospital discharge data

Significant variation exists among public health regions in regard to emergency department visits for mental health (Figure 8) and inpatient admissions (Figure 9).

**References**

1. US DHHS. Mental Health: A Report of the Surgeon General—Executive Summary. Rockville, MD: US DHHS, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institutes of Health, National Institute of Mental Health, 1999.

## Youth Suicide Rate

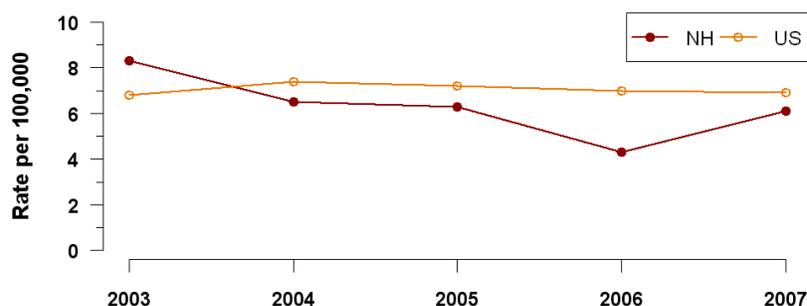
Many factors can increase a person's risk for suicide, including a history of mental illness, previous suicide attempts, drug and alcohol abuse, a history of trauma or abuse, physical health problems, social isolation, and access to lethal means. In New Hampshire, suicide is the second leading cause of death for people ages 15–24 and the fourth leading cause of death for those aged 10–14 years. The estimated cost of acute care for adult and youth suicide attempts in the State was estimated at \$14.2 million in 2007, not including outpatient care.

Based on the most recent available data (2003–2007), the rate of youth suicide has been stable and similar to national data (Figure 1) [1]. No significant regional differences are seen in the State.

Females are more likely to attempt suicide, but males are more

*In NH, suicide is the second leading cause of death for people age 15–24 years. Approximately 5% of NH youth attempt suicide.*

**Figure 1:** Youth Suicide, Death Rate, 2003-2007



Sources: NH DVRA, CDC WISQARS

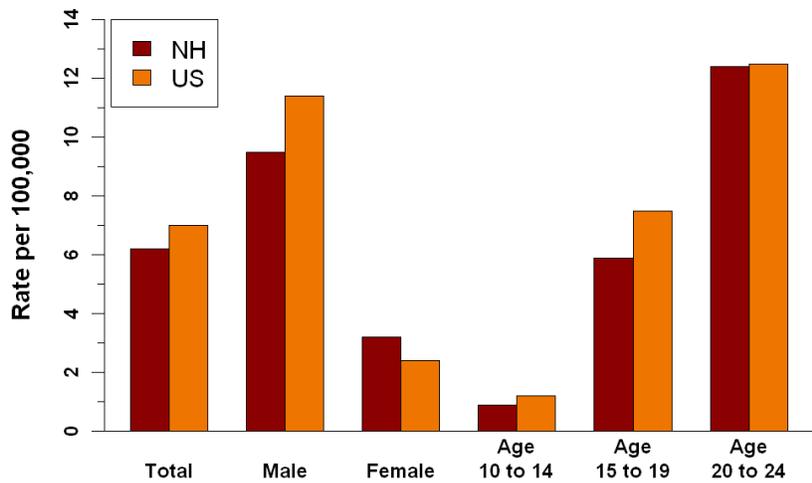
likely to succeed since males tend to use more lethal means (Figure 2). About 5.1 percent of female youth and 4.2 percent of male youth attempt suicide, according to the 2009 YRBS.

By age group, the highest risk for suicide is in 20- to 24-year olds, whose rate (approximately 12 per 100,000) is significantly higher than the total youth suicide rate (approximately 7 per 100,000). This is consistent with national data (Figure 2) [1].

The two leading suicide methods in New Hampshire and nationally are hanging (asphyxiation) and firearm wounds (Figure 3). Poisoning follows these and has been increasing as a method of suicide among youth and young adults.

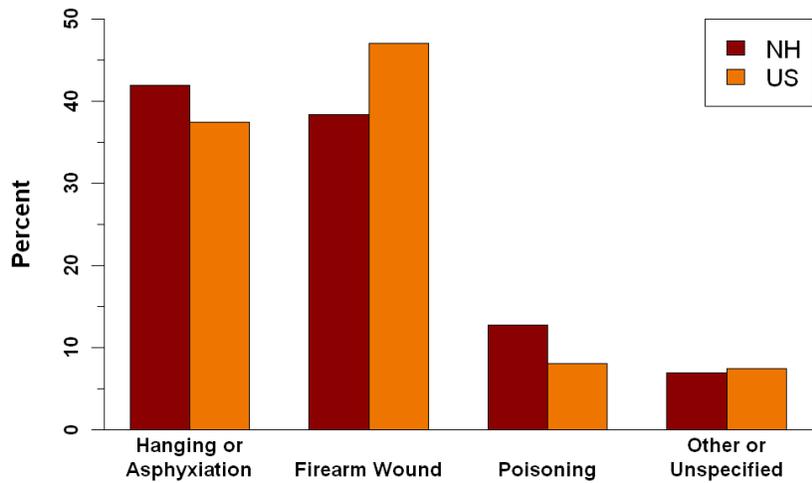
*In most suicide attempts, there are warning signs. These include change in personality, loss of interest in most activities, feelings of hopeless or helplessness, etc. Linking the person in need to available help at the first warning signs could save lives.*

**Figure 2:** Youth Suicide, Death Rate by Demographic, 2003-2007



Sources: NH DVRA, CDC WISQARS

**Figure 3:** Methods of Youth Suicides, US, 2003-2007



Sources: NH DVRA, CDC WISQARS

Reference

1. CDC WISQARS, Fatal Injury Data, <http://www.cdc.gov/injury/wisqars/index.html>

For more information on suicide prevention in NH visit the Suicide Prevention Resource Center at [www.sprc.org/stateinformation/statepages/showstate.asp?stateID=29](http://www.sprc.org/stateinformation/statepages/showstate.asp?stateID=29) or call 603-271-4402.

## Healthy Days

A common measure of the overall health of a population is the percentage of people reporting health problems (physical or mental) severe enough to keep them from daily activities for more than 14 days during the previous month.

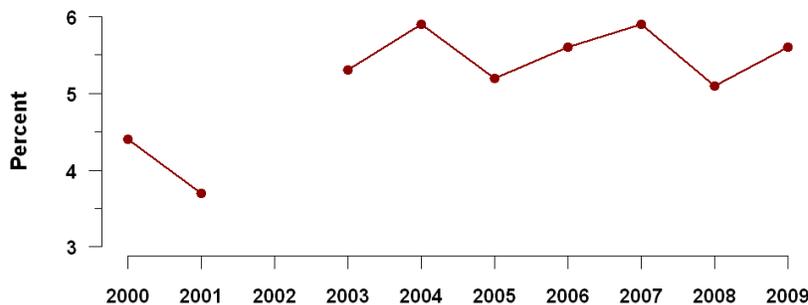
*Between 50,000 and 65,000 NH adults report substantial limitation in daily activities due to either physical or mental health problems.*

According to the 2009 BRFSS survey, 5.6 percent of the adult population in New Hampshire (about 50,000 to 65,000 persons) were limited in their daily activities in the past month (14 or more days) due to poor physical health, poor mental health, or both. This has been stable since 2001; no national data are available for comparison (Figure 1).

Increasing age, lower income, and lower education were all associated with higher percentages of persons having to limit their activities due to poor health (Figures 2, 3, and 4). No differences were seen between males and females.

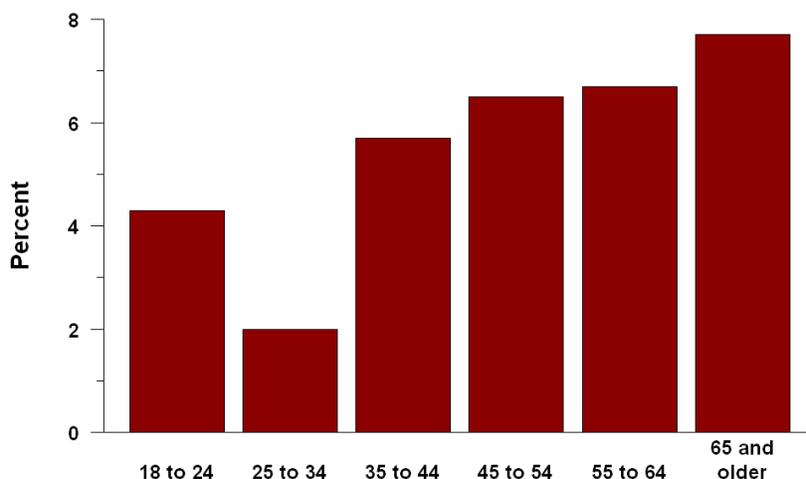
Different chronic conditions were also found to impact activity to varying degrees. For example, nearly 25 percent of those with chronic obstructive pulmonary disease (COPD) reported limited activity in the previous month, and 15 percent of adults with diabetes reported the same limitation (Figure 5).

**Figure 1:** Limited in Daily Activities Due to Poor Physical or Mental Health, 2009



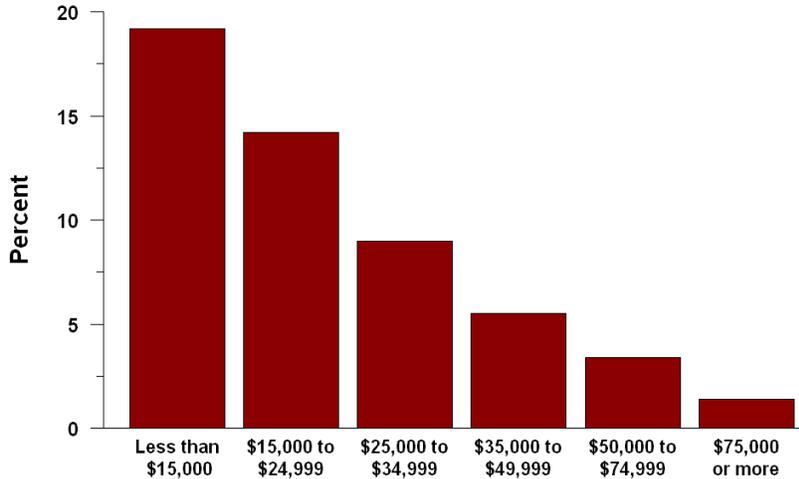
Source: NH BRFSS

**Figure 2:** Limited in Daily Activities Due to Poor Physical or Mental Health by Age Group, 2009



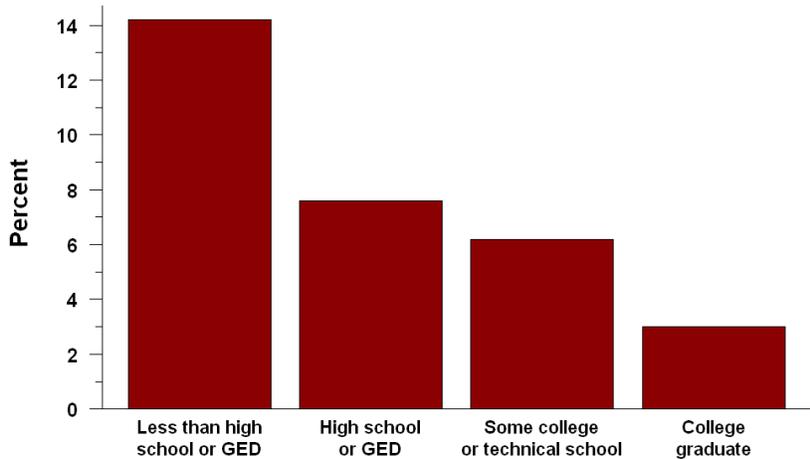
Source: NH BRFSS

**Figure 3:** Limited in Daily Activities Due to Poor Physical or Mental Health by Income, 2009



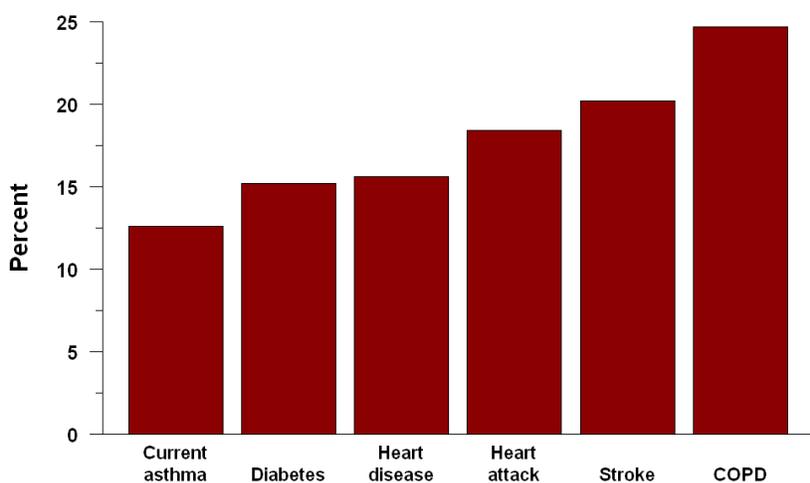
Source: NH BRFSS

**Figure 4:** Limited in Daily Activities Due to Poor Physical or Mental Health by Education, 2009



Source: NH BRFSS

**Figure 5:** Limited in Daily Activities Due to Poor Physical or Mental Health by Chronic Condition, 2009



Source: NH BRFSS

## Cancer

Cancer is a group of diseases in which abnormal cells divide uncontrollably and often

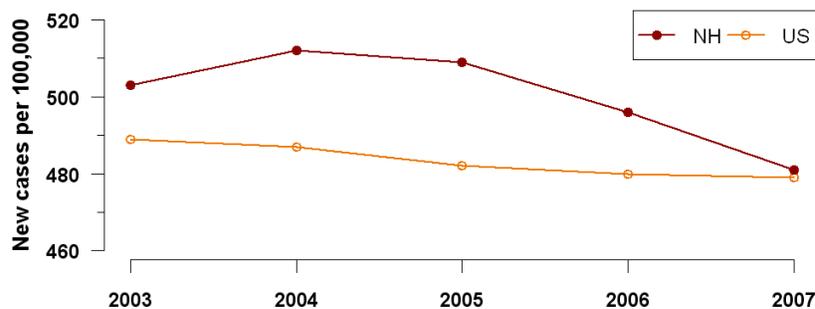
invade other tissues. Cancer was once believed to be a single disease, but we now know that it is much more complex. By current estimates, approximately one in two men and one in three women, more than 40 percent of the US population, will develop cancer at some point in their lives [1], making this a highly important cause of illness.

In New Hampshire, each year approximately 7,000 new cases of cancer are diagnosed and 2,600 deaths from cancer occur. This amounts to approximately 20 new diagnoses and 7 deaths per day. In addition to the human toll of cancer, the economic costs are substantial. The estimated overall cost, both direct and indirect, of cancer in 2008 in New Hampshire was \$1.1 billion.

New Hampshire has made some strides against cancer. According to the most recent national data, the incidence rate declined by an average of 1.5 percent per year between 2003 and 2007. The New Hampshire rate, after being higher for years, matched the national rate in 2007 (Figure 1). The mortality rate decreased by an average of 1.7 percent per year (Figure 2), similar to national rates. National rates quoted in this report are those for White Non-Hispanics, who comprise 95 percent of New Hampshire's population and account for about 98 percent of new cancer diagnoses.

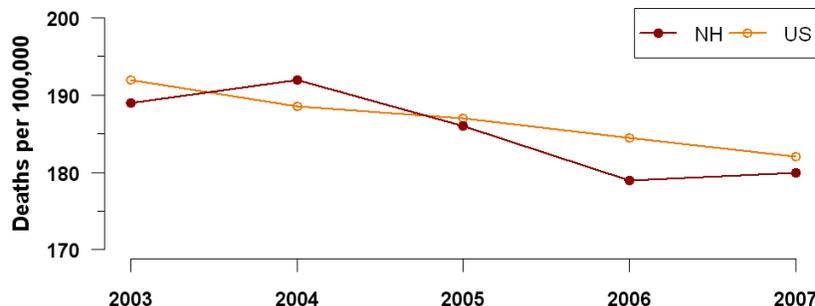
*Cancer has overtaken heart disease as the leading cause of death in NH.*

**Figure 1:** Incidence Rates for All Cancers, 2003-2007



Sources: NH State Cancer Registry, SEER  
Notes: Rates are age-adjusted. US rates are for White Non-Hispanics.

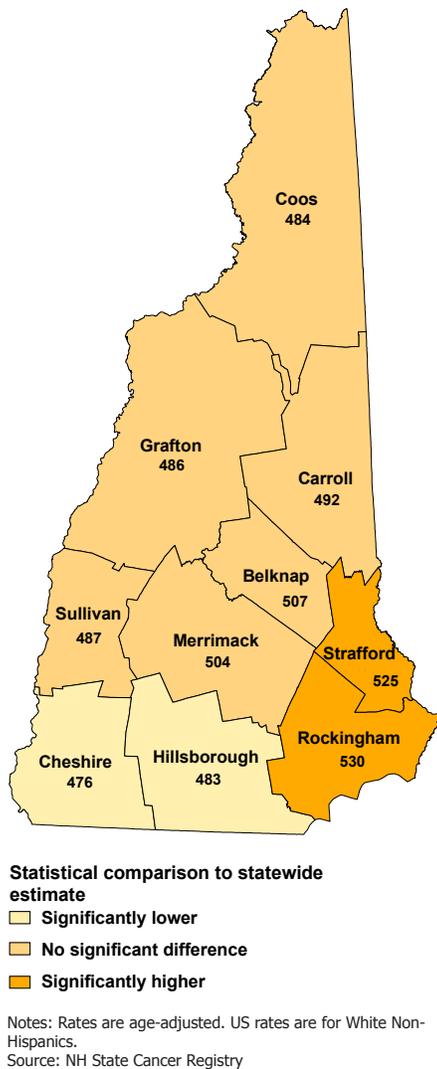
**Figure 2:** Mortality Rates for All Cancers, 2003-2007



Sources: NH DVRA, SEER  
Note: Rates are age-adjusted. US rates are for White Non-Hispanics.

*Although not all cancers can be prevented, risk factors for some cancers can be reduced. Nearly two-thirds of cancer diagnoses and deaths in the US can be linked to behaviors, including tobacco use, poor nutrition, obesity, and lack of exercise. Even if risk factors cannot be modified, early detection is available for many types of cancer and can save lives.*

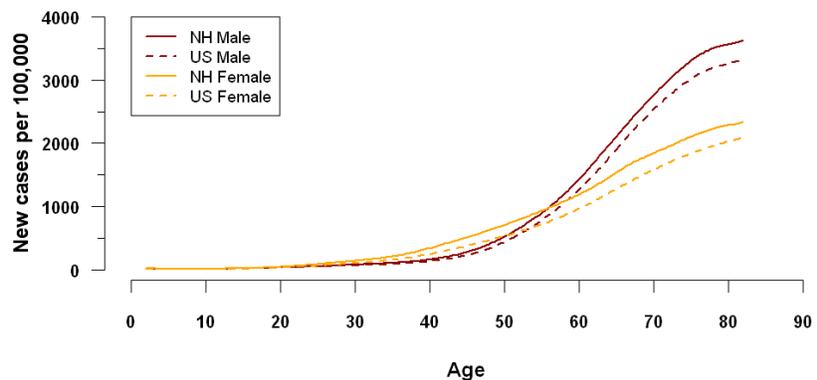
**Figure 5: Incidence Rates per 100,000 by County, 2003–2007**



*Half of all cancer diagnoses in NH occur before age 65.*

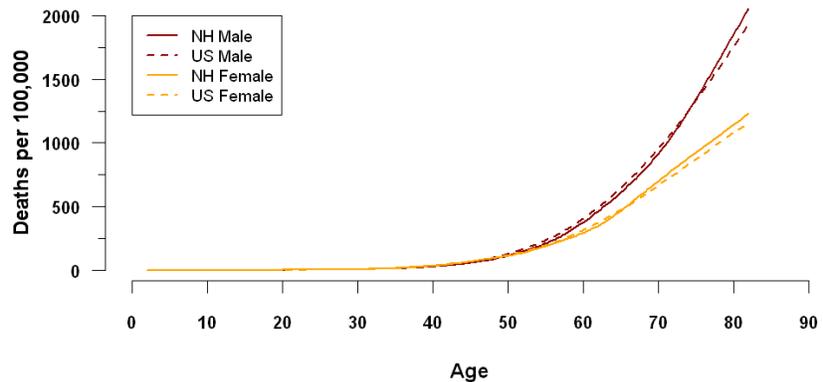
In both New Hampshire and the US, males are more likely to be diagnosed with, and die from, cancer. Cancer rates also increase with age (Figures 3 and 4). The incidence rate is higher in New Hampshire, but the mortality rate is comparable to that of the US.

**Figure 3: Diagnosis Rates for All Cancers by Age, 2003-2007**



Sources: NH State Cancer Registry, SEER. US rates are for White Non-Hispanics.

**Figure 4: Death Rates from All Cancers by Age, 2003-2007**



Sources: NH DVRA, SEER. US rates are for White Non-Hispanics.

Cancer rates are significantly higher in some populations. For example, Rockingham and Strafford counties had the highest rates of new diagnoses, while Cheshire and Hillsborough had the lowest (Figures 5 and 6). No single factor can account for these differences that may be influenced by complex demographic, economic, cultural, and individual factors.

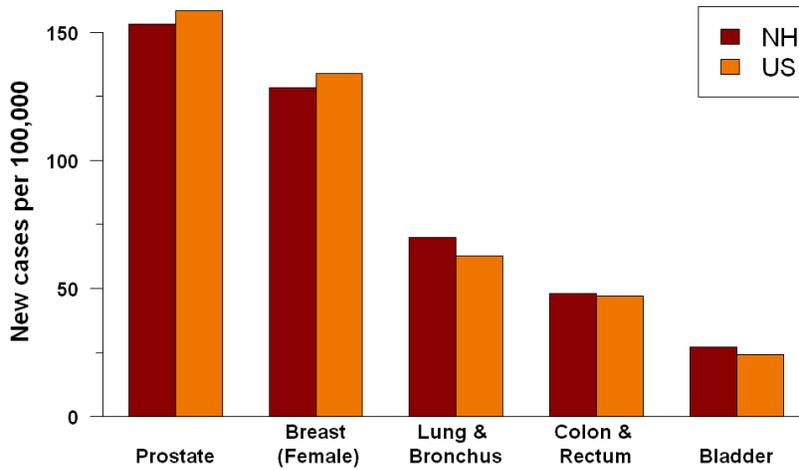
### Top Five Cancers in New Hampshire

The five leading cancer diagnoses in New Hampshire and the US are cancers of the prostate, female breast, lung and bronchus, colon and rectum, and bladder (Figure 7). These cancers are also the leading causes of cancer mortality and accounted for 56 percent of cancer deaths in the State between 2003 and 2007 (Figure 8).

The leading cancer for males is prostate, followed by lung, colorectal, and bladder. The leading cancer for females is breast, also followed by lung, colorectal, and bladder (Figures 9–11).

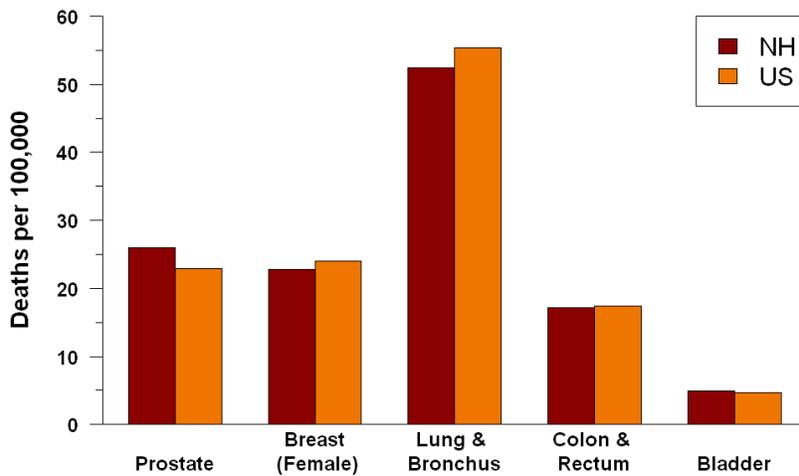
About half of all diagnoses occur before the age of 65, mostly between the ages of 35 and 64 (Figure 12).

**Figure 7: Top Five Diagnosed Cancers in New Hampshire, 2003-2007**



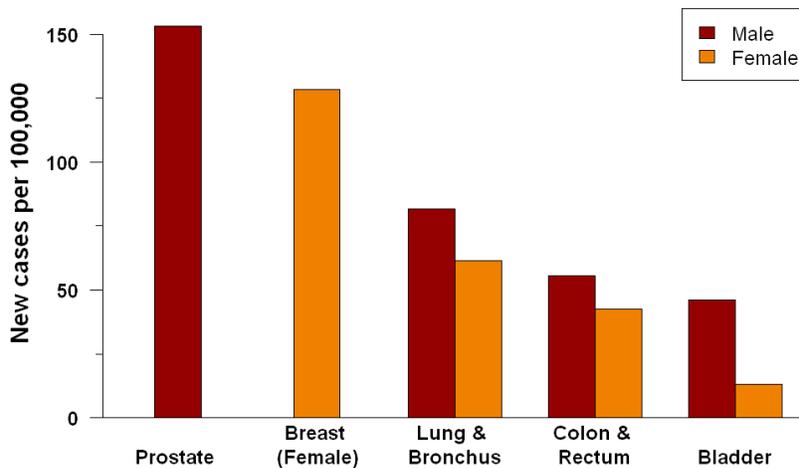
Sources: NH State Cancer Registry, SEER  
 Note: Rates are age-adjusted. US rates are for White Non-Hispanics.

**Figure 8: Death Rates for Top Five Diagnosed Cancers in New Hampshire, 2003-2007**



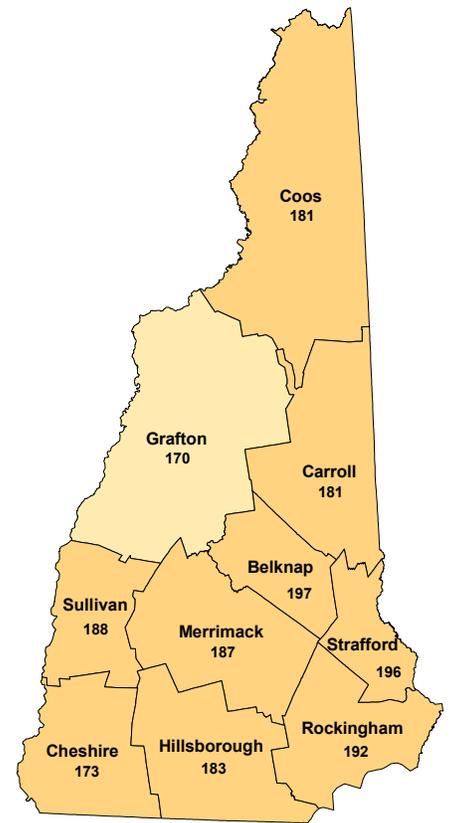
Sources: NH State Cancer Registry, SEER  
 Note: Rates are age-adjusted. US rates are for White Non-Hispanics.

**Figure 9: Top Five Diagnosed Cancers in New Hampshire by Gender, 2003-2007**



Source: NH State Cancer Registry.  
 Note: Rates are age-adjusted.

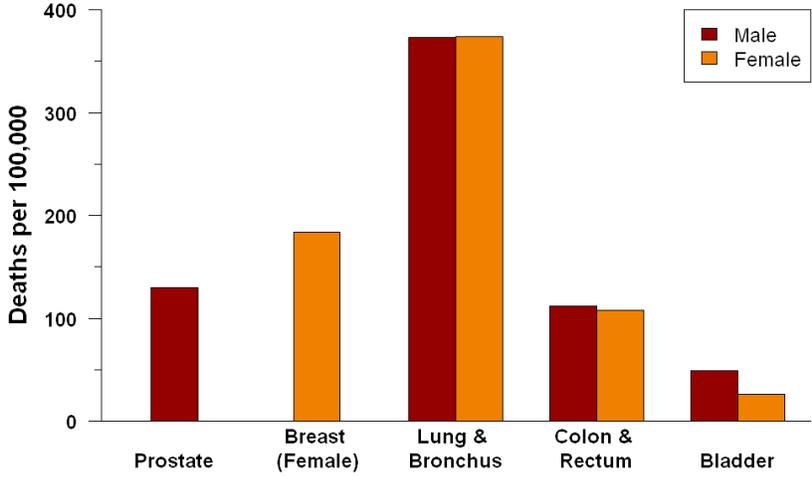
**Figure 6: Cancer Deaths per 100,000 by County, 2003-2007**



Statistical comparison to statewide estimate  
 □ Significantly lower  
 □ No significant difference  
 □ Significantly higher

Source: NH DVRA  
 Note: Rates are age-adjusted.

**Figure 10:** Death Rates for Top Five Diagnosed Cancers in New Hampshire by Gender, 2003-2007



Source: NH State Cancer Registry. Rates are age-adjusted.

**Figure 11:** New Diagnosis and Death Rates by Age for Top Five Diagnosed Cancers in New Hampshire, 2003-2007

		New Cases per 100,000		Deaths per 100,000		
		NH	US	NH	US	
<b>Bladder</b>	All	27.3*	24.1	4.9	4.7	
	Males	46.1*	42.5	8.6	8.2	
	Females	13.0*	10.2	2.4	2.3	
<b>Breast</b>	Females	128.4*	133.8	22.8	24.0	
	<b>Colon/rectum</b>	All	48.2	47.0	17.2	17.4
		Males	55.4	54.1	20.6	21.0
	Females	40.4	41.1	14.6	14.6	
<b>Lung</b>	All	69.8*	62.6	52.4*	55.4	
	Males	81.7*	73.2	64.3*	71.1	
	Females	61.5*	55.0	43.8	43.9	
<b>Prostate</b>	Males	153.1	158.4	26.0*	22.9	

\* New Hampshire rate significantly different from US rate.  
 ■ Significant increase in NH rates from 2003 to 2007.  
 ■ Significant decrease in NH rate from 2003 to 2007.  
 Notes: Significance in trends indicated for New Hampshire rates only. Rates are age-adjusted. US rates are for White Non-Hispanics.  
 Sources: NH State Cancer Registry, SEER. Rates are age-adjusted.

**Figure 12:** New Diagnosis Rates for Top Five Cancers in New Hampshire by Age Group, 2003-2007

	New Cases per 100,000				Deaths per 100,000			
	0 to 14	15 to 34	35 to 64	65 and above	0 to 14	15 to 34	35 to 64	65 and above
<b>Bladder</b>	0.0	0.6	20.5	156.7	0.0	0.6	3.0	66.9
<b>Breast (female)</b>	0.0	9.2	194.8	427.3	0.0	1.0	48.2	219.1
<b>Colon &amp; rectum</b>	0.0	2.8	39.5	263.1	0.0	1.0	18.9	60.8
<b>Lung</b>	0.0	0.7	59.4	380.5	0.0	0.1	37.7	89.3
<b>Prostate</b>	0.0	0.0	153.8	800.1	0.0	0.0	6.5	328.1

Sources: NH State Cancer Registry

## Prostate Cancer

Prostate cancer is the most common type of cancer occurring in men and the second leading cause of cancer mortality in men. Men at highest risk include African-Americans,

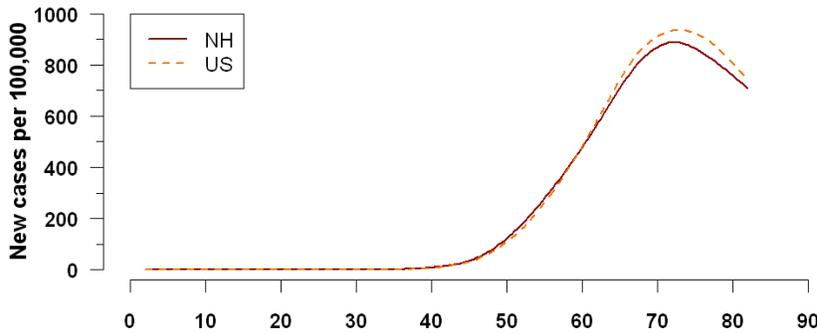
*The mortality rate from prostate cancer, the most commonly diagnosed cancer in men, is decreasing in NH but continues to be higher than the national rate.*

those over 65 years of age, and those with a family history of prostate cancer. In New Hampshire, 28 percent of new cancer diagnoses in men and 11 percent of cancer deaths are due to prostate cancer.

### Incidence and Mortality

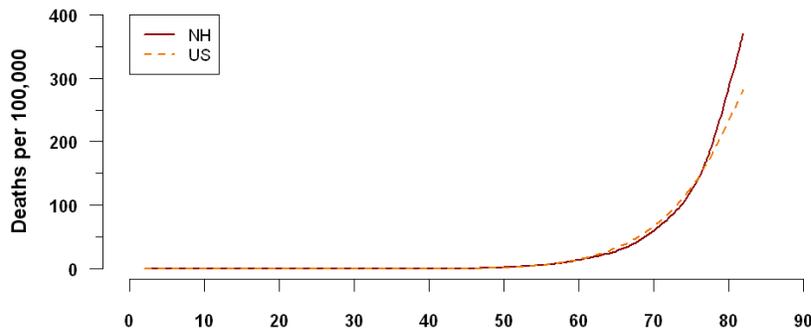
New Hampshire's incidence rate for prostate cancer in 2003–2007 remained stable at 153.1 per 100,000 men, similar to the national incidence rate (Figure 13) [2, 3]. The mortality rate was 26 per 100,000 men. Although this rate has been decreasing significantly by 4.5 percent per year, it is still significantly higher than US rates (22.9 per 100,000), mostly due to higher death rates among elderly men (Figure 14).

**Figure 13:** New Diagnosis Rates for Prostate Cancer by Age, 2003-2007



Sources: NH State Cancer Registry, SEER. US rates are for White Non-Hispanics.

**Figure 14:** Death Rates for Prostate Cancer by Age, 2003-2007



Sources: NH State Cancer Registry, SEER. US rates are for White Non-Hispanics.

*The mortality rate from prostate cancer, the most commonly diagnosed cancer in men, is decreasing in NH but continues to be higher than the national rate.*

### Stage at Diagnosis and Screening

Early detection of prostate cancer is possible with a blood test for prostate-specific antigen (PSA) or a digital rectal exam (DRE); men should discuss their risk and need for screening with their doctor. According to the 2008 BRFSS survey, 69 percent of New Hampshire

men age 40 and older reported having ever discussed prostate screening with their healthcare provider; 67 percent of those discussions took place in the past year. About 55 percent of all New Hampshire men age 40 and older have had a PSA test in the past two years.

From 2003 to 2007, most (82 percent) of New Hampshire's prostate cancer cases were diagnosed at an early stage.

## Breast Cancer

Breast cancer usually occurs in women and is rarely diagnosed in men. White women and elderly women are at increased risk of developing breast cancer. Other risk factors include:

*The incidence rate of breast cancer, the most commonly diagnosed cancer in women, is lower in NH compared with the US, but cases are less often diagnosed at an early stage.*

- Early age at first menstrual period
- Never having given birth or an older age at first birth
- Family or personal history of breast cancer
- Radiation therapy to the breast or chest
- Obesity
- Taking hormones such as estrogen and progesterone
- Presence of certain genes (BRCA1, BRCA2).

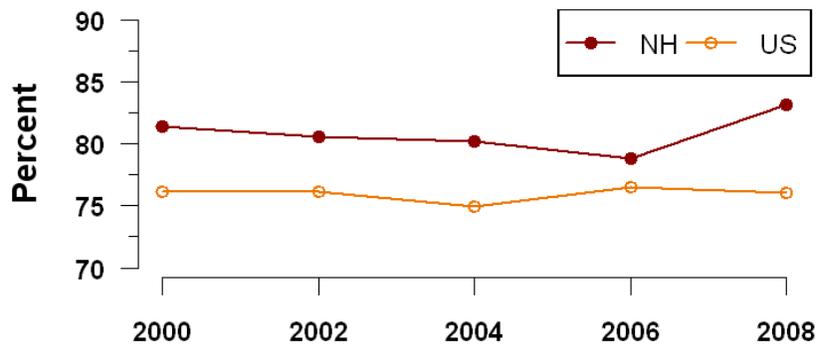
### Incidence and Mortality

Breast cancer is the most commonly diagnosed cancer among women in New Hampshire and accounted for nearly 30 percent of new cancer cases between 2003 and 2007. During this period, the State incidence rate declined significantly at a rate of 1.2 percent per year, averaging 128.4 per 100,000 women, which is lower than the national rate (133.8 per 100,000) [2]. Breast cancer is the second leading cause of cancer mortality among women in New Hampshire, representing 14 percent of all cancer deaths. The mortality rate also decreased significantly in that period by 3.0 percent per year and was on average 22.8 per 100,000, similar to the national rate [3].

### Stage at Diagnosis and Screening

Breast cancer can be diagnosed early, when it is more likely curable, with mammograms. According to the 2008 BRFSS survey, 83 percent of New Hampshire women age 40 and older reported having a mammogram in the past two years, significantly higher than the national rate of 76 percent (Figure 15).

Disparities in mammogram usage emerge when data are broken down by education or income level. Eighty-six percent of women who are college graduates reported having a mammogram in the past two years, compared with only 66 percent of women with less than a high school education or GED. Similarly, the screening rate was 89 percent for women with income over \$75,000, compared with 67 percent for low-income women (under \$15,000).

**Figure 15:** Women Over Age 40 Having Mammogram Past Two Years

Source: NH BRFSS. Data collected only in even-numbered years.

According to the most recent BRFSS data, in 2006 and 2008 only the Greater Monadnock region had a significantly lower percent of females age 40 and older having mammograms the past two years (75 percent).

Despite the high overall mammogram usage rates in New Hampshire, only about 73 percent of breast cancers are diagnosed at an early stage, compared with 85 percent in the U.S.

### Lung Cancer

Lung cancer is the leading cause of cancer deaths for both men and women, killing more people than colon, breast, and prostate cancers combined.

*Lung cancer is the leading cause of cancer mortality in NH with about half of cases being diagnosed after the disease has spread. The best way to prevent lung cancer is by avoiding tobacco use, since no reliable screening test for early detection is known.*

Tobacco use is the major risk factor for lung cancer. Other risk factors include environmental exposures (secondhand cigarette smoke, radon, asbestos), a personal or family history of lung cancer, and age over 65.

### Incidence and Mortality

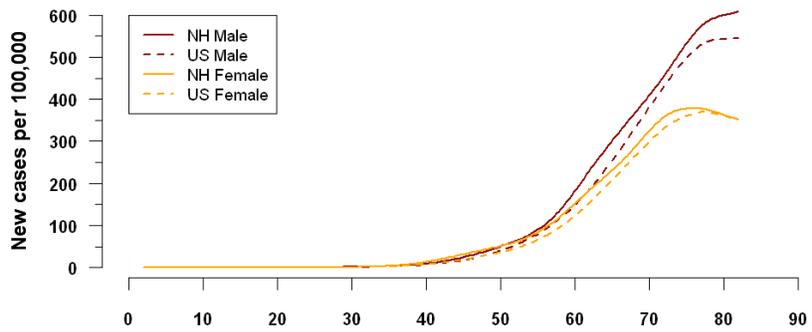
New Hampshire's incidence of lung cancer is higher than the US rate, both as a whole and when considered by gender (Figure 16). New Hampshire's overall incidence rate of lung cancer for 2003–2007 was 69.8 per 100,000 persons compared with the US rate of 62.6 per 100,000.

Men are diagnosed more frequently with lung cancer than women, but the rate for men has been declining in the past two decades in New Hampshire. Lung cancer rates for women have been generally rising, although a significant decrease was seen between 2005 and 2007 (Figure 17).

Despite the significantly higher incidence of lung cancer in New Hampshire compared with the US, the mortality rate for women (43.8 per 100,000) is stable and similar to the national rate. For men, the State mortality rate (64.3 per 100,000) is lower than the national rate (71.1) and decreasing by 4.5 percent per year [3].

**For more information about breast and cervical cancer screening visit [www.dhhs.nh.gov/dphs/cdpc/bccp](http://www.dhhs.nh.gov/dphs/cdpc/bccp) or call 1-800-852-3345, ext 4931**

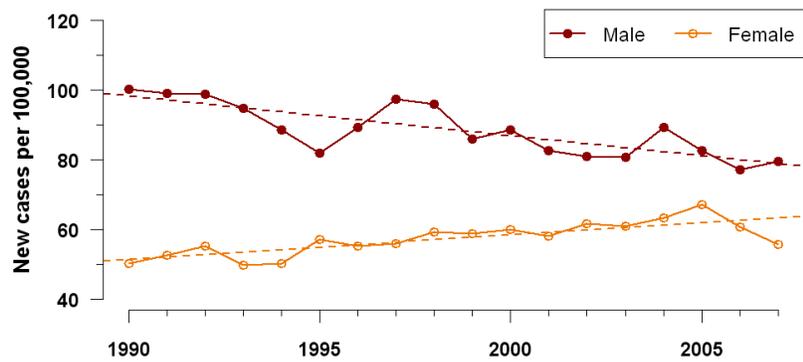
**Figure 16:** New Diagnosis Rates for Lung Cancer by Age, 2003-2007



Sources: NH State Cancer Registry, SEER. US rates are for White Non-Hispanics.

*Exposure to radon is a lung cancer risk factor of particular concern in NH. Detailed information on radon exposure in NH can be found on page 46.*

**Figure 17:** New Diagnosis Rates for Lung Cancer by Gender, 1990-2007



Source: NH State Cancer Registry. Rates are age-adjusted.

**Stage at Diagnosis and Screening**

No agreed upon screening test exists for early diagnosis of lung cancer. Nearly 50 percent of all new cases of lung cancer in New Hampshire between 2003 and 2007 were diagnosed late, after spread had already occurred. Prevention remains the key to combating this deadly disease. The single most effective way to prevent lung cancer is by avoiding tobacco use, which is still common in New Hampshire. In 2009, 16 percent of New Hampshire adults (18 years and older) and 21 percent of high school students are currently smoking (YRBS). Detailed information on tobacco use in New Hampshire can be found on page 22.

**Colorectal Cancer**

Among cancers that affect both men and women, colorectal cancer is the second most commonly diagnosed in New Hampshire. Risk factors for colon cancer include the following:

- Age older than 50
- Black race
- Personal or family history of colon cancer

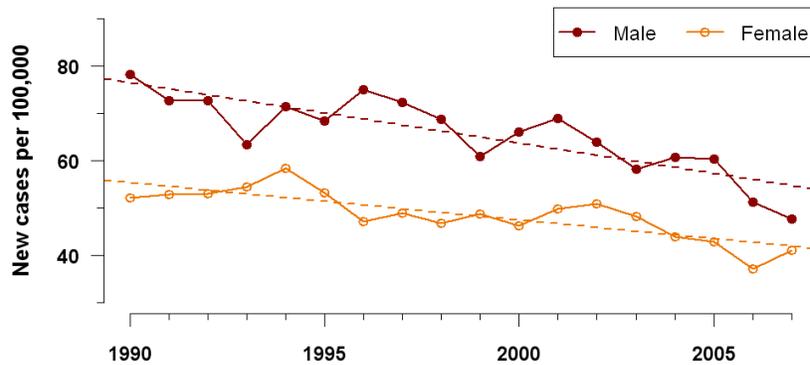
*The incidence of colorectal cancer has been declining in NH, but new cases are usually diagnosed at a late stage, despite the availability of screening tests.*

- Polyps in the colon or rectum
- Inflammatory bowel disease
- Genetic factors
- Diet high in fat and animal protein and low in fiber and folic acid.

**Incidence and Mortality**

From 2003–2007, about 55 per 100,000 New Hampshire men and 40 per 100,000 women were diagnosed with colorectal cancer, comparable to national rates [2]. During this period, the incidence rate declined significantly by 3.5 percent per year for men and 2.5 percent per year for women (Figure 18).

**Figure 18:** Colorectal Cancer, New Cases by Gender, 1990-2007



Source: NH State Cancer Registry. Rates are age-adjusted.

The mortality rate from colorectal cancer has also been declining in the past two decades for both men and women. The state mortality rate during 2003–2007 was 14.6 per 100,000 for women and 20.6 per 100,000 for men, both comparable to national data. The decline in mortality in that period was 5.9 percent per year for men and 4.5 percent for women.

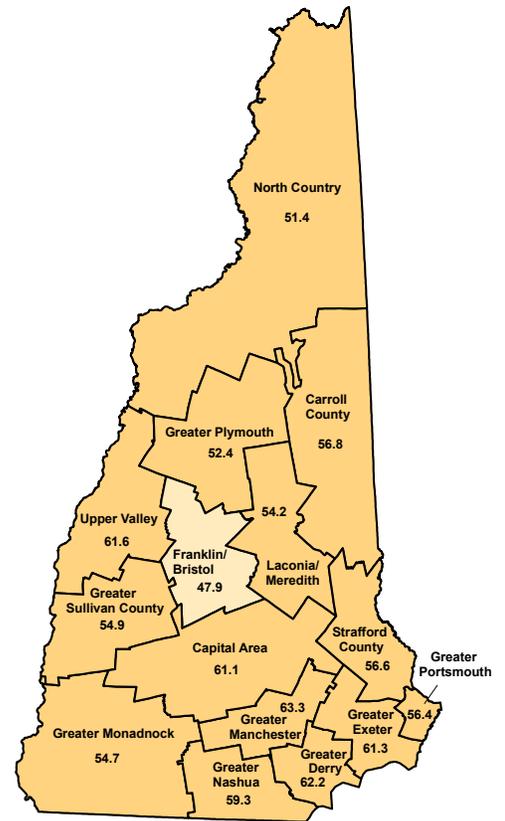
**Stage at Diagnosis and Screening**

All adults between 50 and 75 years of age should be screened for colorectal cancer, since the disease is highly curable at early stages. Screening tests consist of fecal occult blood testing (FOBT) (recommended every year), sigmoidoscopy (every 5 years), or colonoscopy (every 10 years). Sigmoidoscopy and colonoscopy both use a lighted tube that can directly examine the lining of the colon; colonoscopy allows for removal of polyps (small, potentially pre-cancerous growths) during the test.

According to the BRFSS survey, in 2008 only 72 percent of New Hampshire adults age 50 and older ever had a sigmoidoscopy or colonoscopy, and only 23 percent have used FOBT in the past two years. As a result, only 36 percent of colorectal cancers in New Hampshire are diagnosed at an early stage.

Regionally, the North Country, Franklin-Bristol, and Laconia-Meredith public health regions have the lowest screening rates in the State (Figure 19).

**Figure 19:** Percent Having Colonoscopy Past Five Years, 2009



**Statistical comparison to statewide estimate**

- Significantly lower
- No significant difference
- Significantly higher

Source: NH BRFSS

*Of the major cancers, only colorectal cancer has shown significant declines in incidence and mortality for both NH men and women.*

## Bladder Cancer

Bladder cancer incidence rates are higher than national rates, not only for New Hampshire but the entire New England region [2]. The principal risk factor for bladder cancer is smoking. Other risk factors include exposure to certain chemicals (especially at the workplace), exposure to certain drugs (such as cyclophosphamide), and a family or personal history of bladder cancer. High levels of arsenic in drinking water represent a risk factor for bladder cancer, which is of particular concern in New Hampshire/

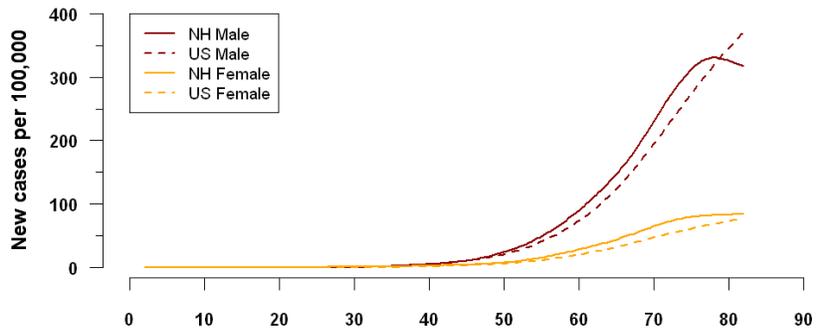
*Bladder cancer rates are higher in NH compared with the country but most cases are diagnosed early.*

*Arsenic exposure is a known risk factor for bladder cancer. Approximately 13 percent of privately owned wells in NH exceed the standard for arsenic in drinking water. Testing is recommended.*

### Incidence and Mortality

New Hampshire's incidence of bladder cancer is higher than that of the US, both as a whole and by gender (Figure 20).

**Figure 20:** New Diagnosis Rates for Bladder Cancer by Age, 2003-2007



Sources: NH State Cancer Registry, SEER. US rates are for White Non-Hispanics.

The State's overall incidence rate of bladder cancer for 2003–2007 was 27.3 per 100,000 persons, compared with the US incidence rate of 24.1 [2], and was increasing during this period.

Men are diagnosed with bladder cancer much more frequently than women. Between 2003 and 2007, 73 percent of newly diagnosed bladder cancers in New Hampshire occurred in men. The incidence rate for men was 46.1 per 100,000 (42.5 in US) while that among women was 13 per 100,000 (10.2 in US) [2].

Bladder cancer mortality rates for both men (8.6 per 100,000) and women (2.4 per 100,000) in New Hampshire were similar to the corresponding US rates [3]. State mortality rates decreased by a significant 3.5 percent per year for men, but increased 14 percent for women.

### Stage at Diagnosis and Screening

Despite the lack of an effective screening test for bladder cancer, about 86 percent of bladder cancers during 2003–2007 were diagnosed at an early stage.

## Cervical Cancer

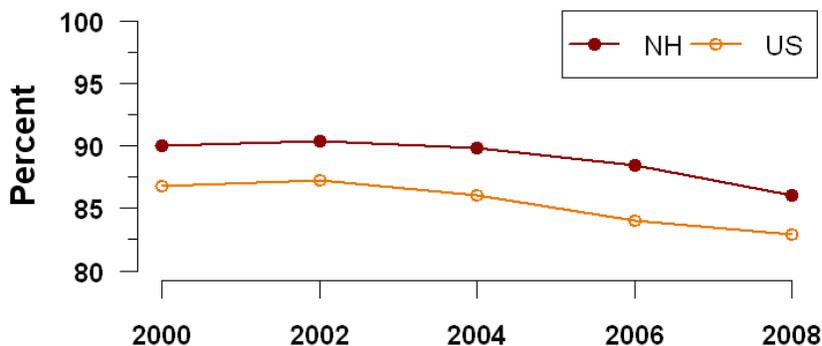
### Pap Test for Early Diagnosis of Cervical Cancer

Although cervical cancer is not one of the top five cancers in New Hampshire, it can be detected in pre-cancerous or early cancer stages, making it an important target for screening efforts.

Almost all cervical cancers are caused by the human papillomavirus (HPV). More than 100 types of HPV are known, two of which (HPV 16 and 18) are responsible for 70 percent of cervical cancers and can be prevented with vaccination. In addition to HPV, other risk factors for cervical cancer include smoking, a compromised immune system (including from HIV), long-term use of birth control pills (five years or more), and having given birth to three or more children.

Women with a cervix and who have been sexually active should have a Pap test, the screening test for cervical cancer, at least every three years. According to the 2008 BRFSS survey, 86 percent of New Hampshire women reported that they had a Pap test in the past three years, compared with 83 percent nationally. Pap testing has been trending down in both New Hampshire and the US (Figure 21).

**Figure 21:** Women Over Age 18 Having Pap Test in Past Three Years



Source: NH BRFSS  
Note: Data only collected in even-numbered years

As with breast cancer screening, clear disparities exist between income and education levels. The 2008 BRFSS survey estimated that 93 percent of college graduates had a Pap smear in the past three years, compared with 69 percent of women with less than a high school education or GED. Similarly, 92 percent of women with income greater than \$75,000 were screened compared with only 73 percent of women with income less than \$15,000.

#### References:

1. American Cancer Society. Cancer Facts & Figures 2010. Atlanta: American Cancer Society; 2010.
2. Altekruse SF, Kosary CL, Krapcho M, Neyman N, Aminou R, Waldron W, Ruhl J, Howlander N, Tatalovich Z, Cho H, Mariotto A, Eisner MP, Lewis DR, Cronin K, Chen HS, Feuer EJ, Stinchcomb DG, Edwards BK (eds). SEER Cancer Statistics Review, 1975-2007, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2007/](http://seer.cancer.gov/csr/1975_2007/), based on November 2009 SEER data submission, posted to the SEER web site, 2010.
3. Surveillance, Epidemiology, and End Results (SEER) Program ([www.seer.cancer.gov](http://www.seer.cancer.gov)) SEER\*Stat Database: Mortality - All COD, Aggregated With State, Total U.S. (1990-2007) , National Cancer Institute, DCCPS, Surveillance Research Program, Cancer Statistics Branch, released April 2009. Underlying mortality data provided by NCHS ([www.cdc.gov/nchs](http://www.cdc.gov/nchs)).

# Cardiovascular Diseases and Risk Factors

## Heart Disease

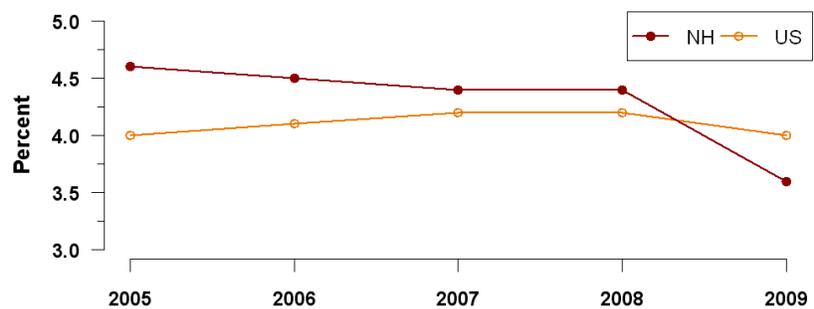
The term heart disease represents several types of heart conditions. The most common type in the US is coronary heart disease, which results from reduced blood flow to the heart. Critical reduction in blood flow can lead to permanent damage, commonly known as heart attack. Heart disease is the leading cause of death in the US (25 percent of all deaths) [1] and the second leading cause of death in New Hampshire (24 percent). Total costs for heart disease in the US during 2010 are estimated at \$316.4 billion, including health care services, medications, and lost productivity [2].

*Heart disease is the second leading cause of death in NH.*

Since 2005, the prevalence of heart disease in the nation has been stable at around 4 percent. During the same period, New Hampshire has trended down from 4.6 to 3.7 percent, although this change is not statistically significant (Figure 1).

Since 2005, the prevalence of heart disease in the nation has been stable at around 4 percent. During the same period, New Hampshire has trended down from 4.6 to 3.7 percent, although this change is not statistically significant (Figure 1).

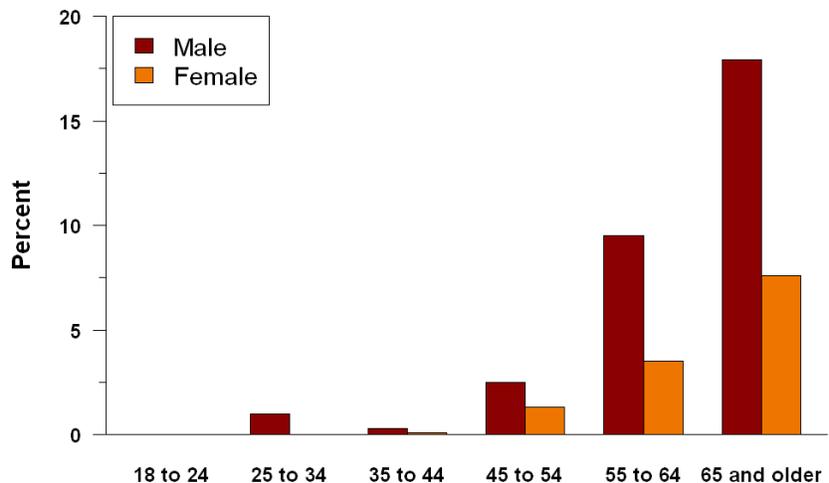
**Figure 1:** Prevalence of Coronary Heart Disease (Angina), 2005-2009



Sources: NH BRFSS, CDC

Heart disease is twice as prevalent among males (5 percent) as females (2 percent) and the risk increases with age (11 percent among those 65 years of age and older) (Figure 2).

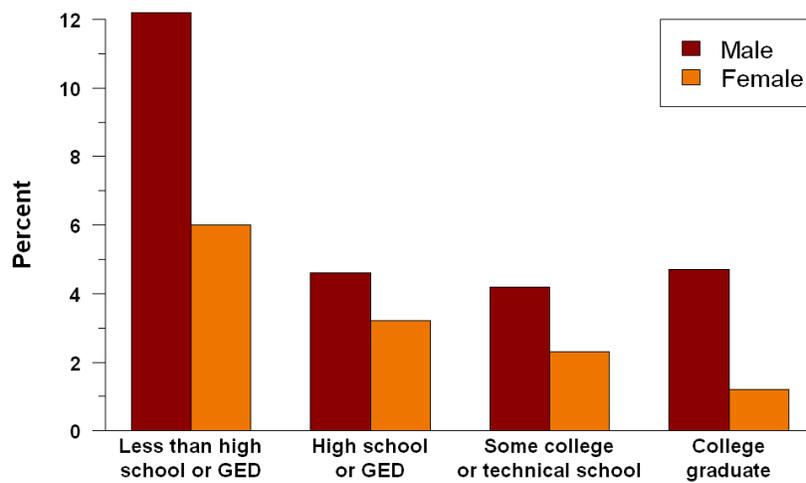
**Figure 2:** Prevalence of Coronary Heart Disease by Age Group, 2009



Source: NH BRFSS

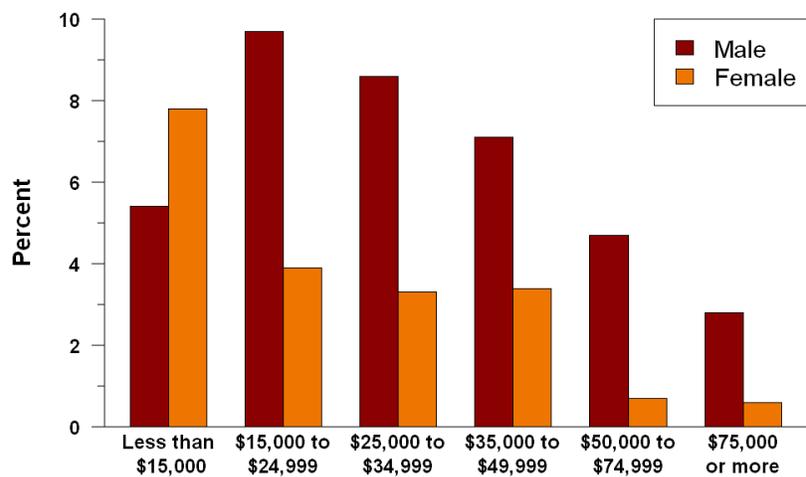
Prevalence also increases with lower education attainment (Figure 3) and lower income (Figure 4).

Figure 3: Prevalence of Coronary Heart Disease by Education Level, 2009



Source: NH BRFSS

Figure 4: Prevalence of Coronary Heart Disease by Income, 2009



Source: NH BRFSS

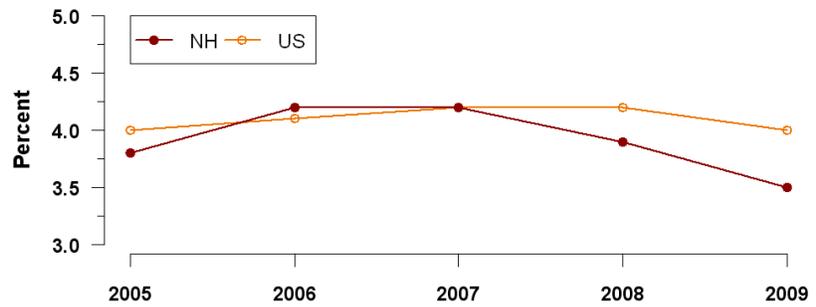
Based on data for both 2008 and 2009, heart disease prevalence is similar among public health regions.

**Heart Attack**

The estimated prevalence of heart attack (myocardial infarction) among New Hampshire adult residents has been stable at around 4 percent, similar to US data, with a recent downward trend since 2007, although not statistically significant (Figure 5).

Disparities in gender, education, and income are similar to those seen for heart disease as a whole. No significant geographic differences across the State are apparent.

**Figure 5:** Percent Reporting “Ever Had Heart Attack,” 2005–2009



Sources: NH BRFSS, CDC

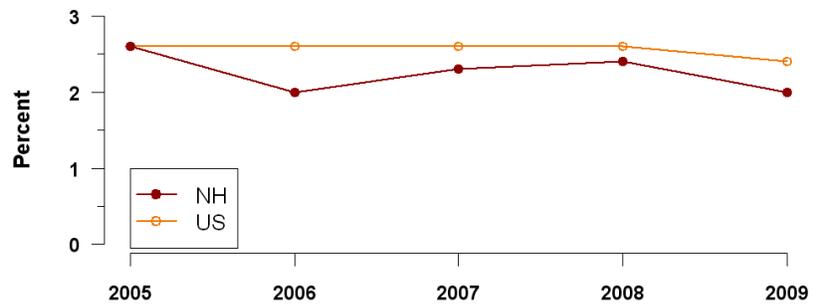
**Stroke**

Stroke is the permanent damage to brain tissue that occurs with brain hemorrhage or critical reduction in blood flow to the brain. Stroke is the third leading cause of death in the US and the fifth leading cause of death in New Hampshire [3]. Depending on the location, irreversible brain damage can cause, in survivors, neurological deficits such as paralysis. According to the American Heart Association, the estimated costs of stroke amounted to \$73.7 billion nationally in 2010 [4].

Based on BRFSS data, the prevalence of stroke among the New Hampshire adult population is stable at around 2 percent and is similar to national data (Figure 6).

*Based on BRFSS survey data, the prevalence of stroke in the NH adult population is stable at around 2 percent. About 21,000 NH residents have suffered stroke.*

**Figure 6:** Percentage Reporting “Ever had stroke,” 2005–2009



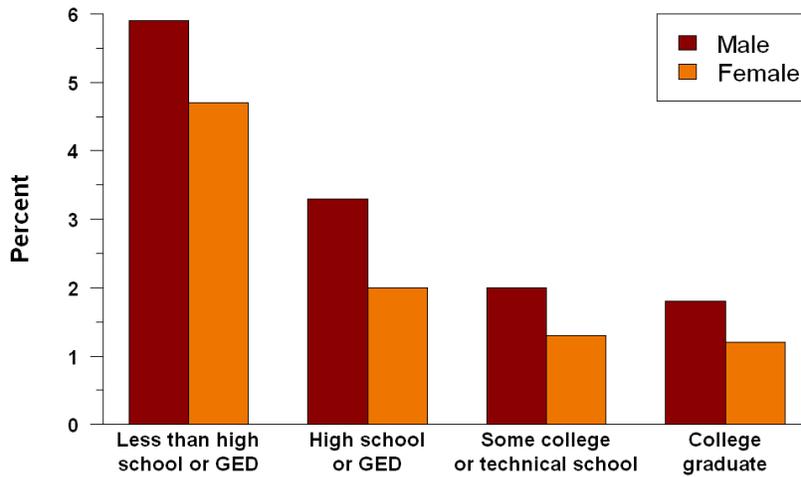
Sources: NH BRFSS, CDC

Stroke risk increases with age; among the elderly population in New Hampshire (65 years and older), 6 percent responded that they had suffered a stroke. Disparities among education and income levels are similar to those seen in heart disease (Figures 7 and 8). Stroke rates are similar across all public health regions.

**Cardiovascular Risk Factors**

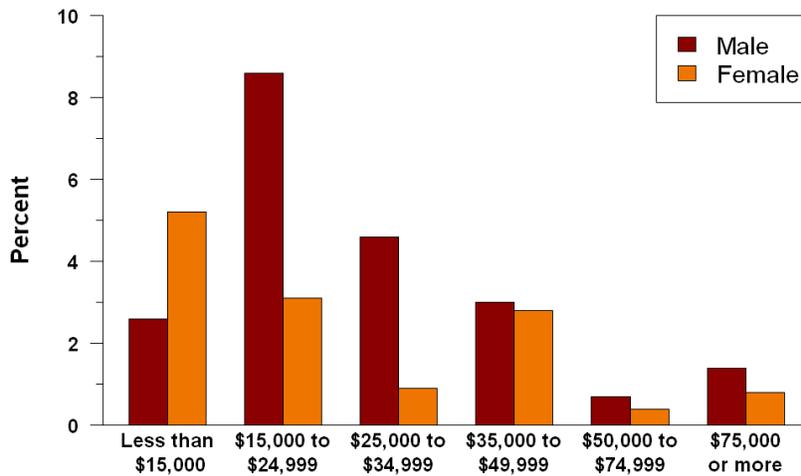
The major risk factors for the above cardiovascular diseases are diabetes, elevated blood pressure (hypertension) and elevated cholesterol. Other major risk factors detailed elsewhere include smoking (page 22), obesity (page 25), and physical inactivity (page 27).

**Figure 7:** Percent Reporting “Ever Had Stroke” by Gender and Education, 2009



Source: NH BRFSS

**Figure 8:** Percent Reporting “Ever Had Stroke” by Gender and Income, 2009



Source: NH BRFSS

**Diabetes**

Diabetes is a disease caused by a relative deficiency of insulin, the hormone that helps the body process glucose (sugar). This deficiency results in elevated and harmful levels of glucose in the blood that can damage many parts of the body, including heart, eyes, kidneys, and lower limbs.

*Diabetes is the seventh leading cause of death in NH. About 7% of NH adults (65,000–80,000 persons) have diabetes.*

Type 1 diabetes (5–10 percent of cases) results from deficient production of insulin and usually begins in childhood. Type 2 diabetes results when the body does not make enough insulin, cannot use insulin it produces, or both. Type 2 diabetes generally develops in adulthood and accounts for 90–95 percent of all cases. Risk factors for type 2 diabetes include older age, obesity, physical inactivity, family history of diabetes, and race/ethnicity (for example, African

*Maintaining a healthy weight, eating a healthy diet, and exercise can help prevent type 2 diabetes.*

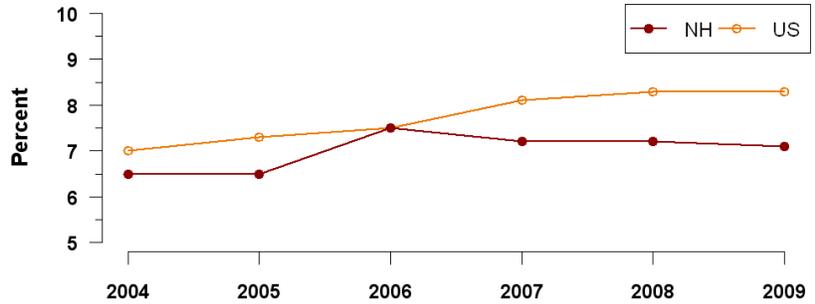
*Based on national estimates, one third of adults with diabetes are undiagnosed [7]. Diabetes is diagnosed by a simple blood test that should be done at least every three years from age 45, and earlier for those with risk factors.*

Americans are at increased risk). Gestational diabetes, the development of diabetes during pregnancy, occurs in about 7 percent of pregnant women. It can cause pregnancy complications and is known to increase the mother’s future risk of type 2 diabetes.

Diabetes carries a high cost; in the US, the average health care cost for a person with diabetes is \$11,744 annually, compared with \$2,935 for a person without diabetes [5].

In 2009, 7.1 percent of New Hampshire’s adult population had diabetes, which is lower than the national rate of 8.4 percent (Figure 9) but with notable variations in different populations. The rate of diabetes among those with less than a high school education or GED is twice as high as for college graduates. The rate of diabetes among those earning less than \$15,000 is more than three times as high as those earning \$75,000 or more. Among adults 65 years or older, 17 percent reported having diabetes.

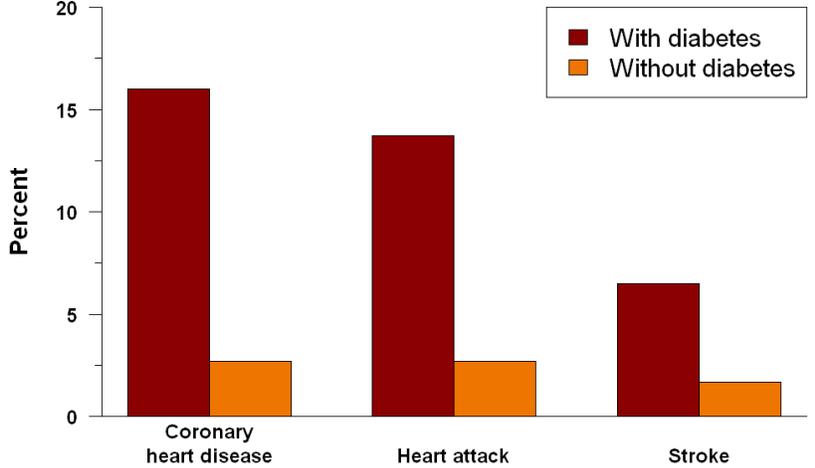
**Figure 9:** Prevalence of Diabetes by Year



Data Sources: NH BRFSS, CDC

In 2009, 16 percent of New Hampshire adults with diabetes reported heart disease and 14 percent reported having had a heart attack. Both rates are more than five times higher than those for people without diabetes (Figure 10). Stroke was reported in 6.5 percent of diabetics compared with only 1.7 percent of people without diabetes. These differences are similar to those seen nationally [6].

**Figure 10:** Prevalence of Heart Disease and Stroke by Diabetes Status, 2009



Data source: NH BRFSS

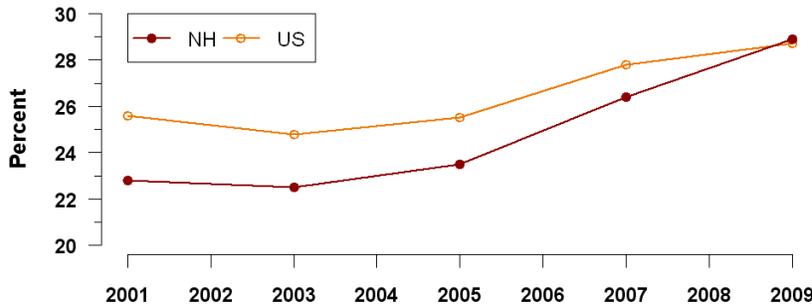
**Hypertension**

About 20–30 percent of heart disease and 20–50 percent of strokes in the US are caused by uncontrolled high blood pressure. High salt intake, obesity, physical inactivity, excessive alcohol consumption, and family history are risk factors for high blood pressure.

*Nearly a third of NH's adult population has high blood pressure (hypertension).*

In 2009, 29 percent of New Hampshire adults reported ever being told they have high blood pressure, significantly up from 23 percent in 2001 (Figure 11).

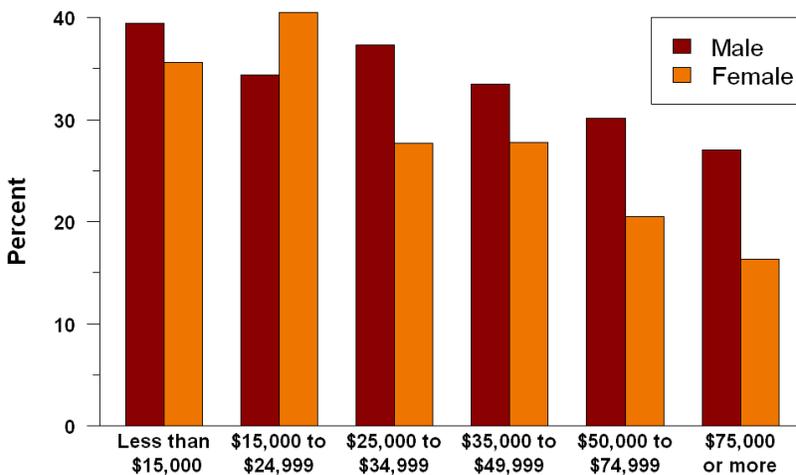
**Figure 11:** Percent Told Having Hypertension, 2001-2009



Source: NH BRFSS, CDC

Men are significantly more likely to have high blood pressure than women. The chance of having high blood pressure increases with age. High blood pressure is also linked with lower education level and lower income (Figure 12).

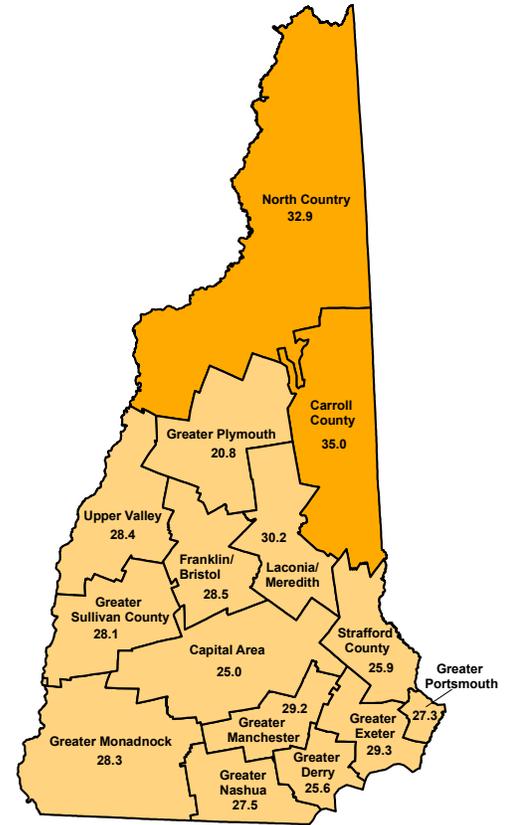
**Figure 12:** Percent Hypertensive by Gender and Income, 2007 and 2009



Source: NH BRFSS

Among the public health regions, Greater Plymouth has the lowest rate of persons diagnosed with hypertension (20.8 percent) and the Carroll County region and North Country region have a higher prevalence of adults diagnosed with hypertension compared with the State average (Figure 13).

**Figure 13:** Percent Told Had Hypertension, 2007 and 2009

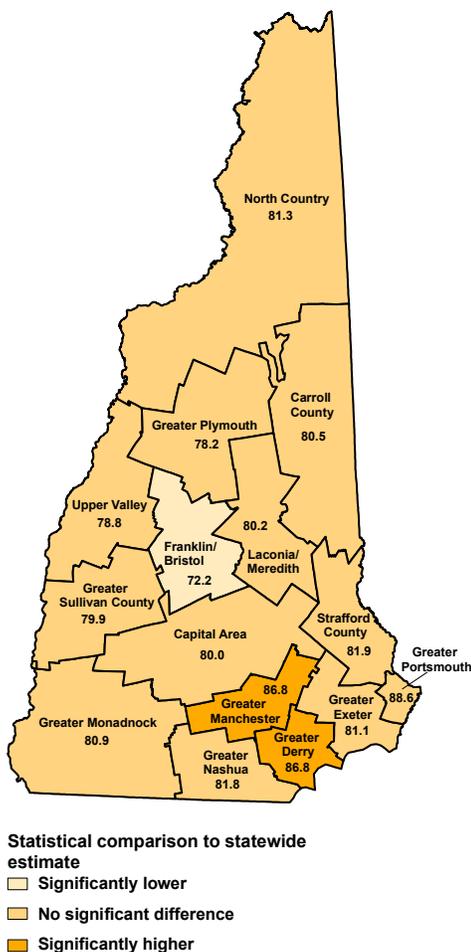


Statistical comparison to statewide estimate

- Significantly lower
- No significant difference
- Significantly higher

Source: NH BRFSS

**Figure 16:** Percent Having Cholesterol Tested Past Five Years, 2007 and 2009



Source: NH BRFSS

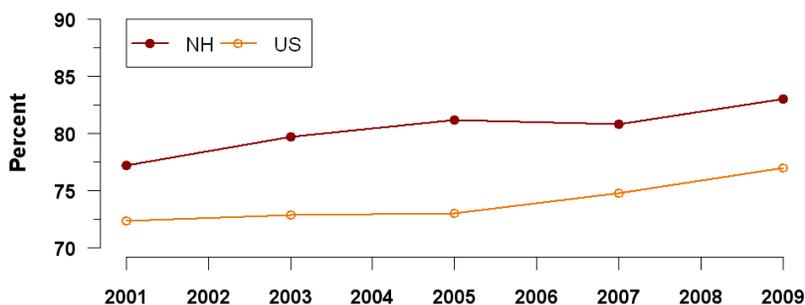
### Elevated Cholesterol

About 30–40 percent of coronary heart disease and 10–20 percent of strokes in the US are caused by high cholesterol [8]. Physical inactivity, high fat intake, smoking, diabetes, and obesity are linked to high cholesterol levels.

*In 2009, 83% of NH's adult population had their cholesterol checked, and nearly 40% of those tested were found to have high cholesterol.*

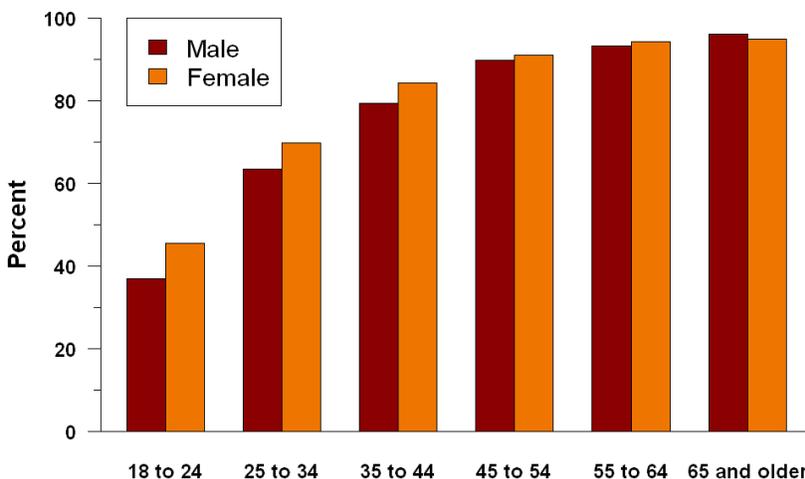
According to the 2009 BRFSS survey, 83 percent of New Hampshire residents reported having their blood cholesterol tested, significantly up from 77 percent in 2001 (Figure 14). Women and older adults are most likely to have their cholesterol tested (Figure 15). Ninety-five percent of adults age 65 or older had their cholesterol tested in the past five years. In 2009, nearly 40 percent of those who had their cholesterol checked reported that it was high. The North Country region had a significantly higher prevalence of adults reporting high cholesterol (45 percent) compared with the State average.

**Figure 14:** Percentage Having Cholesterol Tested, 2001–2009



Source: NH BRFSS, CDC

**Figure 15:** Percentage Having Cholesterol Tested by Gender and Age Group



Source: 2007 and 2009 NH BRFSS

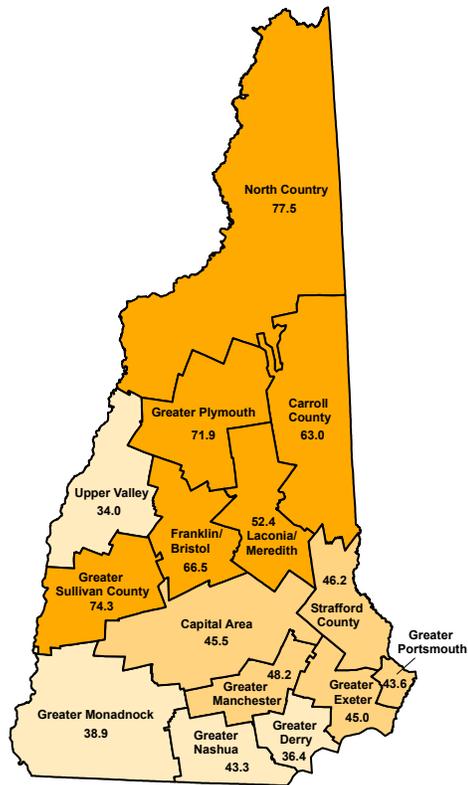
Clear differences are again seen when the New Hampshire population is viewed by income and education level. Persons with lower income and educational levels are less likely to have their cholesterol checked. Rate of cholesterol testing in Greater Derry and Greater

Manchester are significantly higher (86 percent) than the State average, while the Franklin/Bristol region has a significantly lower rate (72 percent (Figure 16).

#### References

1. CDC, Heart Disease Facts, <http://www.cdc.gov/heartdisease/facts.htm>
2. Lloyd-Jones D, et al. Heart Disease and Stroke Statistics-2010 Update. A Report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation* v. 121:e1-e170, 2010.
3. Heron MP, et al., Deaths: Final data for 2006, National Vital Statistics Reports; 57 (14). Hyattsville, MD: National Center for Health Statistics. 2009, [http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57\\_14.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr57/nvsr57_14.pdf)
4. American Heart Association and Stroke Statistics-2010 Update, American Heart Association, <http://www.americanheart.org/presenter.jhtml?identifier=1200026>
5. American Diabetes Association, Economic costs of diabetes in the US in 2007. *Diabetes Care* 31(3):1-20, 2008.
6. CDC, National Diabetes Fact Sheet, [http://www.cdc.gov/diabetes/pubs/pdf/ndfs\\_2007.pdf](http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2007.pdf).
7. Cowie C.C. et al. Full accounting of diabetes and pre-diabetes in the U.S. population in 1988-1994 and 2005-2006. *Diabetes Care* 32(2):287-294, 2009.
8. CDC, Division for Heart Disease and Stroke Prevention, <http://www.cdc.gov/DHDS>.

**Figure 2:** Emergency Department Visit Rates with Asthma as the Primary Diagnosis, 2005–2007



Statistical comparison to statewide estimate

- Significantly lower
- No significant difference
- Significantly higher

Source: NH Hospital Discharge Data  
 Note: Rates are per 10,000 NH residents and age-adjusted

*Visits to the emergency room for asthma are avoidable with close monitoring and self-management of asthma in the outpatient setting.*

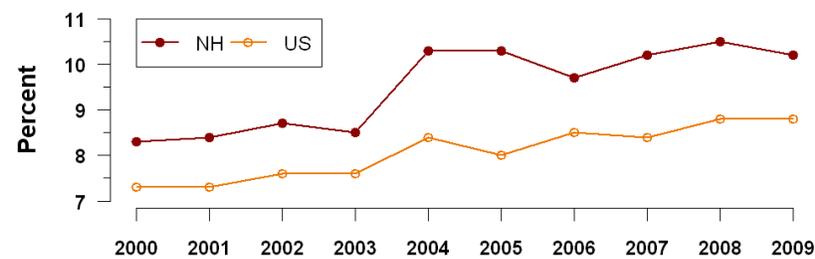
## Asthma

Asthma is a chronic lung disease characterized by episodic narrowing of airways in response to a variety of triggers (such as smoke and dust) leading to breathing difficulty that may be life threatening.

*NH has among the highest rates of asthma in the nation.*

According to state and national survey data, asthma rates in New Hampshire are among the highest in the nation. Each year about 10 percent of adults and 8 percent of children are diagnosed with asthma, amounting to 7,000 new cases [1]. The rate of asthma among New Hampshire adults has increased significantly since 2000, by 27 percent (Figure 1).

**Figure 1:** Adults Currently Having Asthma, 2000-2009



Source: NH BRFSS

Persons with asthma tend to report a poorer quality of life than people without asthma, but not if their asthma is under good control [2]. Asthma can be successfully managed in the outpatient setting by regular physician follow ups, minimizing exposure to triggers, treatment of accompanying conditions, and patients' self-management. Seeking medical help early, before a full asthmatic attack develops, is very important. Most visits to the emergency department could be avoided by following these measures [3].

Hospital discharge data indicate that the highest rates of emergency department visits for asthma are found in six of the seven northernmost public health regions and in the cities of Manchester and Nashua (although not in their public health regions) (Figure 2).

Among the possible reasons for poor asthma control are inadequate insurance coverage, including coverage for drugs, limited access to primary care providers, and lack of adherence to national guidelines by both patients and providers. In New Hampshire, 90 percent of adults and 95 percent of children report having a personal health-care provider and health insurance. Nevertheless, adults with asthma were twice as likely as adults without asthma to indicate that they did not see a doctor when they needed to because of cost (19.6 percent vs. 9.5 percent).

Additional factors that impact a person's ability to manage asthma successfully are smoking (personal and secondhand), obesity, lack of physical activity, and depression. According to 2007–2008 BRFSS survey data, while smoking rates have decreased among adults

without asthma, they have not among people with asthma, and 30 percent of children with asthma lived in a household where someone smoked. Adults with asthma are more likely not to have had any physical activity in the past 30 days, are one and a half times more likely to be obese, and are three times more likely to report major depression [4].

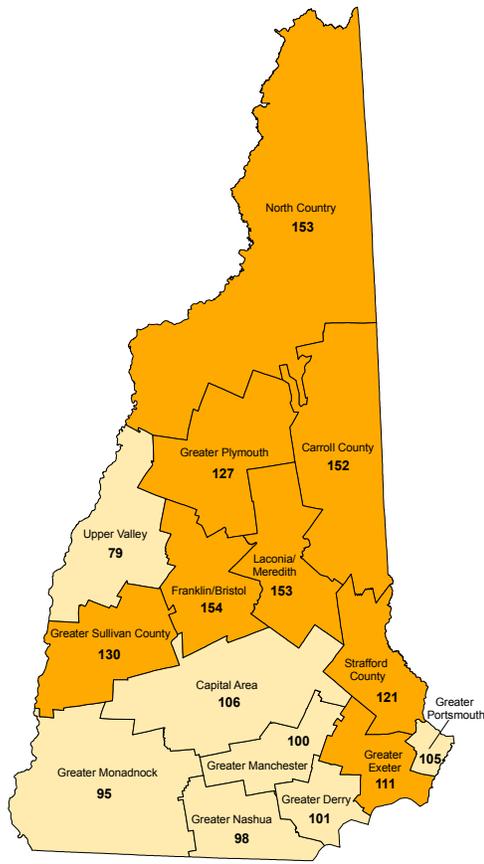
Asthma affects many people in New Hampshire, but proper management of the disease can facilitate healthy and active lives for those affected.

#### References:

1. Stillman, L. Living with Asthma in New England: Results from the 2006 BRFSS and Call-Back Surveys. Asthma Regional Council. February 2010, [www.asthmaregionalcouncil.org](http://www.asthmaregionalcouncil.org). Accessed September 27, 2010.
2. Williams SA, et al., The Association Between Asthma Control and Health Care Utilization, Work Productivity Loss and Health-Related Quality of Life. *Journal of Occ and Env Med.* 2009; 51(7): 780-785.
3. Hoppin P, et al., Investing in Best Practices for Asthma: A Business Case- August 2010 Update. Asthma Regional Council. August 2010, [www.asthmaregionalcouncil.org](http://www.asthmaregionalcouncil.org). Accessed September 27, 2010.
4. Traore EA. Asthma Burden Report - New Hampshire 2010. New Hampshire Department of Health and Human Services, Division of Public Health Services, Asthma Control Program. June, 2010. <http://www.dhhs.nh.gov/dphs/cdpc/asthma/publications.htm>. Accessed September 27, 2010.

**For more information about the  
NH Asthma Control Program visit  
[www.dhhs.nh.gov/dphs/cdpc/  
asthma](http://www.dhhs.nh.gov/dphs/cdpc/asthma)**

**Figure 2:** Emergency Discharges Due to Unintentional Injuries by Region, 2003–2007



**Statistical comparison to state estimate**

- Significantly lower
- No significant difference
- Significantly higher

Source: NH hospital discharge data  
Note: Shown in injuries per 1,000 population

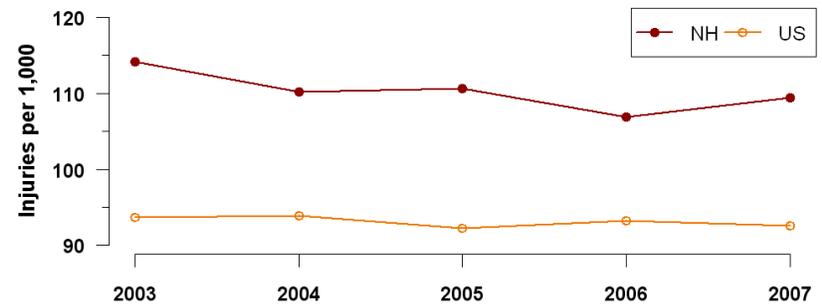
*Rates of emergency department visits for unintentional injuries have been significantly higher in NH compared with the US.*

## Unintentional Injury

Unintentional injuries are the leading cause of death for all New Hampshire residents between 1 and 34 years of age. After the first year of life, more children die of unintentional injuries than all other causes of death combined. Emergency department visit rates due to unintentional injuries in New Hampshire have been consistently higher than national rates (Figure 1) [1]. Within the State, the northern public health regions have significantly higher rates of unintentional injury compared with the southern regions (Figure 2).

*After the first year of life, more children in NH die of unintentional injuries than all other causes of death combined.*

**Figure 1:** Unintentional Injury Emergency Department Visit Rates

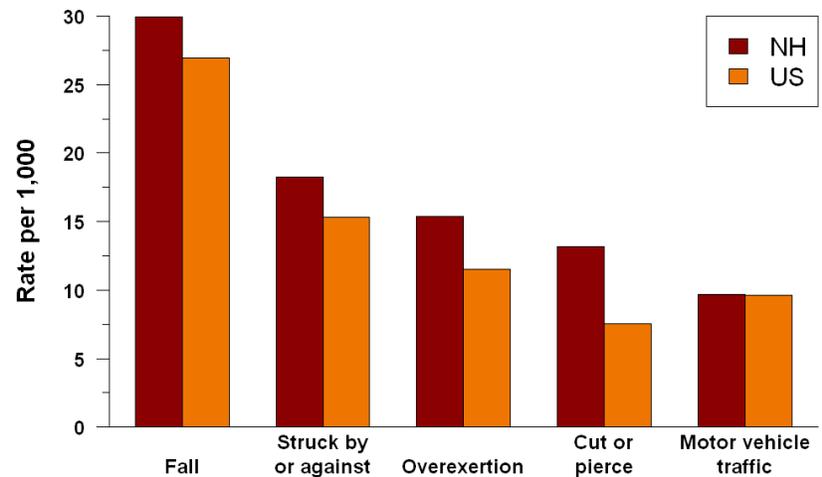


Sources: NH hospital discharge data, CDC WISQARS

In 2007, non-fatal injuries cost approximately \$134 million in charges for acute emergency department care and \$165 million for inpatient care (not including follow-up outpatient care or rehabilitation). Of those costs, \$40 million was for traumatic brain injuries alone.

Falls account for more unintentional injuries than any other cause, both in New Hampshire and the US (Figure 3). All leading causes, except motor vehicle crashes, are significantly higher in New Hampshire than nationally.

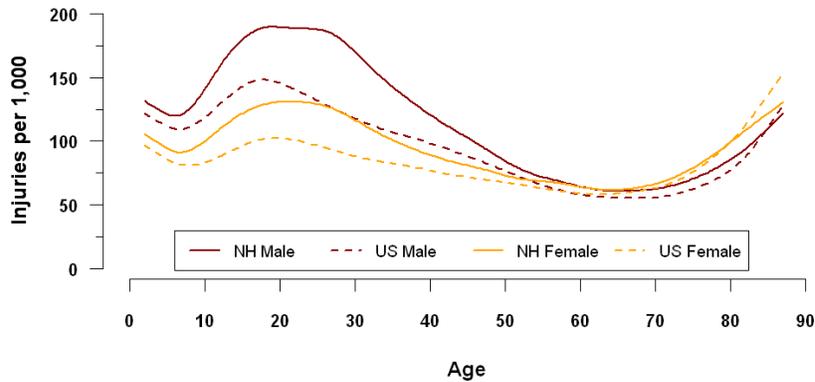
**Figure 3:** Top Five Causes of Unintentional Injury Emergency Visits, 2003–2007



Sources: NH hospital discharge data, CDC WISQARS

Older adolescents and young adults (ages 15–24) have the highest rates of emergency department visits for unintentional injury (Figure 4), but the highest death rate is among adults 65 years and older. Males are more likely to present with unintentional injuries to the emergency department than females (Figure 4) and to die as a result.

**Figure 4:** Emergency Discharges Due to Unintentional Injuries by Age, 2003-2007



Sources: NH hospital discharge data, CDC WISQARS

Most unintentional injuries are preventable. Prevention can take many forms: equipment to prevent falls, protective equipment while playing sports, seatbelt use, and more. Detailed information on seat belt use in New Hampshire can be found in page 36.

#### Reference

[1] CDC WISQARS, <http://www.cdc.gov/injury/wisqars/index.html>

**For more information on the  
NH Injury Prevention Program  
visit [www.dhhs.nh.gov/dphs/  
bchs/mch/injury.htm](http://www.dhhs.nh.gov/dphs/bchs/mch/injury.htm)**

## Poisoning Deaths

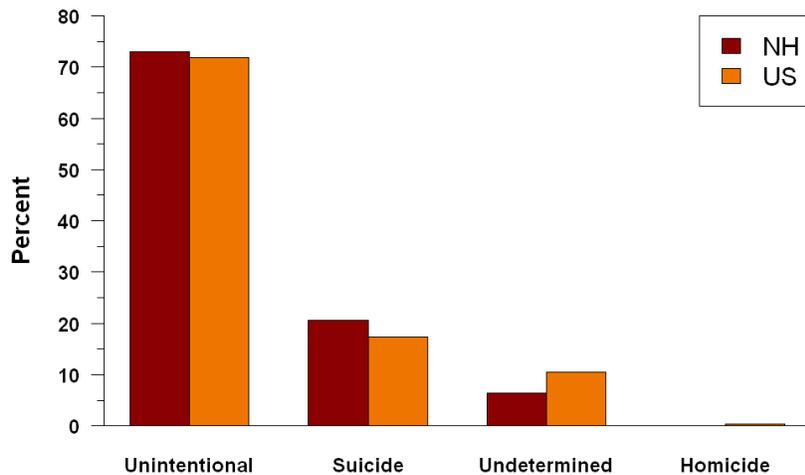
A poison is any substance that is harmful to the body when ingested, inhaled, injected, or absorbed through the skin. Any substance can be poisonous if too much is taken. Poisoning can either be intentional (such as suicide) or unintentional (such as drug overdose).

*Drug overdose is the second leading cause of death from unintentional injury in NH.*

In New Hampshire, 73 percent of the poisoning deaths from 2003 to 2007 were unintentional and 21 percent were due to suicide; these rates are similar to national data (Figure 1) [1].

*The death rate due to poisoning has been increasing in NH. In 2007, the NH death rate was significantly higher than the national rate.*

**Figure 1:** Injury Intent for Poisoning Deaths, 2003-2007

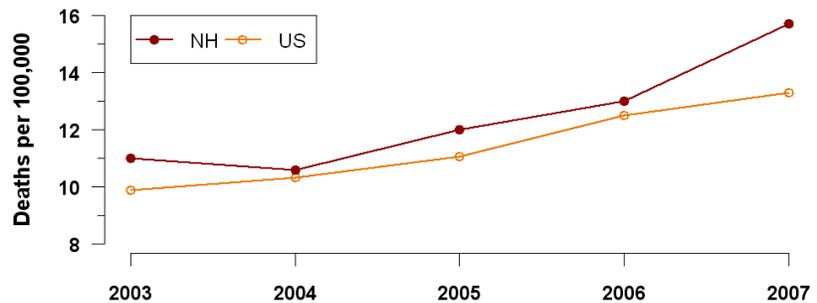


Sources: NH DVRA, CDC WISQARS

More than 50 percent of poisoning deaths in New Hampshire in this period (2003–2007) were from narcotics, including pain medications, and hallucinogens (like LSD).

The death rate due to poisoning has been rising in both New Hampshire and the nation, but according to the most recent available data, in 2007 the New Hampshire poison-related death rate was significantly higher than that of the US (15.7 vs. 13.3 per 100,000) (Figure 2) [1].

**Figure 2:** Poisoning Death Rates, 2003-2007

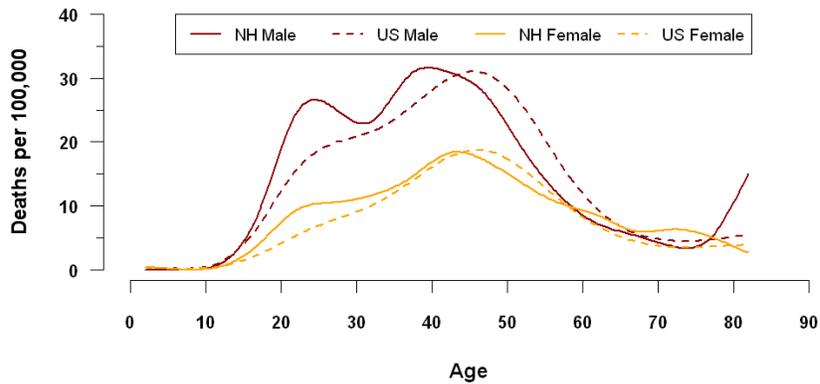


Sources: NH DVRA, CDC WISQARS

More poisoning deaths in New Hampshire occur in males, consistent with national data.

Death rates by age are highest in the 35–49 age groups, similar to national data; however, among young adults (20–24 years old) the New Hampshire rate is significantly higher than the US data (20.4 vs. 11.5 per 100,000). The death rate from poisoning in children is low, both in New Hampshire and nationally (Figure 3) [1].

**Figure 3:** Poisoning Death Rates by Age Group and Gender, 2003–2007



Source: CDC WISQARS

Poisoning death rates are similar among public health regions, except for the Laconia/Meredith region having a significantly higher rate (17 per 100,000).

Poisoning is a preventable injury. For children, supervision and keeping potential poisons locked up is key. For adults, prescription monitoring programs and increasing the availability of substance abuse treatment can also prevent poisonings.

#### Reference

1. CDC WISQARS, Fatal Injury Data, <http://www.cdc.gov/injury/wisqars/index.html>

**The Northern New England  
Poison Center is NH's poison  
control resource. In case of  
poisoning call 1-800-222-1222.**

# Dental Disease in Children

*Dental disease rates among children in NH have improved in recent years, but geographic disparities still exist.*

An estimated 25 percent of children and adolescents in the US experience 80 percent of all tooth decay [1]. Poor oral health leads to pain and restricted activity, is a risk factor for infections, and is associated with chronic diseases such as heart disease, stroke, and diabetes. Children from families with low incomes are at higher risk for untreated decay and are more likely to miss school days compared with children from families of higher incomes [1].

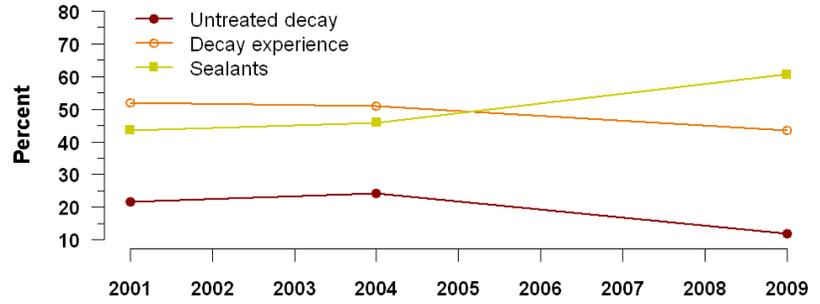
Tooth decay can be decreased with application of dental sealants, thin plastic coatings placed on the chewing surfaces of molar teeth to create a barrier against bacterial plaque. Healthy People 2010 set the following goals for oral health in children [2]:

- Decrease the proportion of 6–8 year-old children with tooth decay experience to 42 percent and those with untreated tooth decay to 21 percent.
- Increase the proportion of children aged 8 years who have received dental sealants on their permanent molar teeth to 50 percent.

The 2009 Healthy Smiles–Healthy Growth NH survey of third grade students showed an improvement in all oral health indicators compared with previous years. Tooth decay experience decreased from 52 percent to 44 percent, untreated decay decreased significantly from 22 percent to 12 percent, and sealants use increased significantly from 46 percent to 60 percent in 2009 (Figure 1).

*Sixty percent of NH's third grade students have dental sealants, a known preventive measure to decrease tooth decay.*

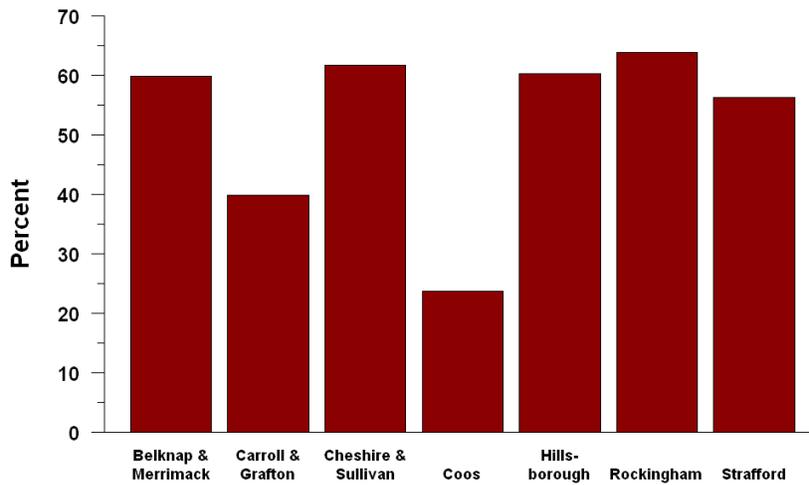
**Figure 1:** Oral Health Trends Among Third Graders



Source: NH Healthy Smiles-Healthy Growth survey

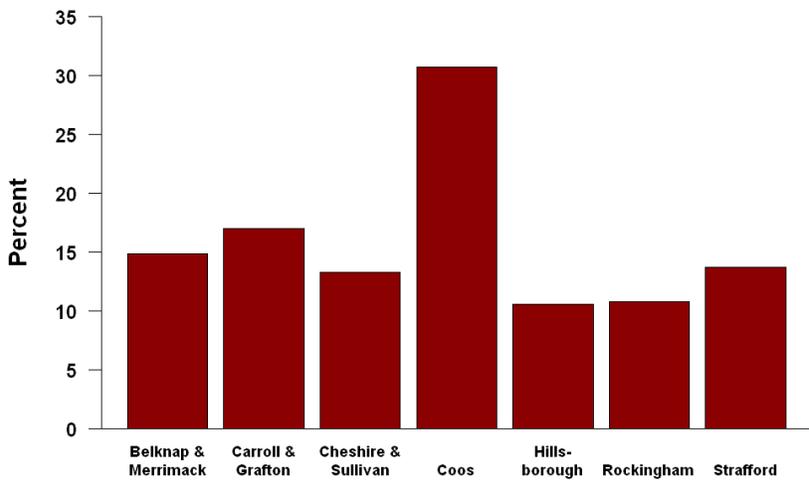
Despite the overall improvement in the State, geographic disparities persist. Children from families with lower incomes or less education have fewer dental visits and fewer dental sealants. Third grade students in Coos County had twice as much dental disease and received half as many dental sealants compared with children in other counties (Figures 2 and 3).

**Figure 2:** Third Grade Students with Sealants, by County



Source: Healthy Smiles-Healthy Growth survey

**Figure 3:** Third Grade Students with Untreated Decay, by County



Source: Healthy Smiles-Healthy Growth survey

Major strides have been made to improve oral health for children in New Hampshire, but further work is needed where disparity exists. School-based dental programs that apply sealants in children who do not have regular dental care could be helpful in further preventing tooth decay.

References

1. Adams PF, Murano MA. 1995. Current estimates from the National Health Interview Survey, 1994 (Vital and Health Statistics: Series 10, data from the National Health Survey; no. 193). Hyattsville, MD: US Department of Health and Human Services, National Center for Health Statistics.
2. Healthy People objectives page, [http://www.cdc.gov/oralhealth/topics/healthy\\_people.htm](http://www.cdc.gov/oralhealth/topics/healthy_people.htm)

## Appendix 1: NH Public Health Regions

Town	Public Health Region	County
Atkinson & Gilmanton Grant	North Country	Coos
Acworth	Greater Sullivan County	Sullivan
Albany	Carroll County	Carroll
Alexandria	Franklin/Bristol	Grafton
Allenstown	Capital Area	Merrimack
Alstead	Greater Monadnock	Cheshire
Alton	Laconia/Meredith	Belknap
Amherst	Greater Nashua	Hillsborough
Andover	Franklin/Bristol	Merrimack
Antrim	Greater Monadnock	Hillsborough
Ashland	Greater Plymouth	Grafton
Atkinson	Greater Derry	Rockingham
Auburn	Greater Manchester	Rockingham
Barnstead	Capital Area	Belknap
Barrington	Strafford County	Strafford
Bartlett	Carroll County	Carroll
Bath	North Country	Grafton
Bean's Grant	North Country	Coos
Bean's Purchase	Carroll County	Coos
Bedford	Greater Manchester	Hillsborough
Belmont	Laconia/Meredith	Belknap
Bennington	Greater Monadnock	Hillsborough
Benton	North Country	Grafton
Berlin	North Country	Coos
Bethlehem	North Country	Grafton
Boscawen	Capital Area	Merrimack
Bow	Capital Area	Merrimack
Bradford	Capital Area	Merrimack
Brentwood	Greater Exeter	Rockingham
Bridgewater	Franklin/Bristol	Grafton
Bristol	Franklin/Bristol	Grafton
Brookfield	Carroll County	Carroll
Brookline	Greater Nashua	Hillsborough
Cambridge	North Country	Coos
Campton	Greater Plymouth	Grafton
Canaan	Upper Valley	Grafton
Candia	Greater Manchester	Rockingham
Canterbury	Capital Area	Merrimack
Carroll	North Country	Coos
Center Harbor	Laconia/Meredith	Belknap
Charlestown	Greater Sullivan County	Sullivan
Chandlers Purchase	North Country	Coos
Chatham	Carroll County	Carroll
Chester	Greater Derry	Rockingham
Chesterfield	Greater Monadnock	Cheshire
Chichester	Capital Area	Merrimack
Claremont	Greater Sullivan County	Sullivan
Clarksville	North Country	Coos
Colebrook	North Country	Coos
Columbia	North Country	Coos
Concord	Capital Area	Merrimack
Conway	Carroll County	Carroll
Cornish	Upper Valley	Sullivan
Crawfords Purchase	North Country	Coos
Croydon	Greater Sullivan County	Sullivan

# APPENDIX

Town	Public Health Region	County
Cutt's Grant	North Country	Coos
Dalton	North Country	Coos
Danbury	Franklin/Bristol	Merrimack
Danville	Greater Derry	Rockingham
Dartmouth Second College Grant	North Country	Coos
Deerfield	Greater Manchester	Rockingham
Deering	Capital Area	Hillsborough
Derry	Greater Derry	Rockingham
Dix's Grant	North Country	Coos
Dixville Township	North Country	Coos
Dorchester	Upper Valley	Grafton
Dover	Strafford County	Strafford
Dublin	Greater Monadnock	Cheshire
Dummer	North Country	Coos
Dunbarton	Capital Area	Merrimack
Durham	Strafford County	Strafford
East Kingston	Greater Exeter	Rockingham
Easton	North Country	Grafton
Eaton	Carroll County	Carroll
Effingham	Carroll County	Carroll
Ellsworth	Greater Plymouth	Grafton
Enfield	Upper Valley	Grafton
Epping	Greater Exeter	Rockingham
Epsom	Capital Area	Merrimack
Errol	North Country	Coos
Erving's Location	North Country	Coos
Exeter	Greater Exeter	Rockingham
Farmington	Strafford County	Strafford
Fitzwilliam	Greater Monadnock	Cheshire
Francestown	Greater Monadnock	Hillsborough
Franconia	North Country	Grafton
Franklin	Franklin/Bristol	Merrimack
Freedom	Carroll County	Carroll
Fremont	Greater Exeter	Rockingham
Gilford	Laconia/Meredith	Belknap
Gilmanton	Laconia/Meredith	Belknap
Gilsum	Greater Monadnock	Cheshire
Goffstown	Greater Manchester	Hillsborough
Gorham	North Country	Coos
Goshen	Greater Sullivan County	Sullivan
Grafton	Upper Valley	Grafton
Grantham	Upper Valley	Sullivan
Greenfield	Greater Monadnock	Hillsborough
Greenland	Greater Portsmouth	Rockingham
Green's Grant	Carroll County	Coos
Greenville	Greater Monadnock	Hillsborough
Groton	Franklin/Bristol	Grafton
Hadle'ys Purchase	North Country	Coos
Hale's Location	Carroll County	Carroll
Hampstead	Greater Derry	Rockingham
Hampton	Greater Exeter	Rockingham
Hampton Falls	Greater Exeter	Rockingham
Hancock	Greater Monadnock	Hillsborough
Hanover	Upper Valley	Grafton
Harrisville	Greater Monadnock	Cheshire
Hart's Location	Carroll County	Carroll

<b>Town</b>	<b>Public Health Region</b>	<b>County</b>
Haverhill	North Country	Grafton
Hebron	Franklin/Bristol	Grafton
Henniker	Capital Area	Merrimack
Hill	Franklin/Bristol	Merrimack
Hillsborough	Capital Area	Hillsborough
Hinsdale	Greater Monadnock	Cheshire
Holderness	Greater Plymouth	Grafton
Hollis	Greater Nashua	Hillsborough
Hooksett	Greater Manchester	Merrimack
Hopkinton	Capital Area	Merrimack
Hudson	Greater Nashua	Hillsborough
Jackson	Carroll County	Carroll
Jaffrey	Greater Monadnock	Cheshire
Jefferson	North Country	Coos
Keene	Greater Monadnock	Cheshire
Kensington	Greater Exeter	Rockingham
Kilkenny	North Country	Coos
Kingston	Greater Exeter	Rockingham
Laconia	Laconia/Meredith	Belknap
Lancaster	North Country	Coos
Landaff	North Country	Grafton
Langdon	Greater Sullivan County	Sullivan
Lebanon	Upper Valley	Grafton
Lee	Strafford County	Strafford
Lempster	Greater Sullivan County	Sullivan
Lincoln	Greater Plymouth	Grafton
Lisbon	North Country	Grafton
Litchfield	Greater Nashua	Hillsborough
Littleton	North Country	Grafton
Livermore	Greater Plymouth	Grafton
Londonderry	Greater Derry	Rockingham
Loudon	Capital Area	Merrimack
Low And Burbank's Grant	North Country	Coos
Lyman	North Country	Grafton
Lyme	Upper Valley	Grafton
Lyndeborough	Greater Nashua	Hillsborough
Madbury	Strafford County	Strafford
Madison	Carroll County	Carroll
Manchester	Greater Manchester	Hillsborough
Marlborough	Greater Monadnock	Cheshire
Marlow	Greater Monadnock	Cheshire
Martin's Location	Carroll County	Coos
Mason	Greater Nashua	Hillsborough
Meredith	Laconia/Meredith	Belknap
Merrimack	Greater Nashua	Hillsborough
Middleton	Strafford County	Strafford
Milan	North Country	Coos
Milford	Greater Nashua	Hillsborough
Millsfield	North Country	Coos
Milton	Strafford County	Strafford
Monroe	North Country	Grafton
Mont Vernon	Greater Nashua	Hillsborough
Moultonborough	Laconia/Meredith	Carroll
Nashua	Greater Nashua	Hillsborough
Nelson	Greater Monadnock	Cheshire
New Boston	Greater Manchester	Hillsborough

# APPENDIX

Town	Public Health Region	County
New Castle	Greater Portsmouth	Rockingham
New Durham	Strafford County	Strafford
New Hampton	Franklin/Bristol	Belknap
New Ipswich	Greater Monadnock	Hillsborough
New London	Greater Sullivan County	Merrimack
Newbury	Greater Sullivan County	Merrimack
Newfields	Greater Exeter	Rockingham
Newington	Greater Portsmouth	Rockingham
Newmarket	Greater Exeter	Rockingham
Newport	Greater Sullivan County	Sullivan
Newton	Greater Exeter	Rockingham
North Hampton	Greater Portsmouth	Rockingham
Northfield	Franklin/Bristol	Merrimack
Northumberland	North Country	Coos
Northwood	Capital Area	Rockingham
Nottingham	Greater Exeter	Rockingham
Odell	North Country	Coos
Orange	Upper Valley	Grafton
Orford	Upper Valley	Grafton
Ossipee	Carroll County	Carroll
Pelham	Greater Nashua	Hillsborough
Pembroke	Capital Area	Merrimack
Peterborough	Greater Monadnock	Hillsborough
Piermont	Upper Valley	Grafton
Pinkham's Grant	Carroll County	Coos
Pittsburg	North Country	Coos
Pittsfield	Capital Area	Merrimack
Plainfield	Upper Valley	Sullivan
Plaistow	Greater Derry	Rockingham
Plymouth	Greater Plymouth	Grafton
Portsmouth	Greater Portsmouth	Rockingham
Randolph	North Country	Coos
Raymond	Greater Exeter	Rockingham
Richmond	Greater Monadnock	Cheshire
Rindge	Greater Monadnock	Cheshire
Rochester	Strafford County	Strafford
Rollinsford	Strafford County	Strafford
Roxbury	Greater Monadnock	Cheshire
Rumney	Greater Plymouth	Grafton
Rye	Greater Portsmouth	Rockingham
Salem	Greater Derry	Rockingham
Salisbury	Franklin/Bristol	Merrimack
Sanbornton	Franklin/Bristol	Belknap
Sandown	Greater Derry	Rockingham
Sandwich	Laconia/Meredith	Carroll
Sargent's Purchase	Carroll County	Coos
Seabrook	Greater Exeter	Rockingham
Sharon	Greater Monadnock	Hillsborough
Shelburne	North Country	Coos
Somersworth	Strafford County	Strafford
South Hampton	Greater Exeter	Rockingham
Springfield	Greater Sullivan County	Sullivan
Stark	North Country	Coos
Stewartstown	North Country	Coos
Stoddard	Greater Monadnock	Cheshire
Strafford	Strafford County	Strafford

<b>Town</b>	<b>Public Health Region</b>	<b>County</b>
Stratford	North Country	Coos
Stratham	Greater Exeter	Rockingham
Success	North Country	Coos
Sugar Hill	North Country	Grafton
Sullivan	Greater Monadnock	Cheshire
Sunapee	Greater Sullivan County	Sullivan
Surry	Greater Monadnock	Cheshire
Sutton	Greater Sullivan County	Merrimack
Swanzy	Greater Monadnock	Cheshire
Tamworth	Carroll County	Carroll
Temple	Greater Monadnock	Hillsborough
Thompson & Meserve Purchase	North Country	Coos
Thornton	Greater Plymouth	Grafton
Tilton	Franklin/Bristol	Belknap
Troy	Greater Monadnock	Cheshire
Tuftonboro	Carroll County	Carroll
Unity	Greater Sullivan County	Sullivan
Wakefield	Carroll County	Carroll
Walpole	Greater Monadnock	Cheshire
Warner	Capital Area	Merrimack
Warren	Greater Plymouth	Grafton
Washington	Capital Area	Sullivan
Waterville Valley	Greater Plymouth	Grafton
Weare	Capital Area	Hillsborough
Webster	Capital Area	Merrimack
Wentworth	Greater Plymouth	Grafton
Wentworth's Location	North Country	Coos
Westmoreland	Greater Monadnock	Cheshire
Whitefield	North Country	Coos
Wilmot	Greater Sullivan County	Merrimack
Wilton	Greater Nashua	Hillsborough
Winchester	Greater Monadnock	Cheshire
Windham	Greater Derry	Rockingham
Windsor	Capital Area	Hillsborough
Wolfeboro	Carroll County	Carroll
Woodstock	Greater Plymouth	Grafton

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