



New Hampshire Oral Health Data 2010



New Hampshire Department of Health and Human Services
Division of Public Health Services
Bureau of Community Health Services
Rural Health and Primary Care Section
Oral Health Program

New Hampshire Oral Health Data

2010

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MESSAGE FROM THE COMMISSIONER

The oral health of the citizens of the State of New Hampshire is an important issue to the Department of Health and Human Services. The impact to our State in terms of missed work and school due to poor oral health is staggering. We need to get the message to our residents that taking care of their teeth, gums, and mouth is truly important.

The Department is working diligently to improve access to oral healthcare for the people of New Hampshire. We feel that oral health is a significant part of the overall health picture for the State and one DHHS takes seriously.

I would like to thank the Division of Public Health Services for their work in producing a comprehensive report on oral health. The Department's dedicated public health staff have done an excellent job in developing a report that identifies both our strengths and those areas where we need to improve.

Nicholas A. Toumpas, Commissioner
New Hampshire Department of Health and Human Services

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EXECUTIVE SUMMARY

Dental Visits -- In 2008, 76.8% of adults in New Hampshire had visited a dentist or dental clinic during the past year, similar to the 2006 figure of 77.1%. There were positive associations between visiting a dentist and income and education level; as a person's income and education increased, they became more likely to have seen a dentist in the past year.

Tooth Loss -- In 2008, 14.6% of New Hampshire adults had lost 6 or more teeth due to decay or gum disease, comparable to 15.1% estimated in 2006. As expected, tooth loss was strongly associated with increasing age; in 2008, 18.5% of persons ≥ 65 years of age had lost all of their teeth. In 2006, the number was 18.6%. There were strong associations between tooth loss and both income and education. For example, in 2008, 36.3% of adults aged 65 years and older with income less than \$15,000 had lost all their teeth compared with 5.5% of adults with income more than \$50,000.

Hospital and Community-Based Dental Programs -- In each State Fiscal Year (July 1st to June 30th) from 2007 through 2009, nine publicly funded hospital- and community-based dental programs reported that they treated over 15,000 children and adults. In State Fiscal Years 2005 through 2007, six publicly funded hospital- and community-based dental programs reported that they treated over 13,500 children and adults. Each year, about 25% of children treated in the hospital- and community-based dental programs receive protective dental sealants.

2008 Head Start *Healthy Smiles-Healthy Growth* Survey -- Assessments that took place in 27 randomly selected New Hampshire Head Start sites during the 2007-2008 school year indicated that approximately 30.6% of children attending these sites had untreated decay, 40.2% showed a history of decay, 23.4% needed dental care, and 0.8% needed urgent care due to pain or swelling.

School-Based Dental Programs -- In school year 2008-2009, there were 21 school-based dental programs serving 187 New Hampshire schools. Altogether 8,678 second and third grade students were screened to assess their oral health. Among the students screened, 18% had untreated decay, 41% had a history of decay, and 46% had dental sealants.

During school year 2007-2008, there were 20 school-based dental programs serving 180 New Hampshire schools. Altogether, 7,586 second and third grade students were screened to assess their oral health. Among the students screened, 20% had untreated decay, 44% had a history of decay (i.e., either untreated or treated decay), and 46% had dental sealants.

2009 *Healthy Smiles-Healthy Growth* Third Grade Survey -- Results of a statewide oral health and body mass index (BMI) survey among third grade students during the 2008-2009 school year indicated that, among students screened, 12.0% had untreated decay, 43.6% had a decay experience (i.e., either untreated or treated decay), and 60.4% had sealants.

Oral Cancer -- Based on the most recent data from the State cancer registry, there were 130 new cases of oral cancer diagnosed in New Hampshire in 2006 and 161 new cases in 2005. Two-thirds of cases occurred in males. There were 36 deaths from oral cancer in the State in 2006 and 33 deaths in 2005. Males comprised approximately two-thirds of the total deaths.

Fluoridation -- There are currently 10 communities in New Hampshire that fluoridate their public water supply. It is estimated that approximately 43% of New Hampshire residents served by community water systems receive fluoridated water.

Dental Health Professional Shortage Areas -- Approximately 41,690 residents (3.2% of New Hampshire's total population) of Coos County and parts of Carroll, Grafton and Hillsborough counties are among the underserved population living in the Dental Health Professional Shortage Area.

Ambulatory Care Sensitive Emergency Department Visits -- Each year, more than 15,000 emergency department (ED) visits are made by New Hampshire residents due to avoidable and preventable dental conditions. Accordingly, over \$5 million is being spent annually to manage dental conditions in hospital ED environments that are not equipped to do so.

INTRODUCTION

With the release in 2000 of *Oral Health in America: A Report of the Surgeon General* there was renewed interest in oral health as a public health issue. The Surgeon General's report highlighted the connection between oral health and overall health. It also documented the magnitude of the oral health problem in this country and the marked disparities in oral health among different population groups.

Shortly after release of the Surgeon General's report, the National Oral Health Surveillance System (NOHSS) was established.⁽²⁾ An objective of *Healthy People 2010* (#21-16) was to have an oral health surveillance system in every state. The NOHSS is a joint effort of the Centers for Disease Control and Prevention and the Association of State and Territorial Dental Directors. The purpose of NOHSS is to monitor the burden of oral health disease, use of the oral health care delivery system, and the status of community water fluoridation. NOHSS includes eight oral health indicators: dental visits, teeth cleaning, complete tooth loss, fluoridation status, caries experience, untreated caries, dental sealants, and cancer of the oral cavity and pharynx.

This document is the fifth compilation of data on oral health from the New Hampshire Department of Health and Human Services. It is an attempt to pull together current information and to make it readily available. The focus of the report is the oral health status of adults and children in New Hampshire and their access to oral health care, including preventive services. All eight NOHSS indicators are included in this report.

These oral health data can be used for multiple purposes: 1) to document the magnitude of the public health problem, 2) to monitor disease trends over time, 3) to detect changes in health care practices, 4) to evaluate prevention strategies, and 5) to facilitate planning. The data in this report can be used in assessing progress toward our goal of improving the oral health of the State's residents.

NEW FEATURES IN THIS REPORT

Since the 2004-2005 school year, all school-, community- and hospital-based oral health programs have incorporated dental sealant application into their programs' preventive services. We report the number and percentage of students served by these programs who received dental sealants during the respective school years.

New Hampshire's designated Dental Health Professional Shortage Areas (DHPSAs) have been mapped, along with population counts. We have added the map to this data report.

Results of the 2008 Head Start *Healthy Smiles-Health Growth* Survey describe the findings of the oral health assessments that took place in 27 randomly selected Head Start sites during the 2007-2008 school year.

Results of the 2009 *Healthy Smiles-Healthy Growth* Third Grade Survey describe the findings of the oral health assessment of students in 81 randomly selected schools during the 2008-2009 school year. Regional oral health disparities are described. Comparative data from statewide surveys in 2001 and 2004 are included, indicating improvements in children's oral health status overtime.

Results from the Ambulatory Care Sensitive Emergency Department Visits report on non-traumatic dental related emergency department visits from 2001-2005 are included in this report

FREQUENTLY ASKED QUESTIONS

What is a sealant?

A dental sealant is a plastic material that is usually applied to the top surface of permanent molars in children. By filling the pits and fissures of the tooth, the sealant is effective in preventing cavities. Sealants gained approval from the American Dental Association in the mid-1970s. By 1994, all states had included sealants as a benefit in their Medicaid programs.

What is water fluoridation?

Fluoridation is the controlled addition of a fluoride compound to a public water supply to bring its fluoride concentration to an optimal level to prevent cavities. Numerous studies have shown that a fluoride concentration of approximately 1 part per million in drinking water can be an effective method of preventing tooth decay. Two-thirds of the US population on a public water supply currently receives fluoridated water.

What is edentulism?

Edentulism is the loss of all of a person's natural teeth. Edentulism, especially in the elderly, is often used as a measure of a population's oral health status. Approximately 25% of persons 65 years or older in the United States are edentulous.

Why are data not presented by race or ethnicity?

Based on the 2000 United States Census, New Hampshire's population is approximately 96.0% white, 1.3% Asian, 0.7% African American, 0.2% American Indian, and 1.7% persons reporting some other race. About 1.7% of the population is of Hispanic or Latino origin. Because no single racial or ethnic minority group exceeds 1.7% of the total population, the number of oral health-related events in these groups is too small to allow meaningful analysis. As the state's demographics change and as data collection techniques improve, it may be possible to present data on racial and ethnic minorities.

What are the Centers for Disease Control and Prevention?

The Centers for Disease Control and Prevention (CDC) are part of the United States Department of Health and Human Services. CDC is considered the nation's prevention agency; it focuses on public health measures to prevent disease, disability, and death. CDC provides funds and guidance to states for their oral health efforts.

I would like to see data for a specific town but cannot find this information in the report. Why doesn't this report show town-level data or regional disparities?

New Hampshire has a relatively small population of 1.3 million people divided among 234 cities and towns. In a given year, the number of oral health-related events is too small to generate meaningful results at a town level. Regional oral health data was collected for the first time in New Hampshire for the 2009 *Healthy-Smiles Healthy Growth* Third Grade Survey. Regional oral health disparities are described in this report.

Some of the information in the report is identified as "age-adjusted." What does this mean and why is it done?

To compare populations where the distribution of age groups is different, an adjustment needs to be made. For example, the rate of cancer in New Hampshire may appear higher than that of the United States. However, this may be due to New Hampshire having proportionally more older people than the United States. By age adjusting the data, using the 2000 United States standard population, the rates can be compared without concern about differences in the age distribution of the two populations.

METHODS

Data from surveys are presented with 95% confidence intervals. Because the data were collected from a sample of the population, each estimate has a margin of error. The confidence interval reflects the degree of uncertainty for each estimate. For example in Table 1 77.6% of respondents reported having their teeth cleaned in the past year with a 95% confidence interval of 76.2-79.1%. This can be interpreted to mean that our best estimate is that 77.6% of adults in New Hampshire had their teeth cleaned during the previous 12 months, but the range that is likely to capture the true value 95% of the time could be as low as 76.2% or as high as 79.1%. In other words, the estimate from the survey has a margin of error of $\pm 1.4\%$.

When national BRFSS data are reported, the median percentage (middle value) is used as a measure of central tendency. As such, the value has no confidence intervals.

Where appropriate, oral health-related objectives from *Healthy People 2010* or *Healthy New Hampshire 2010* are given to put current data from New Hampshire in perspective. *Healthy People 2010* are a set of national health targets for the period from 2000-2010.⁽²⁾ *Healthy New Hampshire 2010* is a set of state-specific health targets for the same time period.⁽³⁾ *Healthy People 2020* national targets are currently under development.

DATA SOURCES

Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is a population-based, random-digit dialed telephone survey of civilian, non-institutionalized adults, aged 18 years and older. The survey is coordinated by the Centers for Disease Control and Prevention (CDC) and is conducted annually by all states. In New Hampshire, the Health Statistics and Data Management Section is responsible for the survey. The BRFSS includes questions on health behaviors and risk factors such as safety belt use, diet, weight control, oral health, diabetes, alcohol use, physical exercise, and preventive health screenings. The data are weighted to more accurately reflect the population by accounting for age, gender, and probability of selection. A core set of questions, including those related to oral health, is asked every three years. Additional questions on oral health can be asked annually in an optional module. In New Hampshire, 6,892 interviews were completed in 2008. New Hampshire and national data can be accessed online at: <http://www.cdc.gov/brfss/>. Information on edentulism among the elderly based on BRFSS data is also available at <http://www.cdc.gov/nohss/>.

Healthy People 2010

Healthy People 2010 is a set of national health targets for the decade from 2000 to 2010. *Healthy People 2020* guidelines are currently under development by the U.S. Department of Health and Human Services. The guidelines build on initiatives pursued over the past two decades including the 1979 Surgeon General's Report, *Healthy People*, and *Healthy People 2000: National Health Promotion and Disease Prevention Objectives*. It is designed to achieve two overarching goals: 1) increase quality and years of healthy life and 2) eliminate health disparities. A copy of *Healthy People 2010* can be obtained online at: <http://www.health.gov/healthypeople/>.

Healthy New Hampshire 2010

Healthy New Hampshire 2010 is New Hampshire's health promotion and disease prevention agenda for the first decade of the 21st century. Similar to *Healthy People 2010*, it is a compilation of health objectives for the period 2000-2010.

Hospital- and community-based dental programs

In 2007-2009, there were 17 hospital- or community-based dental programs in New Hampshire; in 2005-2007 there were 12 programs. These programs see dental patients who would otherwise have no access to dental care. Both restorative and preventive services are provided in these programs.

School-based dental programs

From 2005-2009, the number of school-based oral health programs grew from 18 programs covering 165 schools to 21 programs covering 181 schools. Approximately 50% of second and third grade students in New Hampshire public schools are being screened annually in school-based dental programs. Programs receive funding from a variety of sources including the Division of Public Health Services (DPHS) Oral Health Program, local charities, hospitals, community health centers, and local government. Most programs focus their efforts on children who have no usual source of dental care. Preventive services, such as oral health education, proper nutrition, appropriate use of fluorides, and dental sealant application are emphasized in most programs.

Hospital- and community-based dental programs report annually to the Oral Health Program on the numbers and percentage of clients receiving preventive and restorative care. School-based dental programs report annually on the number of students with untreated decay, a history of decay, and dental sealants. Data from New Hampshire community- and school-based oral health programs is compiled every two to four years in *New Hampshire Oral Health Data*, a report on the burden of oral disease in New Hampshire.

State Cancer Registry Data

Statistical information on all newly diagnosed primary cancers is reported to the New Hampshire State Cancer Registry. This database is comprised of information on reportable cancers from New Hampshire acute care hospitals and their tumor registries, medical records departments, oncology departments, physicians, and private pathology laboratories. The Registry has agreements for exchange of case information with the states of Massachusetts, Maine, Vermont, Rhode Island, Connecticut, New York, and Florida. The New Hampshire State Cancer Registry is operated by the Norris Cotton Cancer Center under a contract between the State and Dartmouth Medical School. The Health Statistics and Data Management Section in the New Hampshire Department of Health and Human Services analyzes the records of newly diagnosed cases of cancer (incidence data) collected by the New Hampshire State Cancer Registry.

Third Grade Oral Health Survey

The third statewide oral health survey was conducted from September 2008 to June 2009. This survey combined oral health and height and weight assessments of third grade students in a collaborative effort that optimized data collection in New Hampshire schools. The oral health screening protocol was adopted from a standard protocol, *Basic Screening Surveys*.⁽⁴⁾ The third grade survey sample utilized a systematic stratified design of 81 schools with 4,725 students enrolled in selected classrooms. Eighty-one schools (100%) participated in the survey and 3,015 (63.8%) students were surveyed to assess their oral health.

Vital Statistics

New Hampshire law requires that reports of all births, deaths, fetal deaths, marriages, and divorces be filed with the office of the State Registrar in the Division of Vital Records Administration of the Department of State. The Health Statistics and Data Management Section analyze these data. Depending on the event, filings are made by hospital personnel, physicians, funeral directors, city/town clerks, attorneys, and clerks of the courts. Reports of New Hampshire resident births and deaths in other states and Canada are provided to the State Registrar, for statistical purposes only, under an inter-state/Canadian agreement for the exchange of vital events information.

For death certificates, the cause of death reported is the underlying cause of death. In a death record, the underlying cause of death is the specific disease, condition, or injury that initiated the chain of events leading to death. The underlying cause of death is not always the same as the immediate cause of death. For example, if a person was hospitalized for oral cancer, but developed pneumonia and died while in the hospital, the underlying cause of death would be oral cancer.

Water Fluoridation Reporting System

The Water Fluoridation Reporting System (WFRS) is maintained by the Centers for Disease Control and Prevention, and the New Hampshire Departments of Health and Human Services and Environmental Services. The system contains fluoridation information for each public water system in the State. Additional information is available online at: <http://apps.nccd.cdc.gov/mwf/index.asp>.

Youth Tobacco Survey

The 2009 New Hampshire Youth Tobacco Statewide Survey (NHYS) is the fifth comprehensive survey of tobacco-related knowledge, attitudes and behaviors among New Hampshire public school students in grades 9 through 12. A two-stage cluster sample design was used to produce a representative sample of students. In the first stage, 68 high schools were randomly selected with probability proportional to their enrollment size. In the second stage, classes were randomly selected from within the participating schools. All students in the selected classes were eligible to participate. The 2009, NHYS used a pencil and paper questionnaire consisting of 72 multiple-choice questions. Students completed a self-administered questionnaire in the classroom, recording their answers on an answer sheet. Results were obtained anonymously and the overall response rate was 67% for high schools. Tobacco use has a significant impact on the oral health status of the population.

Dental Health Professional Shortage Area

Based upon criteria established by the U.S. Department of Health and Human Services' Health Resources and Services Administration, there are three different types of Health Professional Shortage Areas (HPSA), each with its own designation requirements. The three types include: geographic area, population groups, and facilities. The New Hampshire Division of Public Health Services, Rural Health and Primary Care Section develops and submits shortage designation applications which are approved by the Bureau of Shortage Designations at HRSA. Additional information is available on-line at: <http://bhpr.hrsa.gov/shortage/dental.htm>.

2007 Head Start *Healthy Smiles – Healthy Growth* Survey

The New Hampshire Head Start *Healthy Smiles – Healthy Growth* Survey was conducted between October 2007 and February 2008 in 27 randomly selected Head Start sites for oral health assessments. The goal of the survey was to collect uniform information related to the oral health and height/weight status of children ages three to five years enrolled in NH Head Start and to use this information for surveillance, intervention planning and evaluation.

Ambulatory Care Sensitive Emergency Department Visits

The New Hampshire Outpatient Hospital Discharge dataset includes Emergency Department (ED) visits from all licensed EDs in New Hampshire as well as records of New Hampshire residents who visited an ED in Maine, Vermont, or Massachusetts. ED encounters during calendar years 2001-2008 that did not result in admission into the hospital were analyzed to assess the use of ED for dental services. Records for those transferred from an ED to another hospital and then hospitalized were included. Additionally, in the dataset one person might account for multiple visits. ED visits for individuals with unknown residence or residences outside of New Hampshire were excluded.

BEHAVIORAL RISK FACTOR SURVEILLANCE SYSTEM

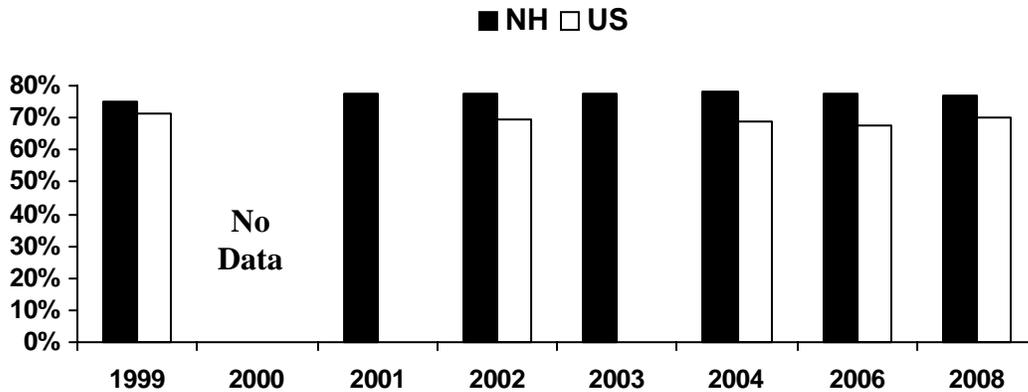
Table 1. Adults who reported having their teeth cleaned by a dentist or dental hygienist within the past year – New Hampshire, 2006

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	77.6	76.2 - 79.1
Male	75.7	73.5 - 78.0
Female	79.5	77.8 - 81.2
18-24 Years	76.6	70.0 - 83.3
25-34 Years	69.9	65.7 - 74.2
35-44 Years	76.2	73.2 - 79.3
45-54 Years	80.9	78.6 - 83.2
55-64 Years	81.6	79.0 - 84.2
65+ Years	81.2	78.6 - 83.7
< \$15,000	49.0	41.3 - 56.7
\$15,000 - \$24,999	57.9	52.3 - 63.5
\$25,000 - \$34,999	64.5	59.2 - 69.8
\$35,000 - \$49,999	74.4	70.3 - 78.9
\$50,000 +	86.4	84.7 - 88.1
Did Not Graduate High School	49.4	40.9 - 57.9
Graduated High School	70.7	67.7 - 73.7
Attended College or Tech School	78.1	75.4 - 80.9
Graduated College or Tech School	85.4	83.6 - 87.1

Table 2. Adults who reported having their teeth cleaned by a dentist or dental hygienist within the past year – New Hampshire, 2008

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	76.9	75.4-78.4
Male	74.3	71.9-76.7
Female	79.4	77.6-81.1
18-24 Years	74.1	66.9-81.4
25-34 Years	67.7	63.2-72.2
35-44 Years	76.9	73.8-79.9
45-54 Years	79.1	76.5-81.7
55-64 Years	81.3	78.8-83.7
65+ Years	82.2	80.0-84.4
< \$15,000	43.2	34.7-51.8
\$15,000 - \$24,999	50.4	44.4-56.4
\$25,000 - \$34,999	72.1	67.0-77.2
\$35,000 - \$49,999	69.9	65.6-74.2
\$50,000 +	86.0	84.3-87.7
Did Not Graduate High School	48.1	39.5-56.7
Graduated High School	66.5	63.2-69.8
Attended College or Tech School	74.6	71.5-77.8
Graduated College or Tech School	87.1	85.4-88.9

Figure 1. Adults who reported having their teeth cleaned by a dentist or dental hygienist within the past year – New Hampshire, 1999-2008 and United States, 1999, 2002, 2004, 2006, and 2008



Comment: There were statistically significant associations between teeth cleaning and income and education level. Those with higher incomes were more likely to have had an annual cleaning than those with lower incomes. College graduates were more likely to have had their teeth cleaned during the past year than were persons with less education.

Method: People who had never visited a dentist or dental clinic and those who had lost all of their teeth were not asked this question.

Healthy People 2010: Objective #21-10 is to increase the proportion of children and adults who use the oral health care system each year to 56%. This objective uses data from the Medical Expenditure Panel Survey, which is not comparable to data from the Behavioral Risk Factor Surveillance System.

Healthy New Hampshire 2010: No objective.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Disease Control and Laboratory Sciences, Health Statistics and Data Management Section.

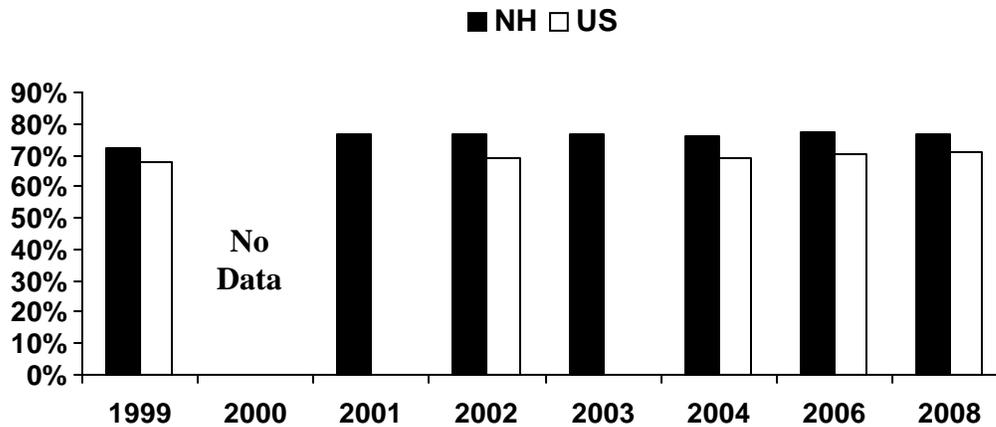
Table 3. Adults who reported visiting a dentist or dental clinic within the past year for any reason – New Hampshire, 2006

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	77.1	75.8 - 78.4
Male	76.0	73.8 - 78.2
Female	78.2	76.6 - 79.8
18-24 Years	78.5	72.1 - 84.9
25-34 Years	72.6	68.5 - 76.7
35-44 Years	77.9	75.0 - 80.8
45-54 Years	82.3	80.1 - 84.5
55-64 Years	77.8	75.2 - 80.4
65+ Years	72.5	69.9 - 75.1
< \$15,000	49.0	42.3 - 55.7
\$15,000 - \$24,999	55.0	50.0 - 60.0
\$25,000 - \$34,999	65.2	60.3 - 70.1
\$35,000 - \$49,999	74.8	71.0 - 78.6
\$50,000 +	87.3	85.7 - 88.9
Did Not Graduate High School	45.4	38.5 - 52.3
Graduated High School	68.8	66.0 - 71.6
Attended College or Tech School	79.7	77.2 - 82.2
Graduated College or Tech School	86.4	84.7 - 88.1

Table 4. Adults who reported visiting a dentist or dental clinic within the past year for any reason – New Hampshire, 2008

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	76.8	75.4-78.2
Male	74.9	72.6-77.2
Female	78.6	76.9-80.2
18-24 Years	76.8	69.8-83.8
25-34 Years	69.0	64.5-73.5
35-44 Years	80.7	77.9-83.5
45-54 Years	79.3	76.7-81.8
55-64 Years	79.6	77.1-82.0
65+ Years	74.2	71.9-76.4
<\$15,000	45.6	38.5-52.8
\$15,000 - \$24,999	53.4	48.0-58.8
\$25,000 - \$34,999	69.2	64.5-73.9
\$35,000 - \$49,999	71.7	67.6-75.8
\$50,000 +	86.2	84.5-87.9
Did Not Graduate High School	46.8	39.4-54.3
Graduated High School	66.6	63.7-69.6
Attended College or Tech School	75.5	72.5-78.5
Graduated College or Tech School	87.7	86.0-89.3

Figure 2. Adults who reported visiting a dentist or dental clinic within the past year for any reason – New Hampshire, 1999-2004, 2006 and 2008 and United States, 1999, 2002, 2004, 2006, and 2008



Comment: There were statistically significant associations between visiting a dentist and income and education. As income increased so did the likelihood of having seen a dentist in the past year. Increasing educational attainment was also associated with having seen a dentist during the past year. Persons of younger age were more likely to have visited a dentist than persons 65 years of age and older.

In 2008, 77% of adults in New Hampshire reported visiting a dentist or dental clinic in the past year, which compares favorably with the national estimate of 71% from 2008.

Method: This question was asked of all survey participants. Data analysis excluded persons who responded “Don’t Know/Not Sure” or “Refused” to this question. Data were available for New Hampshire for 1999, 2001-2004, 2006, and 2008 and for the United States for 1999, 2002, 2004, 2006, and 2008.

Healthy People 2010: (Objective #21-10) Increase the proportion of children and adults who use the oral health care system each year to 56%. National data for this objective were obtained from the Medical Expenditure Panel Survey and therefore cannot be compared directly with results from the Behavioral Risk Factor Surveillance System.

Healthy New Hampshire 2010: No objective.

Data Source: BRFSS prevalence estimates available at: <http://www.cdc.gov/brfss/index.htm>.

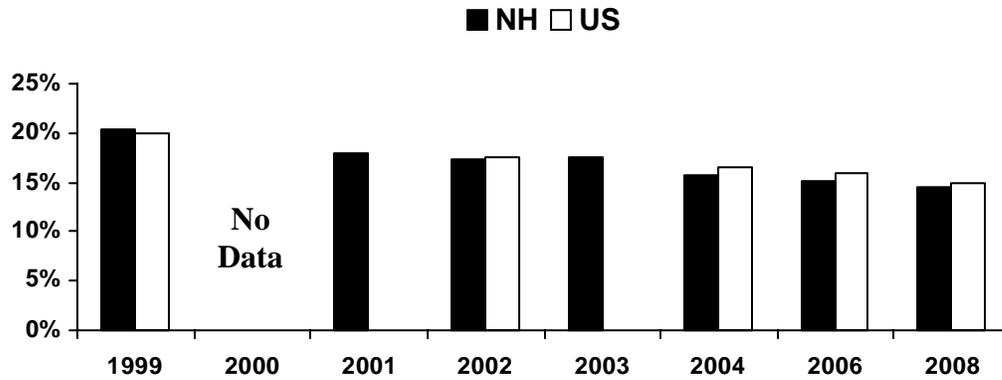
Table 5. Adults who have lost six or more teeth due to decay or gum disease – New Hampshire, 2006

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	15.1	14.2 - 16.1
Male	14.5	13.0 - 16.0
Female	15.8	14.5 - 17.1
18-24 Years	1.2	0.0 - 2.5
25-34 Years	3.6	1.9 - 5.3
35-44 Years	5.0	3.4 - 6.6
45-54 Years	12.3	10.5 - 14.1
55-64 Years	24.9	22.1 - 27.8
65+ Years	44.7	41.7 - 47.8
< \$15,000	34.5	28.9 - 40.0
\$15,000 - \$24,999	30.3	26.2 - 34.5
\$25,000 - \$34,999	22.9	19.0 - 26.8
\$35,000 - \$49,999	16.3	13.4 - 19.0
\$50,000 +	7.0	6.0 - 8.1
Did Not Graduate High School	40.3	34.0 - 46.6
Graduated High School	23.4	21.1 - 25.7
Attended College or Tech School	12.7	10.9 - 14.4
Graduated College or Tech School	6.9	5.9 - 8.0

Table 6. Adults who have lost six or more teeth due to decay or gum disease – New Hampshire, 2008

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	14.6	13.7 - 15.5
Male	14.2	12.8 - 15.6
Female	14.9	13.8 - 16.2
18-24 Years	0.3	0.0 - 0.9
25-34 Years	3.3	1.8 - 4.9
35-44 Years	5.2	3.7 - 6.7
45-54 Years	11.2	9.4 - 13.0
55-64 Years	23.2	20.6 - 25.8
65+ Years	43.4	40.8 - 46.0
< \$15,000	35.5	29.5 - 41.5
\$15,000 - \$24,999	32.5	28.1 - 36.8
\$25,000 - \$34,999	28.7	24.4 - 33.0
\$35,000 - \$49,999	19.4	16.4 - 22.3
\$50,000 +	7.0	6.1 - 8.0
Did Not Graduate High School	39.3	32.7 - 45.9
Graduated High School	22.6	20.4 - 24.8
Attended College or Tech School	14.2	12.4 - 15.9
Graduated College or Tech School	6.9	5.8 - 7.9

Figure 3. Adults who have lost six or more teeth due to decay or gum disease – New Hampshire, 1999-2004, 2006, and 2008 and United States, 1999, 2004, 2006, and 2008



Comment: There were strong associations between tooth loss and age, income, and education. Tooth loss, especially edentulism (i.e., loss of all teeth), can reduce quality of life, self-image, and daily functioning. It is preventable with good oral hygiene, fluoridated water, and regular dental care. Patient and provider attitudes toward tooth retention also play an important role.

In 2008, 15% percent of adults in New Hampshire reported having lost six or more teeth due to decay or gum disease, which is approximately the same as the national estimate of 16.5% from 2004.

Method: This question was asked of all survey participants. Data analysis excluded persons responding “Don’t Know/Not Sure” or “Refused” to this question. Data were available for New Hampshire for 1999, 2001-2004, 2006, and 2008, and for the United States for 1999, 2001, 2004, 2006, and 2008.

Healthy People 2010: The *Healthy People 2010* objective is to increase the proportion of adults aged 35-44 years who have never had a permanent tooth extracted because of dental caries or periodontal disease to 42% (#21-3). In 2008 in New Hampshire, 70.3% of persons 35-44 years of age had never lost a permanent tooth due to decay or gum disease.

Healthy New Hampshire 2010: No objective.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Disease Control and Laboratory Sciences, Health Statistics and Data Management Section.

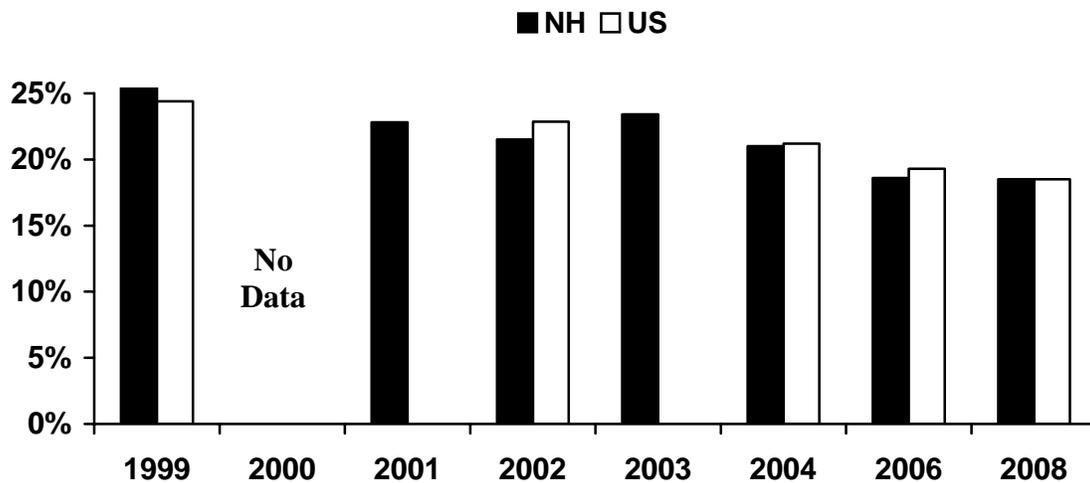
Table 7. Adults aged 65 years of age or older who have lost all of their natural teeth due to decay or gum disease – New Hampshire, 2006

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	18.6	16.2 - 21.0
Male	18.5	14.8 - 22.2
Female	18.6	15.7 - 21.5
< \$15,000	34.6	26.6 - 42.6
\$15,000 - \$24,999	27.8	21.9 - 33.7
\$25,000 - \$34,999	17.8	10.7 - 24.9
\$35,000 - \$49,999	16.7	10.2 - 23.2
\$50,000 +	11.2	3.2 - 19.2
Did Not Graduate High School	48.0	39.2 - 56.8
Graduated High School	24.4	20.1 - 28.7
Attended College or Tech School	14.2	9.7 - 18.7
Graduated College or Tech School	5.7	3.2 - 8.2

Table 8. Adults aged 65 years of age or older who have lost all of their natural teeth due to decay or gum disease – New Hampshire, 2008

	<i>Percent</i>	<i>95% Confidence Interval</i>
All	18.5	16.5 - 20.5
Male	16.1	13.0 - 19.3
Female	20.3	17.6 - 22.9
< \$15,000	36.3	28.5 - 44.0
\$15,000 - \$24,999	29.8	24.3 - 35.3
\$25,000 - \$34,999	22.9	16.9 - 29.0
\$35,000 - \$49,999	15.7	10.6 - 20.9
\$50,000 +	5.5	3.1 - 7.9
Did Not Graduate High School	42.7	34.1 - 51.2
Graduated High School	26.9	22.9 - 31.0
Attended College or Tech School	13.8	10.3 - 17.4
Graduated College or Tech School	6.5	4.3 - 8.7

Figure 4. Adults aged 65 years of age or older who have lost all of their natural teeth due to decay or gum disease – New Hampshire, 1999-2004, 2006, and 2008 and United States, 1999, 2002, 2004, 2006, and 2008



Comment: There were strong associations between complete tooth loss (i.e., edentulism) and income and educational attainment. Persons with lower incomes and less education were more likely to report loss of all their teeth. Edentulism can reduce quality of life, self-image, and daily functioning; it is preventable with good oral hygiene, fluoridated water, and regular dental care. Patient and provider attitudes towards tooth retention also play an important role.

Method: This question was asked of all survey participants. Data analysis excluded persons responding “Don’t Know/Not Sure” or “Refused” to this question and was restricted to persons ≥ 65 years of age. Data were available for New Hampshire for 1999, 2001–2004, 2006, and 2008, and for the United States for 1999, 2002, 2004, 2006, and 2008.

Healthy People 2010: The *Healthy People 2010* objective is to reduce the proportion of adults 65 to 74 years of age who have had all their natural teeth extracted to 20% (#21-4). For New Hampshire in 2008, 14.8% (95% Confidence Interval 12.2-17.3%) of persons 65 to 74 years of age had lost all their teeth.

Healthy New Hampshire 2010: No objective.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Disease Control and Laboratory Sciences, Health Statistics and Data Management Section.

HOSPITAL- AND COMMUNITY-BASED DENTAL PROGRAMS

Table 9. Number of persons treated and children receiving sealants in hospital- and community-based dental programs – New Hampshire, 2005-2006

<i>Program</i>	<i>Number of Adults Treated</i>	<i>Number of Children Treated</i>	<i>% of Adults Receiving Restorative Care</i>	<i>% of Children Receiving Restorative Care</i>	<i>Number of Children Receiving Sealants</i>	<i>% of Children Receiving Sealants</i>
Ammonoosuc Community Health Svcs (Littleton)	99	0	40.4%	NA	0	NA
Avis Goodwin CHC (Rochester/Dover)	797	574	31.1%	50.0%	33	5.7%
Capital Region Family Health Center (Concord)	1,008	126	100.0%	0.0%	25	19.8%
Catholic Medical Center (Manchester)	587	604	56.9%	69.0%	210	34.8%
Community Health Service (Derry)	144	0	98.6%	NA	0	NA
Dental Health Works (Keene)	137	151	29.9%	74.8%	53	35.1%
Dental Resource Center (Laconia)	1,172	939	32.1%	29.9%	268	28.5%
Families First Dental Center (Portsmouth)	672	317	35.9%	33.8%	71	22.4%
Greater Nashua Dental Connection (Nashua)	651	774	20.9%	33.7%	406	52.5%
Health Reach Dental Center (Exeter)	78	3,819	52.6%	40.1%	870	22.8%
Lamprey Health Care (Raymond)	106	374	32.1%	45.5%	33	8.8%
Molar Express (North Country)	93	348	18.3%	100.0%	240	69.0%
TOTAL	5,544	8,026	47.9%	43.8%	2,209	27.5%

Table 10. Number of persons treated and children receiving sealants in hospital- and community-based dental programs – New Hampshire, 2006-2007

<i>Program</i>	<i>Number of Adults Treated</i>	<i>Number of Children Treated</i>	<i>% of Adults Receiving Restorative Care</i>	<i>% of Children Receiving Restorative Care</i>	<i>Number of Children Receiving Sealants</i>	<i>% of Children Receiving Sealants</i>
Ammonoosuc Community Health Svcs (Littleton)	70	0	27.1%	NA	0	NA
Avis Goodwin CHC (Rochester/Dover)	924	956	52.3%	70.1%	122	12.8%
Capital Region Family Health Center (Concord)	1,046	109	100.0%	0.0%	25	22.9%
Catholic Medical Center (Manchester)	376	482	74.2%	66.8%	65	13.5%
Community Health Service (Derry)	172	0	49.4%	NA	0	NA
Dental Health Works (Keene)	218	278	23.9%	41.7%	50	18.0%
Dental Resource Center (Laconia)	1,097	939	37.6%	30.0%	172	18.3%
Families First Dental Center (Portsmouth)	756	392	40.7%	32.9%	72	18.4%
Greater Nashua Dental Connection (Nashua)	509	1,009	30.3%	24.0%	474	47.0%
Health Reach Dental Center (Exeter)	268	4,128	32.1%	35.8%	887	21.5%
Lamprey Health Care (Raymond)	118	423	5.9%	33.3%	66	15.6%
Molar Express (North Country)	135	892	0.0%	87.6%	108	12.1%
TOTAL	5,689	9,608	51.5%	43.3%	2,041	21.2%

Table 11. Number of persons treated and children receiving sealants in hospital- and community-based dental programs – New Hampshire, 2007-2008

<i>Program</i>	<i>Number of Adults Treated</i>	<i>Number of Children Treated</i>	<i>% of Adults Receiving Restorative Care</i>	<i>% of Children Receiving Restorative Care</i>	<i>Number of Children Receiving Sealants</i>	<i>% of Children Receiving Sealants</i>
Ammonoosuc Community Health Svcs (Littleton)	57	0	35.1%	NA	0	NA
Avis Goodwin CHC (Rochester/Dover)	1,189	1,556	79.6%	76.4%	549	35.3%
Capital Region Family Health Center (Concord)	1,049	78	100.0%	14.1%	31	39.7%
Catholic Medical Center (Manchester)	358	507	77.1%	71.0%	74	14.6%
Community Health Service (Derry)	227	4	43.6%	0.0%	0	0.0%
Dental Health Works (Keene)	163	232	18.4%	32.3%	98	42.2%
Dental Resource Center (Laconia)	-		No Report-	-	-	-
Families First Dental Center (Portsmouth)	862	451	36.8%	24.6%	74	16.4%
Greater Nashua Dental Connection (Nashua)	493	917	33.3%	33.6%	494	53.9%
Health Reach Dental Center (Exeter)	1,555	3,887	21.5%	35.8%	711	18.3%
Lamprey Health Care (Raymond)	101	362	5.9%	32.0%	77	21.3%
Molar Express (North Country)	98	411	-	-	396	-
Indian Stream CHC (Colebrook)	41	21	36.6%	9.5%	4	19.0%
White Mountain CHC (Conway)	68	688	42.6%	29.5%	145	21.1%
Weeks Medical Center (Lancaster)	23	0	73.9%	-	0	-
TOTAL	6,284	9,114	52.1%	48.0%	2,653	29.1%

Table 12. Number of persons treated and children receiving sealants in hospital- and community-based dental programs – New Hampshire, 2008-2009

<i>Program</i>	<i>Number of Adults Treated</i>	<i>Number of Children Treated</i>	<i>% of Adults Receiving Restorative Care</i>	<i>% of Children Receiving Restorative Care</i>	<i>Number of Children Receiving Sealants</i>	<i>% of Children Receiving Sealants</i>
Ammonoosuc Community Health Svcs (Littleton)	74	0	50.0%	NA	0	NA
Avis Goodwin CHC (Rochester/Dover)	1,930	1,263	10.3%	39.9%	226	17.9%
Concord Hospital Family Health Center (Concord)	1,121	88	100.0%	12.5%	41	46.6%
Catholic Medical Center (Manchester)	358	564	81.6%	58.7%	138	24.5%
Community Health Service (Derry)	149	3	38.9%	0.0%	0	0.0%
Dental Health Works (Keene)	297	557	11.1%	46.3%	116	20.8%
Dental Resource Center (Laconia)	-	-	No Report-	-	-	-
Families First Dental Center (Portsmouth)	964	530	47.9%	21.7%	58	10.9%
Greater Nashua Dental Connection (Nashua)	520	943	44.4%	49.7%	626	66.4%
Core General Dentistry and Oral Surgery (Exeter)	2,200	0	67.2%	NA	0	NA
Core Physicians Pediatric Dentistry (Exeter)	25	4,225	8.0%	37.3%	1,322	31.3%
Lamprey Health Care (Raymond)	4	0	50.0%	0.0%	0	0.0%
Molar Express (North Country)	195	164	21.0%	67.7%	56	34.1%
Indian Stream CHC (Colebrook)	49	3	44.9%	33.3%	1	33.3%
White Mountain CHC (Conway)	66	780	4.5%	6.8%	273	35.0%
Weeks Medical Center (Lancaster)	32	0	75.0%	NA	0	NA
TOTAL	7,984	9,120	50.2%	37.6%	2,857	31.3%

Figure 5. Hospital- and community-based dental programs – children, New Hampshire, 2005-2009

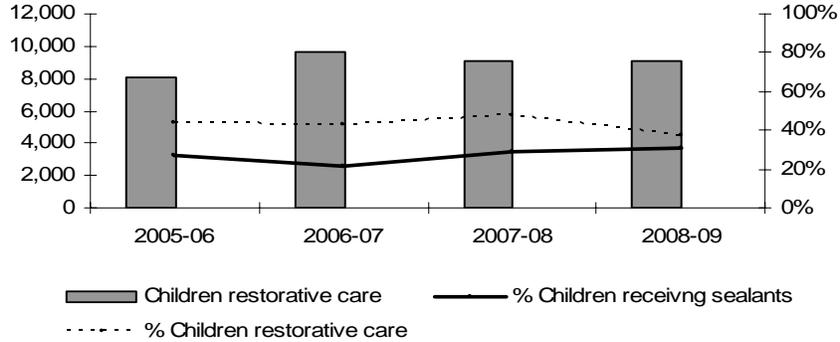
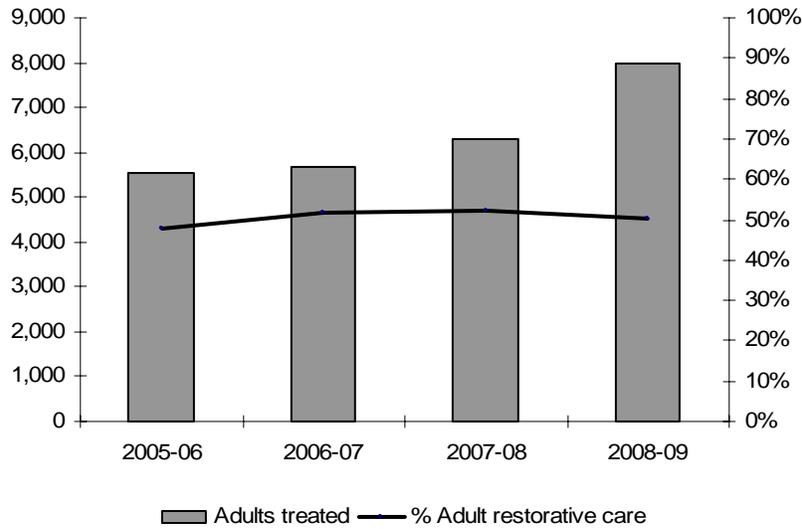


Figure 6. Hospital- and community-based dental programs – adults, New Hampshire, 2005-2009



Comment: These programs seek to provide services to persons who would otherwise have no access to dental care. The Poisson Dental Facility at Catholic Medical Center provides service to patients (mostly children) referred from eight local agencies. In 2007-2008, the Dental Resource Center was unwilling to provide information regarding their program. In 2008-2009, the Dental Health Works (Keene) was only able to provide information on their Medicaid patients due to limitations of the office dental software. In 2007 Upper Connecticut Valley Hospital Miles of Smiles transferred school dental services to the Molar Express, and Health Reach Pediatric Dental Center (Exeter) changed its program name to Core Physicians Pediatric Dental Center. In addition, Core General Dentistry and Oral Surgery now provide oral health care to the adults living in the hospital service area.

Method: Each program reports information to the State's oral health program on an annual basis.

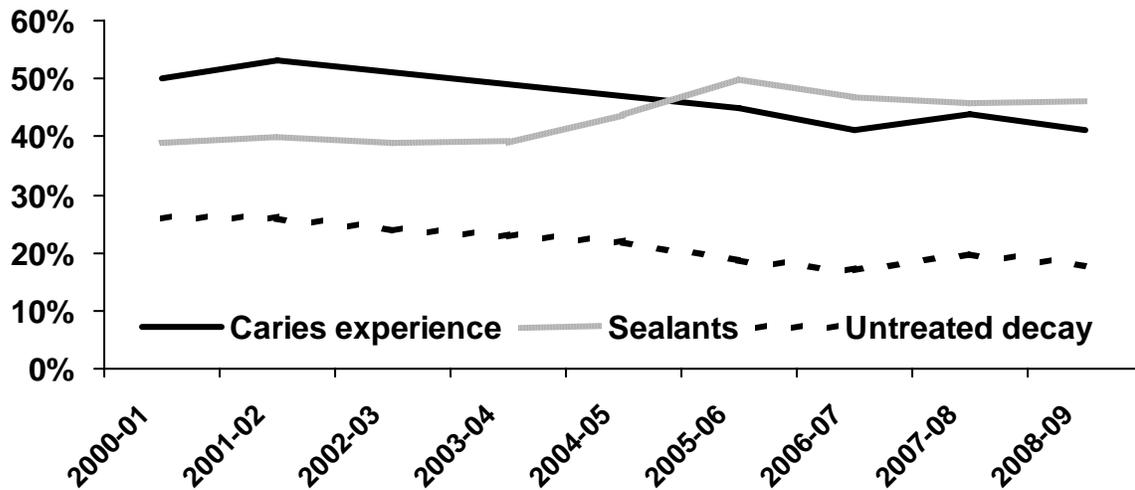
Healthy People 2010: Objective #21-8a is to increase the proportion of children aged 8 years who have received dental sealants on their molar teeth to 50%. Objective #21-10 is to increase the proportion of children and adults who use the oral health care system each year to 56%.

Healthy New Hampshire 2010: The *Healthy New Hampshire 2010* objective is to increase the proportion of children in third grade who have received dental sealants on their permanent molar teeth to 60%.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

SCHOOL-BASED DENTAL PROGRAMS

Figure 7. Percentage of second and third grade students screened in school-based dental programs with caries experience, sealants, and untreated decay, by school year – New Hampshire, 2002-2009



Comment: The percentage of students screened who had caries experience and untreated decay has declined over the past several years, while the presence of protective dental sealants has increased. Because these results represent only those students participating in school-based programs, the data are not representative of all second and third graders in New Hampshire.

Method: Data are reported to the state’s oral health program by each school-based dental program at the end of the academic year.

Healthy People 2010: The *Healthy People 2010* objectives are to reduce the proportion of 6-8 year-old-children with dental caries experience to 42% (#21-1b), to reduce the proportion of 6-8 year-old-children with untreated dental decay to 21% (#21-2b), and to increase the proportion of children aged 8 years who have received dental sealants on their molar teeth to 50% (#21-8a).

Healthy New Hampshire 2010: The *Healthy New Hampshire 2010* objective is to increase the proportion of children in third grade who have received dental sealants on their permanent molar teeth to 60%. In 2008, 40% of a convenience sample of third grade students in New Hampshire school-based dental programs had dental sealants. In 2009 a statewide survey indicated that 60.4% of a scientific representative sample of all third grade students had protective dental sealants.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

Table 13. Number of second and third grade students screened and percentage with untreated decay, caries experience, and sealants by school-based program – New Hampshire, 2005-2006

	# Students	# Screened Students (%)	# Screened students with untreated decay (%)	# Screened students with history of decay (%)	# Screened students with Sealants (%)
APD Upper Valley Smiles	454	124 (27%)	38 (31%)	48 (39%)	59 (48%)
Avis Goodwin Smiles for Strafford County	-	211 (N/A)	37 (18%)	63 (30%)	107 (51%)
Children's Dental Network of Greater Derry	2,177	1,077 (49%)	212 (20%)	435 (40%)	627 (58%)
Cheshire Smiles	1,077	650 (60%)	105 (16%)	320 (49%)	355 (55%)
Claremont Dental Initiative	318	315 (99%)	49 (16%)	216 (69%)	216 (69%)
Coos County Family Health Services	324	183 (56%)	39 (21%)	74 (40%)	76 (42%)
Frisbee Memorial Hospital	1,392	725 (52%)	221 (30%)	399 (55%)	343 (47%)
Health reach Mobile Dental Program	1,705	596 (33%)	99 (17%)	227 (38%)	361 (61%)
Health First Family Care	1,705	649 (38%)	77 (12%)	263 (41%)	431 (66%)
Lakes Region School Dental Program	578	189 (33%)	41 (22%)	61 (32%)	90 (48%)
Lamprey Health Care	1,055	327 (31%)	66 (21%)	180 (55%)	194 (59%)
Manchester Health Department	741	666 (90%)	150 (23%)	342 (51%)	177 (27%)
Milford School Dental Program	438	428 (98%)	31 (7%)	136 (34%)	283 (66%)
Monadnock Healthy Teeth	840	350 (42%)	62 (18%)	127 (36%)	149 (43%)
Rock Dental Clinic	520	290 (56%)	51 (18%)	135 (47%)	108 (37%)
Seacoast Healthy Grins/ Families First	319	279 (87%)	11 (4%)	101 (36%)	137 (49%)
Speare Memorial Hospital	408	166 (41%)	60 (36%)	130 (78%)	69 (42%)
Upper Conn. Miles of Smiles	149	88 (59%)	16 (18%)	40 (45%)	65 (74%)
White Mountain Health	296	284 (96%)	82 (29%)	129 (45%)	61 (21%)
VNA Hospice "School Smiles"	698	380 (54%)	74 (19%)	197 (52%)	77 (20%)
Total	15,194	7,977 (53%)	1,521 (19%)	3,623 (45%)	3,985 (50%)

Table 14. Number of second and third grade students screened and percentage with untreated decay, caries experience, and sealants by school-based program – New Hampshire, 2006-2007

	# Students	# Screened Students (%)	# Screened students with untreated decay (%)	# Screened students with history of decay (%)	# Screened students with Sealants (%)
APD Upper Valley Smiles	466	229 (49%)	0 (0%)	0 (0%)	83 (36%)
Avis Goodwin Smiles for Strafford County	31	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Children's Dental Network of Greater Derry	2,134	1,026 (48%)	171 (17%)	410 (40%)	597 (58%)
Cheshire Smiles	1,018	667 (66%)	106 (16%)	314 (47%)	371 (56%)
Claremont Dental Initiative	312	310 (99%)	23 (7%)	195 (63%)	222 (72%)
Coos County Family Health Services	325	257 (79%)	61 (24%)	120 (47%)	103 (40%)
Frisbee Memorial Hospital	1,390	730 (53%)	223 (31%)	416 (57%)	415 (57%)
Healthreach Mobile Dental Program	1,814	596 (33%)	99 (17%)	227 (38%)	361 (61%)
Health First Family Care	728	347 (48%)	88 (25%)	158 (46%)	123 (35%)
Lakes Region School Dental Program	597	127 (21%)	20 (16%)	40 (31%)	51 (40%)
Lamprey Health Care	1,005	276 (27%)	51 (18%)	121 (44%)	160 (58%)
Manchester Health Department	777	434 (56%)	4 (1%)	0 (0%)	8 (2%)
Milford School Dental Program	370	370 (100%)	39 (11%)	145 (39%)	202 (55%)
Monadnock Healthy Teeth	874	335 (38%)	55 (16%)	162 (48%)	152 (45%)
Rock Dental Clinic	579	274 (47%)	28 (10%)	89 (32%)	85 (31%)
Seacoast Healthy Grins/ Families First	342	281 (82%)	28 (10%)	107 (38%)	90 (32%)
Speare Memorial Hospital	418	149 (36%)	54 (36%)	106 (71%)	75 (50%)
Upper Conn. Miles of Smiles	129	80 (62%)	22 (28%)	36 (45%)	41 (51%)
VNA Hospice "School Smiles"	643	369 (57%)	61 (17%)	135 (37%)	104 (28%)
Total	13,952	6,857 (49%)	1,133 (17%)	2,781 (41%)	3,243 (47%)

Table 15. Number of second and third grade students screened and percentage with untreated decay, caries experience, and sealants by school-based program – New Hampshire, 2007-2008

	# Students	# Screened Students (%)	# Screened students with untreated decay (%)	# Screened students with history of decay (%)	# Screened students with Sealants (%)
APD Upper Valley Smiles	447	136 (30%)	23 (5%)	0 (0%)	0 (0%)
Avis Goodwin Smiles for Strafford County	626	238 (38%)	52 (22%)	126 (53%)	117 (49%)
Concord School Dental Sealant Program	395	69 (17%)	-	-	-
Children's Dental Network of Greater Derry	2,177	915 (42%)	165 (18%)	399 (44%)	531 (58%)
Cheshire Smiles	1,111	661 (59%)	115 (17%)	340 (51%)	347 (52%)
Claremont Dental Initiative	267	266 (100%)	36 (14%)	166 (62%)	168 (63%)
Coos County Family Health Services	327	257 (79%)	91 (35%)	167 (65%)	119 (46%)
Frisbee Memorial Hospital	1,424	794 (56%)	231 (29%)	396 (50%)	429 (54%)
Healthreach Mobile Dental Program	1,693	659 (39%)	121 (18%)	275 (42%)	373 (57%)
Health First Family Care	728	138 (19%)	26 (19%)	44 (32%)	34 (25%)
Hillsborough School Program	168	168 (100%)	12 (7%)	16 (10%)	8 (5%)
Lakes Region School Program	482	87 (18%)	12 (14%)	26 (30%)	29 (33%)
Lamprey Health Care	1,058	376 (36%)	77 (20%)	158 (42%)	284 (76%)
Manchester Health Department	1,187	1,022 (86%)	288 (28%)	521 (51%)	335 (33%)
Milford School Dental Program	364	364 (100%)	49 (13%)	118 (32%)	170 (47%)
Monadnock Healthy Teeth	850	318 (37%)	29 (9%)	109 (34%)	149 (47%)
Rock Dental Clinic	558	278 (50%)	38 (14%)	114 (41%)	88 (32%)
Seacoast Healthy Grins/ Families First	321	265 (83%)	23 (9%)	74 (28%)	115 (43%)
Speare Memorial Hospital	421	409 (97%)	92 (22%)	229 (56%)	160 (39%)
VNA Hospice "School Smiles"	666	371 (56%)	48 (13%)	136 (37%)	114 (31%)
Total	15,270	7,791 (51%)	1,528 (20%)	3,414 (44%)	3,570 (46%)

Table 16. Number of second and third grade students screened and percentage with untreated decay, caries experience, and sealants by school-based program – New Hampshire, 2008-2009

	# Students	# Screened Students (%)	# Screened students with untreated decay (%)	# Screened students with history of decay (%)	# Screened students with Sealants (%)
APD Upper Valley Smiles	412	107 (26%)	29 (27%)	0 (0%)	28 (26%)
Avis Goodwin Smiles for Strafford County	687	304 (44%)	40 (13%)	210 (69%)	123 (40%)
Concord School Dental Sealant Program	654	111 (17%)	43 (39%)	-	39 (35%)
Children's Dental Network of Greater Derry	2,029	1,052 (52%)	147 (14%)	395 (38%)	586 (56%)
Cheshire Smiles	1,102	720 (65%)	122 (17%)	371 (52%)	395 (55%)
Claremont Dental Initiative	274	272 (99%)	37 (14%)	137 (50%)	182 (67%)
Coos County Family Health Services	306	242 (79%)	71 (29%)	138 (57%)	81 (33%)
Frisbee Memorial Hospital	1,414	979 (69%)	283 (29%)	346 (35%)	561 (57%)
Core Mobile Dental Program (Healthreach)	2,015	673 (33%)	118 (18%)	266 (40%)	351 (52%)
Health First Family Care	728	138 (19%)	26 (19%)	44 (32%)	34 (25%)
Hillsborough School Program	188	180 (96%)	17 (9%)	0 (0%)	6 (3%)
Lakes Region School Program	480	162 (34%)	10 (6%)	33 (20%)	104 (64%)
Lamprey Health Care	1,063	259 (24%)	51 (20%)	108 (42%)	65 (25%)
Manchester Health Department	1,188	1,024 (86%)	210 (21%)	515 (50%)	362 (35%)
Milford School Dental Program	408	408 (100%)	49 (12%)	87 (21%)	220 (54%)
Monadnock Healthy Teeth to Toes	839	334 (40%)	41 (12%)	134 (40%)	141 (42%)
Rock Dental Clinic	558	278 (50%)	38 (14%)	114 (41%)	88 (32%)
Salem School Dental Program	627	295 (47%)	58 (20%)	143 (48%)	187 (63%)
Seacoast Healthy Grins/ Families First	346	306 (88%)	17 (6%)	77 (25%)	104 (34%)
Speare Memorial Hospital	404	390 (97%)	70 (18%)	206 (53%)	194 (50%)
VNA Hospice "School Smiles"	643	444 (69%)	84 (19%)	201 (45%)	135 (30%)
Total	16,365	8,678 (53%)	1,561 (18%)	3,525 (41%)	3,986 (46%)

Comment: Because these results represent a convenience sample of only those students participating in school-based dental programs, the data are not representative of all second and third graders in New Hampshire.

Method: Each school-based dental program reports data to the state's oral health program at the end of the academic year.

Healthy People 2010: The *Healthy People 2010* objectives are to reduce the proportion of 6-8-year-old children with dental caries experience to 42% (#21-1b), to reduce the proportion of 6-8-year-old children with untreated dental decay to 21% (#21-2b), and to increase the proportion of children aged 8 years who have received dental sealants on their molar teeth to 50% (#21-8a).

Healthy New Hampshire 2010: The *Healthy New Hampshire 2010* objective is to increase the proportion of children in third grade who have dental sealants on their permanent molar teeth to 60%. In 2008, 40% of second and third grade students screened in school-based dental programs had dental sealants.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

Table 17. Students receiving sealants through the school-based dental programs – New Hampshire, 2006-2009

Program	School Year 2006-2007	School Year 2007-2008	School Year 2008-2009
APD Upper Valley Smiles	0	65	58
Avis Goodwin Smiles for Strafford County	0	19	9
Children's Dental Network / AEF	98	124	98
Cheshire Smiles	37	38	42
Claremont Dental Initiative	7	20	14
Concord School Dental Sealant Program	0	30	48
Coos County Family Health Services	2	8	12
Frisbee Memorial Hospital	29	57	55
Core Mobile Dental Program (Healthreach)	24	11	22
Health First Family Care	15	14	14
Hillsborough School Dental Program	0	17	10
Lakes Region School Program	35	43	35
Lamprey Health Care	21	26	24
Manchester Health Department	117	325	79
Milford school Dental Program	9	11	9
Monadnock Healthy Teeth to Toes	73	33	34
Rock Dental Clinic	22	0	0
Salem School Dental Program			22
Seacoast Healthy Grins/ Families First	13	22	18
Speare Memorial Hospital	4	5	6
Upper Conn. Miles of Smiles	0	0	0
White Mountain Health- discontinued	0	0	0
VNA Hospice "School Smiles"	20	26	26
Total	526	894	643

Comment: Before school year 2006-2007, there were no sealant programs in the Hillsborough Schools, and the Concord Dental Sealant Program did not exist. That year there were 20 school preventive dental programs in which 16 (80%) provided dental sealants to students. In 2007, Upper Connecticut Valley Hospital Miles of Smiles and the White Mountain Community Health Center discontinued their school dental programs. During the 2007-2008 school year, there were 20 programs in which 19 (95%) provided dental sealants to students. In the 2008-2009 school year, the new Salem School Dental Program offered dental sealants to students. Among 21 school dental programs in 2008-2009, 20 (95%) offered protective sealants to students.

Method: Data are reported to the State's oral health program by each school-based dental program at the end of the academic year.

Healthy People 2010: The *Healthy People 2010* objective is to increase the proportion of children aged 8 years who have received dental sealants on their molar teeth to 50% (#21-8a).

Healthy New Hampshire 2010: The *Healthy New Hampshire 2010* objective is to increase to 60% the proportion of third grade students who have dental sealants on their permanent molar teeth. In 2009, 60.4% of third grade students had protective dental sealants on their permanent molar teeth.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

THIRD GRADE ORAL HEALTH SURVEY

Table 18. Percentage of third graders with untreated decay, decay experience, and sealants – New Hampshire, 2009

Variable	Percent of Children	95% Confidence Interval
Decay experience	43.6	39.7-47.4
Untreated decay	12.0	9.6-14.3
Dental sealants	60.4	56.8-64.1
Need treatment (early & urgent)	12.0	9.7-14.4
Need urgent treatment	1.0	0.5-1.5

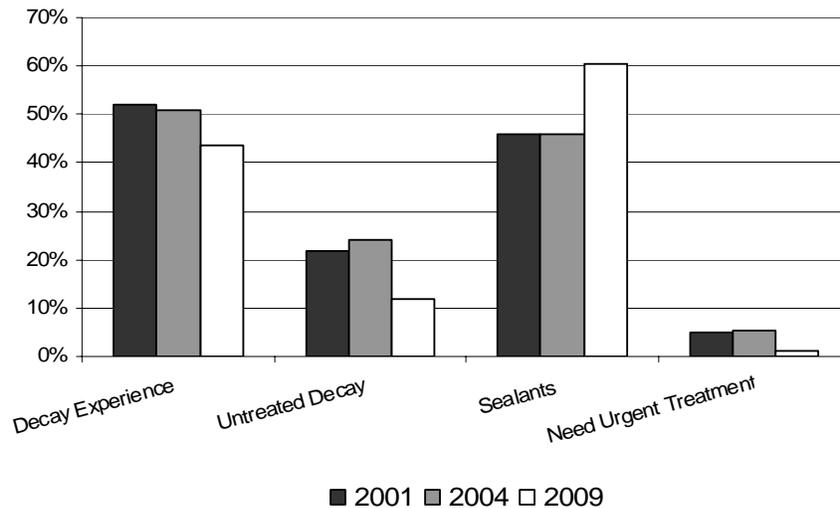
Table 19. Percentage of third graders with untreated decay, decay experience, and sealants, by geographic area – New Hampshire, 2009

Variable	Belknap Merrimack (n=376)	Carroll Grafton (n=393)	Cheshire Sullivan (n=300)	Coos (n=217)	Hills. (n=1,021)	Rocking. (n=376)	Strafford (332)
Decay Experience	50.2 (39.7-60.7)	46.7 (36.7-56.7)	51.6 (44.5-58.7)	64.0	43.9 (34.7-53.1)	38.9 (32.9-44.9)	44.2 (32.3-56.1)
Untreated Decay	14.9 (7.2-22.5)	17.0 (9.2-24.7)	13.3 (8.4-18.3)	30.7	10.6 (6.8-14.4)	10.8 (5.9-15.8)	13.7 (6.0-21.3)
Dental sealants	59.8 (52.0-67.5)	39.8 (27.9-51.7)	61.7 (56.4-67.0)	23.7	60.3 (53.9-66.7)	63.8 (55.6-71.9)	56.3 (48.9-63.8)
Need treatment	14.9 (7.2-22.5)	16.7 (9.2-24.2)	13.7 (8.6-18.8)	31.1	10.7 (7.0-14.4)	10.8 (5.9-15.8)	14.6 (6.8-22.4)
Need urgent treatment	1.4 (0.0-3.1)	2.5 (0.9-4.2)	0.7 (0.0-1.7)	0.8	0.4 (0.0-0.9)	1.2 (0.0-2.5)	2.0 (0.2-3.7)

Table 20. Percentage of third graders with untreated decay, decay experience, and sealants, 2001-2009

Variable	2001	2004	2009
Decay (Caries) Experience	52.0 (45.5-58.8)	51.0 (45.7-56.3)	43.6 (39.7-47.4)
Untreated Decay (Caries)	21.7 (14.3-29.1)	24.1 (18.0-30.2)	12.0 (9.6-14.3)
Sealants	45.9 (37.7-54.0)	45.9 (36.9-48.1)	60.4 (56.8-64.1)
Need Urgent Treatment	5.1 (3.0-7.3)	5.2 (3.2-7.2)	1.0 (0.5-1.5)

Figure 8. Third Grade Oral Health Survey, New Hampshire, 2001, 2004, 2009



Comment: This is the third oral health survey (2001, 2004, and 2009) among third grade students attending New Hampshire public schools. In addition to statewide data, area specific estimates were also collected indicating geographic disparities in oral health. Results from New Hampshire third grade oral health surveys conducted in 2001 to 2009 indicate improvements in the oral health status of school-aged children. The full report is available at: <http://www.dhhs.nh.gov/DHHS/RHPC/oral-health.htm> Results from other states that have conducted oral health surveys in schools are available at: <http://www.cdc.gov/nohss>.

Method: The survey was conducted during school year 2008-2009. Survey design was adapted from the *Basic Screening Surveys* developed by the Association of State and Territorial Dental Directors.

Healthy People 2010: The *Healthy People 2010* objectives are to reduce the proportion of 6-8-year-old children with dental caries experience to 42% (#21-1b), to reduce the proportion of 6-8-year-old children with untreated dental decay to 21% (#21-2b), and to increase the proportion of children aged 8 years who have received dental sealants on their permanent molar teeth to 50% (#21-8a).

Healthy New Hampshire 2010: The *Healthy New Hampshire 2010* objective is to increase the proportion of children in third grade who have received dental sealants on their permanent molar teeth to 60%. In 2008, data from New Hampshire school-based programs indicated that 40% of second and third grade students screened had dental sealants. In 2009, a statewide representative survey of New Hampshire third grade students indicated that 60.4% had dental sealants on their permanent molar teeth. For the first time the sample was large enough to demonstrate regional oral health disparities in New Hampshire.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

HEAD START HEALTHY SMILES – HEALTHY GROWTH

The New Hampshire Head Start *Healthy Smiles – Healthy Growth* Survey was conducted between October 2007 and February 2008 in 27 randomly selected New Hampshire Head Start (NH HS) sites. The goal of the survey was to collect uniform information related to the oral health and height/weight status of children enrolled in the NH HS and to use this information for surveillance, intervention planning and evaluation.

Table 21. Oral Health Status of New Hampshire Head Start Children – 2007-2008

Oral Health Status	Count	Percent	95% CI
Untreated Decay (Caries)	186	30.6	27.3 - 34.0
Decay (Caries) Experience	244	40.2	37.0 - 43.4
Dental Care Needed	137	23.4	20.2 - 26.6
Urgent Care Needed	13	0.8	0.4 - 1.3

Comment: Out of 45 NH Head Start sites, 27 were selected randomly. Altogether, 607 children ages 3-5 years old returned informed consent, agreed to participate and underwent oral health screenings.

Method: The study employed a one-stage cluster design; data were collected and analyzed by the New Hampshire Oral Health Program.

Healthy People 2010: The *Healthy People 2010* objectives are to reduce the proportion of 2 to 4 year old children with dental caries experience to 11% (#21-1a), and to reduce the proportion of 6 to 8 year old children with untreated dental decay to 9% (#21-2a).

Healthy New Hampshire 2010: No Objective

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

YOUTH TOBACCO SURVEY

Table 22. Middle and high school students who reported that a dentist or someone in a dentist’s office talked to them about the danger of tobacco use during the past 12 months – New Hampshire, 2007 and 2009

	<i>Percent</i>	<i>95% Confidence Interval</i>
Middle School Students – Grades 6-8 (2007)		
Asked about smoking	18.9	16.7-21.1
Advised not to smoke	33.1	29.8-36.4
High School Students – Grades 9-12 (2009)		
Asked about smoking	47.4	44.2-50.6
Advised not to smoke	42.3	39.4-45.2

Comment: Tobacco is the leading cause of preventable mortality and a major determinant of oral health. Dentists and dental hygienists should routinely counsel their patients, especially adolescents, about the dangers of tobacco use.

Method: Data are based on self-reports of a sample of students in public schools in New Hampshire.

Healthy People 2010: Objective #27-2a is to reduce tobacco use by adolescents to 21%. Objective #1-3 is to increase the proportion of people appropriately counseled about health behaviors.

Healthy New Hampshire 2010: Reduce the percentage of high school students who report current tobacco use to 24%. Increase the percentage of high school students who report never using tobacco to 43%.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Prevention Services, Tobacco Prevention and Control Program.

CANCER REGISTRY AND VITAL STATISTICS

Figure 9. New cases of oral cancer by gender – New Hampshire, 2004

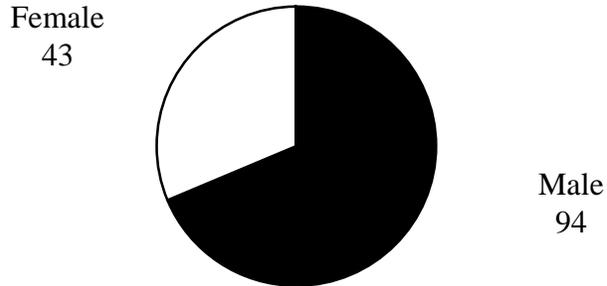


Figure 10. New cases of oral cancer by gender – New Hampshire, 2005

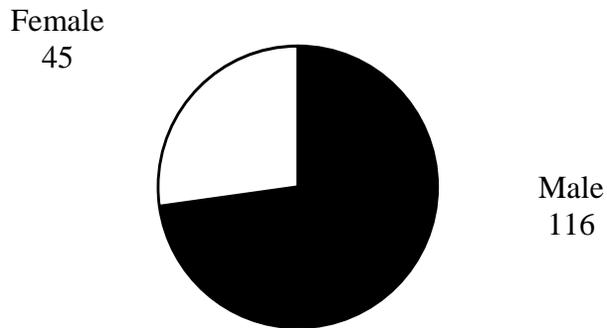


Figure 11. New cases of oral cancer by gender – New Hampshire, 2006

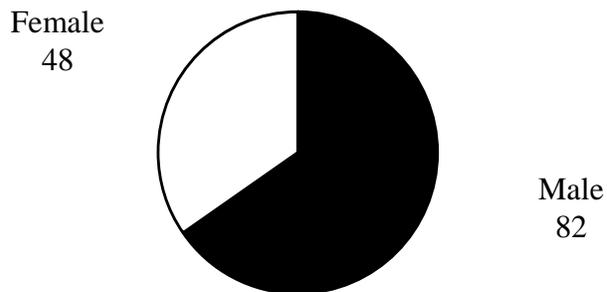


Table 23. Incidence rate of oral cancer by gender – New Hampshire, 2001-2006

	<i>Age-adjusted incidence rate (per 100,000) New Hampshire</i>					
	2001	2002	2003	2004	2005	2006
All 95% CI	9.8 (8.1-11.5)	10.7 (8.9-12.5)	12.2 (10.4-14.1)	9.7 (8.1-11.3)	11.2 (9.4-12.9)	8.8 (7.3-10.3)
Male 95% CI	14.9 (11.9-18.4)	15.6 (12.6-19.1)	17.6 (14.3-20.9)	13.9 (11.2-17.0)	17.2 (14.0-20.3)	11.7 (9.3-14.5)
Female 95% CI	5.9 (4.2-8.1)	6.7 (4.9-8.9)	7.5 (5.7-9.8)	5.7 (4.1-7.7)	5.9 (4.3-7.9)	6.1 (4.5-8.1)

Comment: Oral cancer consists of cancer of the lips, salivary glands, mouth, and throat. Approximately 75% of oral cancer is attributable to tobacco and alcohol use. Efforts to decrease oral cancer are dependent on reduction of these two risk factors, along with early detection and treatment.

Method: Data are from the State cancer registry.

Healthy People 2010: Objective #3-6 is to reduce the oropharyngeal death rate to 2.7 per 100,000 population.

Healthy New Hampshire 2010: No objective.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Disease Control and Laboratory Sciences, Health Statistics and Data Management Section.

Figure 12. Mortality from oral cancer by gender – New Hampshire, 2003

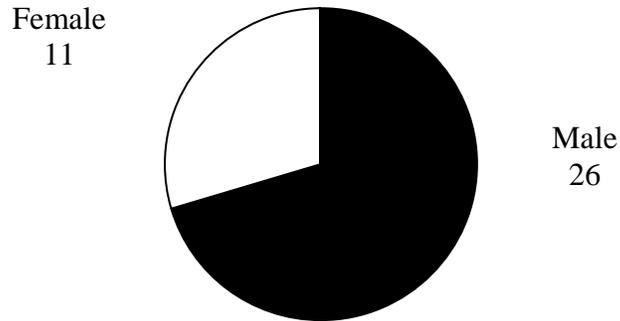


Figure 13. Mortality from oral cancer by gender – New Hampshire, 2004

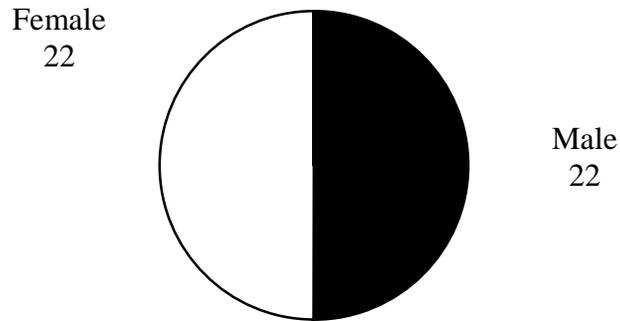


Figure 14. Mortality from oral cancer by gender – New Hampshire, 2005

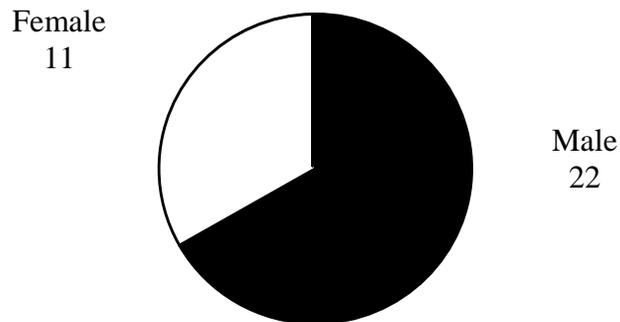


Figure 15. Mortality from oral cancer by gender – New Hampshire, 2006

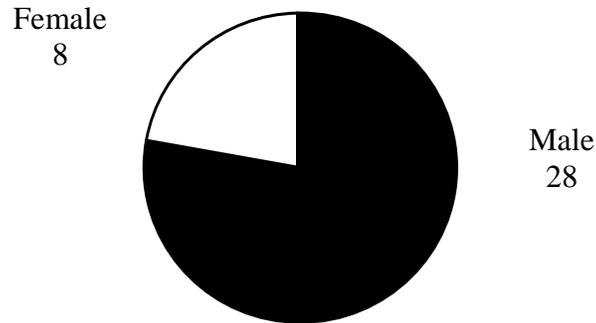


Table 24. Mortality rate from oral cancer by gender – New Hampshire, 2001-2006

	Age-adjusted incidence rate (per 100,000), New Hampshire					
	2001	2002	2003	2004	2005	2006
All 95% CI	3.0 (2.1-4.1)	3.9 (2.9-5.1)	2.7 (1.9-3.8)	3.2 (2.3-4.3)	2.4 (1.7-3.4)	2.5 (1.8-3.5)
Male 95% CI	4.7 (3.0-6.9)	5.3 (3.6-7.6)	4.2 (2.7-6.1)	3.3 (2.1-5.0)	3.6 (2.3-5.5)	4.4 (2.9-6.3)
Female 95% CI	1.7 (0.9-3.0)	2.8 (1.7-4.3)	1.4 (0.7-2.6)	2.9 (1.8-4.5)	1.6 (0.8-2.8)	0.9 (0.4-1.8)

Comment: Oral cancer consists of cancer of the lips, salivary glands, mouth, and throat. Approximately 75% of oral cancer is attributable to tobacco and alcohol use. Efforts to decrease oral cancer are dependent on reduction of these two risk factors, along with early detection and treatment.

Method: Data are from death certificates.

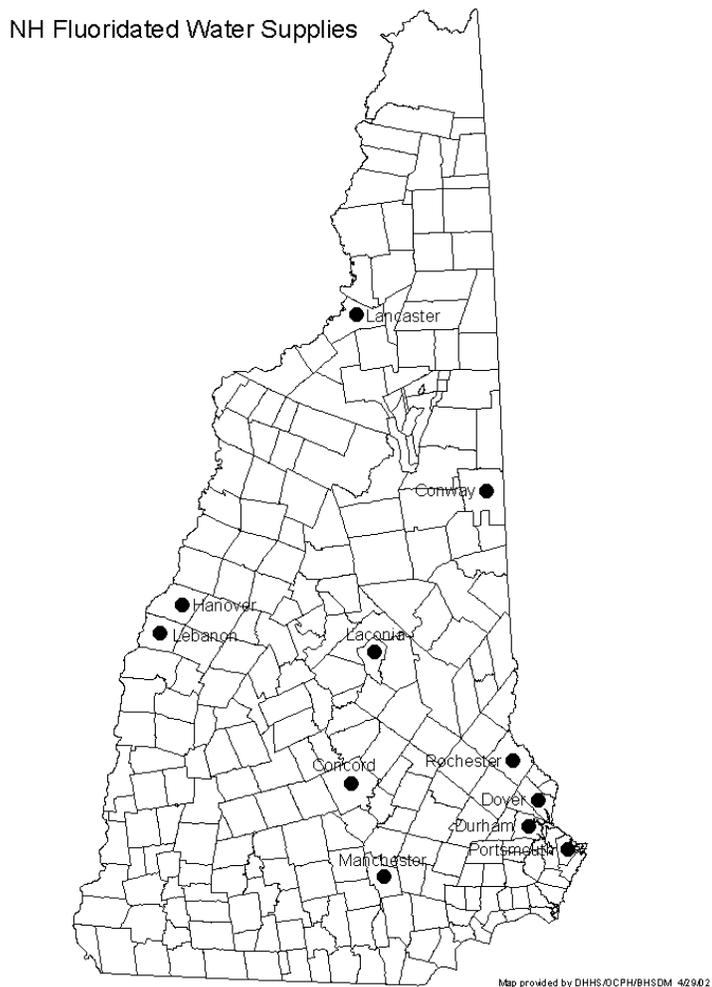
Healthy People 2010: The *Healthy People 2010* objective (#3-6) is to reduce the oropharyngeal cancer death rate to 2.7 per 100,000 (age-adjusted to the 2000 population).

Healthy New Hampshire 2010: No objective.

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Disease Control and Laboratory Sciences, Health Statistics and Data Management Section.

FLUORIDATION

Figure 16. Towns with Fluoridated Public Water Supplies - New Hampshire, 2010



Comment: Some residents of the following towns receive water from a neighboring community with a fluoridated water supply: Conway (from Fryeburg, Maine); Rollinsford (from Dover); Lee (from Durham); Belmont and Gilford (from Laconia); Auburn, Bedford, Derry, Goffstown, Hooksett, and Londonderry (from Manchester), and Greenland, New Castle, Newington, and Rye (from Portsmouth).

Naturally occurring fluoride has been documented in water from many areas of New Hampshire. Because of variations in fluoride levels, individual wells should be tested to determine their fluoride content.

Method: Data on fluoridated community water systems is maintained by the Department of Environmental Services and the Department of Health and Human Services using the Water Fluoridation Reporting System (WFRS).

Healthy People 2010: Objective #21-9 is to increase the proportion of the U.S. population served by community water systems with optimally fluoridated water to 75%.

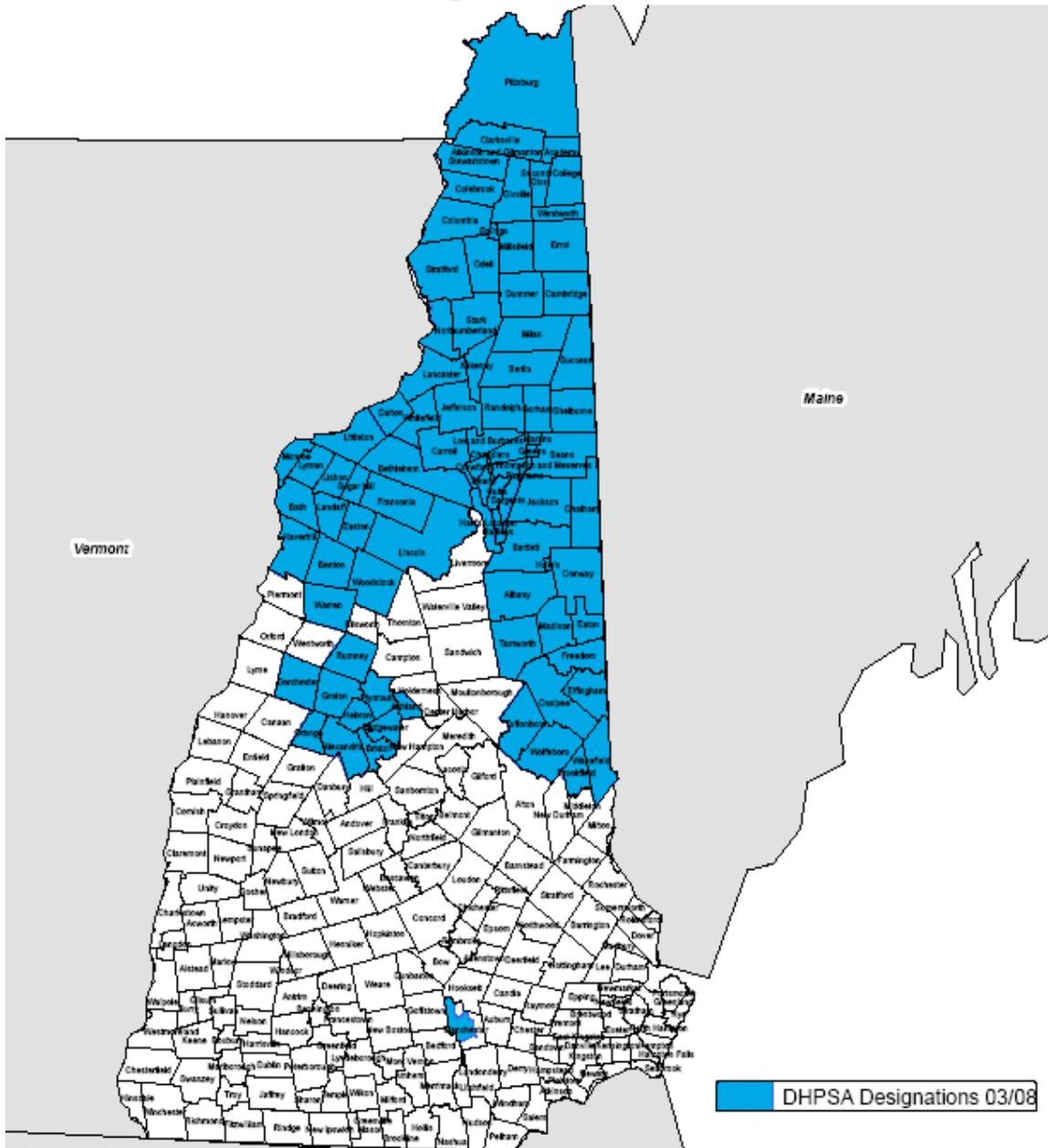
Healthy New Hampshire 2010: The *Healthy New Hampshire 2010* objective is to have 65% of the population served by community water systems with optimally fluoridated water. In New Hampshire in 2006, 43% of persons served by community water systems were receiving fluoridated water.

Data Source: New Hampshire Department of Environmental Services⁽⁵⁾ and New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

DENTAL HEALTH PROFESSIONAL SHORTAGE AREA

Figure 17. Dental Health Professional Shortage Area Map – New Hampshire, 2008

New Hampshire's Dental Health Professional Shortage Area Designations - 03/08



Map provided by Department of Health and Human Services, Rural Health and Primary Care Section

Table 25. Estimated Population Living in Dental Health Professional Shortage Areas⁽⁶⁾ – New Hampshire and United States, 2008

	NH #	NH %	US #	US %
Estimated Underserved Population	41,690	3.20%	31,531,717	10.40%

Table 26. New Hampshire Counties and the Number of Dentists by Specialty -- 2009

County	Totals	Endodontics	General Practice	Oral Maxillofacial Surgery	Orthodontics	Pedodontics	Periodontics	Prosthodontics
Belknap	36	0	30	1	3	0	2	0
Carroll	28	1	22	2	2	0	1	0
Cheshire	45	4	29	5	3	2	2	0
Coos	18	0	16	0	2	0	0	0
Grafton	68	2	51	5	7	1	2	0
Hillsborough	323	11	237	15	29	10	14	7
Merrimack	114	9	85	7	4	4	4	1
Rockingham	220	4	169	8	19	8	8	4
Strafford	73	2	56	3	8	2	2	0
Sullivan	15	0	12	1	1	1	0	0
TOTAL	940	33	707	47	78	28	35	12

Comment: The northern part of New Hampshire is designated as a Dental Health Professional Shortage Area (DHPSA). Designated counties include Coos, Grafton, and Carroll, as well as a small portion of Hillsborough County. In Coos County, there are a total of 18 practicing dentists, two of which practice as specialists.

In 2008, 41,690 NH residents lived in underserved areas in New Hampshire, about 3.2% of the population.

Method: The U.S. DHHS and Health Resources and Services Administration Shortage Designation Branch develops shortage designation criteria and uses them to decide whether or not a geographic area, population group, or facility is a Health Professional Shortage Area or a Medically Underserved Area or Population.⁽⁷⁾ New Hampshire's data is collected by NH DHHS, Rural Health and Primary Care Section, serving as the Primary Care Office (PCO).⁽⁸⁾

Healthy People 2010: (Objective #21-10) Increase the proportion of children and adults who use the oral health care system each year to 56%.

Healthy New Hampshire 2010: No objective.

Data Source: State Licensing Boards Licensed Provider Lists and designation criteria survey from the NH DHHS, Rural Health and Primary Care Section serving as the PCO.

AMBULATORY CARE SENSITIVE EMERGENCY DEPARTMENT VISITS

Hospital Emergency Departments (ED) provide treatment for a variety of conditions, some of which are preventable and treatable in the primary care setting. Ambulatory care sensitive (ACS) conditions represent diagnoses when timely ambulatory care can prevent the need for emergency care.

Figure 18. Emergency Department Visits for Selected Chronic Disease Related Ambulatory Care Sensitive Conditions – New Hampshire, 2005

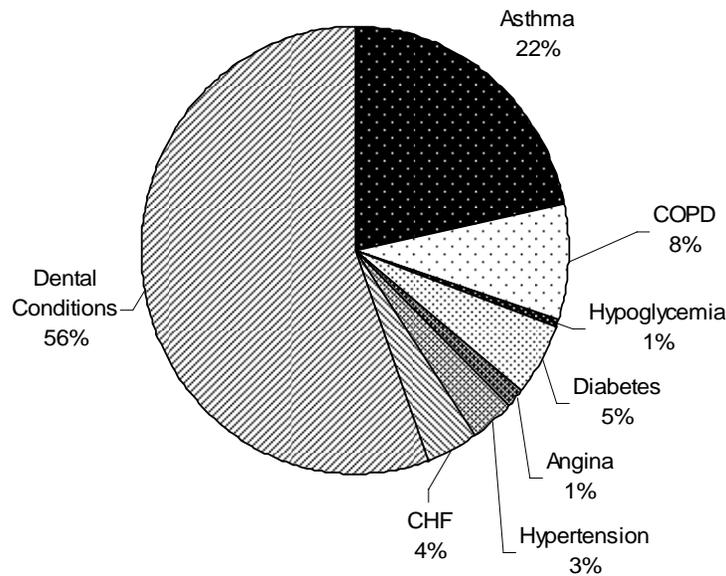


Table 27. Number and age-adjusted rate per 10,000 of dental condition associated ED visits, New Hampshire, 2001-2005

2001		2002		2003		2004		2005	
<i>N</i>	% 95% CI	<i>N</i>	% 95% CI	<i>Nr</i>	% 95% CI	<i>Nr</i>	% 95% CI	<i>N</i>	% 95% CI
11,067	89.5 88.6-90.5	13,132	105.8 104.8-106.9	14,876	119.7 118.6-120.7	15,847	127.2 126.2-128.3	16,230	129.9 128.8-131.0

Comment: ACS dental conditions represent approximately 3% of all ED visits in New Hampshire; and 56% of ED visits due to chronic ACS. The number of ED dental visits increased substantially from 11,067 (rate 89.5/10,000) in 2001 to 16,230 visits (rate 129.9/10,000) in 2005.

Method: The estimates for the ACS dental conditions were derived from the New Hampshire Outpatient Hospital Discharge dataset that includes ED visits from all licensed EDs in New Hampshire as well as records of NH residents who visited an ED in Maine, Vermont and Massachusetts. The rates per 10,000 population were adjusted to 2000 US population.

Healthy People 2010: The *Healthy People 2010* objectives are to reduce the proportion of adults with untreated decay to 15% (#21-2d.)

Healthy New Hampshire 2010: No Objective

Data Source: New Hampshire Department of Health and Human Services, Division of Public Health Services, Bureau of Community Health Services, Oral Health Program.

NATIONAL ORAL HEALTH SURVEILLANCE SYSTEM

Table 28.

<i>Indicator</i>	<i>New Hampshire</i>	<i>United States</i>	<i>Healthy People 2010</i>
Annual dental visit in persons \geq 18 years	77% (2008)	69% (2004)	---
Annual teeth cleaning in persons \geq 18 years	77% (2008)	69% (2004)	---
Complete tooth loss in persons \geq 65 years	15% (2008)	21% (2004)	20% among 65-74 years old
Oral cancer mortality rate per 100,000 persons	2.5 (2006)	2.5 (2006)	2.7
Untreated caries in third grade students	12% (2009)	---	21% in children 6-8 years
History of decay in third grade students	44% (2009)	---	42% in children 6-8 years
Sealants in third grade students	60% (2009)	---	50% in children 8 years
Fluoridation of public water supplies	43% (2006)	69% (2006)	75%

Comment: Data from the eight indicators in the National Oral Health Surveillance System, ⁽⁹⁾ indicate that New Hampshire is doing reasonably well on some measures. However, additional progress is needed to reach *Healthy People 2010* objectives and to prepare for new *Healthy People 2020* objectives currently under development.

CONCLUSIONS

The data in this report indicate that oral health problems, such as dental caries in children and tooth loss in adults, are still common in New Hampshire. Effective preventive measures such as water fluoridation and dental sealants are underutilized. The data also show marked regional oral health disparities and disparities by socioeconomic status. Individuals who have lower incomes or less education are substantially more likely to be unable to access care and to have more dental problems. Additional progress needs to be made if New Hampshire is to achieve the state and national oral health objectives established for 2010, and to prepare for new *Healthy People 2020* objectives currently under development.

CONTRIBUTORS

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